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Price endings of luxury handbags : managerial practices customers' perceptions and preferences

Annalisa Fraccaro

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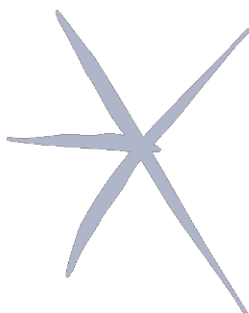
THESE

En vue de l'obtention du
DOCTORAT ÈS SCIENCES DE GESTION

Par

Annalisa FRACCARO

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JURY

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“Alice: Would you tell me, please, which way I ought to go from here?

The Cheshire Cat: That depends a good deal on where you want to get to.

Alice: I don't much care where.

The Cheshire Cat: Then it doesn't much matter which way you go.

Alice: ...So long as I get somewhere.

The Cheshire Cat: Oh, you're sure to do that, if only you walk long enough.”

– Lewis Carroll, Alice in Wonderland

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Résumé

En se basant sur la littérature en marketing sur les terminaisons de prix et le pricing du luxe, cette thèse met en évidence le paradoxe résultant de l'utilisation de prix odd (i.e., des prix juste en dessous d'un nombre rond) dans le contexte des produits de luxe où, intuitivement, les prix devraient majoritairement être des nombres ronds. Les pratiques en termes de terminaisons de prix sont étudiées dans la catégorie des sacs à main de luxe.

Une première analyse empirique identifie quatre types de terminaisons de prix : les prix odd, i.e., des prix qui sont jusqu'à 10 euros inférieurs à un prix rond (en euros ou en dollars), les prix even, i.e., prix se finissant avec au moins deux zéros et sans partie décimale, les prix se finissant en -50, et les autres types de prix, i.e., les prix finissant par -10, -20, -30, -40, -60, -70 et -80. Les unités ne sont généralement pas utilisées et le chiffre des unités est donc toujours -0.

Dans une seconde partie, la thèse identifie les déterminants de l'utilisation des différentes terminaisons de prix. Les prix odd et « autre » sont, en grande partie, utilisés pour des sacs abordables, en toile, avec des prix relativement faibles et un logo assez visible ; les prix even sont, au contraire, principalement utilisés pour des sacs de qualité supérieure tels que des sacs en cuir exotique, des sacs avec des niveaux de prix très élevés et sans aucun logo. Enfin, les prix en -50 sont utilisés pour des sacs de gamme intermédiaire, en cuir, avec un prix compris entre 1000 et 2000 euros/dollars et qui sont généralement assez discrets. Ces techniques de pricing sont très communes pour les marques analysées et sont persistantes au cours du temps. Cependant, un même produit dont le prix augmente d'une saison à l'autre changera souvent de terminaison. Cela indique qu'il n'y a pas nécessairement de règles fixes concernant le choix des terminaisons de prix.

Le troisième chapitre présente les résultats de deux expérimentations dont l'objectif est de mesurer les perceptions des consommateurs concernant différentes facettes du luxe et leur perception globale du caractère luxueux d'un produit. De manière surprenante, les consommateurs de produits de luxe perçoivent un prestige plus élevé, une qualité supérieure et un niveau de luxe plus élevé lorsqu'ils sont exposés à des prix odd ou des prix « autres » que lorsqu'ils sont exposés à des prix even. Ces perceptions plus positives se traduisent par des préférences plus élevées, qui sont mesurées grâce à une analyse conjointe réalisée dans la quatrième et dernière partie empirique du document. De manière intéressante, à un niveau agrégé, les personnes interrogées préfèrent le prix odd aux trois autres terminaisons de prix (qui sont soit even soit « autre »). Cette préférence ne dépend pas du profil du répondant, dans le sens où toutes les catégories de population identifiées ont un niveau de préférence similaire pour un prix odd (40%). Les répondants classés comme « Parvenus » montrent, néanmoins, en moyenne, une préférence pour le prix le plus élevé possible (20% contre moins de 10% pour l'ensemble de l'échantillon), mais préfèrent dans leur ensemble le prix odd.

Les résultats de cette thèse offre de nouvelles perspectives par rapport à la littérature existante sur les terminaisons de prix, dans le sens où ils indiquent que les connotations de prix inférieur, qualité inférieure et prestige inférieur, associées aux prix odd et bien établies dans la littérature n'existent pas pour les produits de luxe, ou du moins pour la catégorie des sacs à main de luxe de niveau intermédiaire. Il serait intéressant pour des recherches futures d'étudier si ces résultats s'appliquent pour d'autres catégories de produits de luxe, pour des produits ayant des prix élevés sans pour autant être considérés comme de luxe (e.g., électroménagers) et à d'autres gammes de produits de luxe, comme les produits relativement abordables ou les produits inaccessibles.

Abstract

Drawing from existing literature on price endings and luxury pricing, this thesis highlights the paradox of adopting odd prices (i.e., prices just below a round number) in a luxury context, where, intuitively, prices should mostly be round numbers. Price endings practices are investigated in the product category of luxury women handbags.

In a first empirical analysis, four types of price endings are identified: odd prices, i.e., prices ending up to 10 euros below a round price (in euros or in dollars), even prices, i.e., prices ending with at least two zeros, with no decimal figures, 50-ending prices and “other” prices, i.e., prices ending in -10, -20, -30, -40, -60, -70 and -80. Unit figures are generally not specified and they are set to -0.

In a second part, the thesis identifies determinants of the use of price endings. Odd and “other” prices are mostly used for accessible handbags, which are made of canvas, with a relatively low price and with a prominent logo; even prices are most common among handbags that are made of high-quality or exotic leather, with higher prices and with no logo. Lastly, 50-ending prices are applied mostly to intermediate handbags, made of leather, with a price comprised between 1000 and 2000 euros/dollars, which are usually rather discreet. These ending practices are well-established for observed brands and they are maintained over time, but the same identical product, whose price is increased from season to season, will change price ending with each price increase. This shows that there are no fixed rules in determining price endings.

The third empirical chapter shows the results of two experiments designed to measure customers’ perceptions of different facets of luxury and overall perceived luxury itself. Surprisingly, customers of luxury goods perceived higher prestige, higher quality and higher luxuriousness when exposed to odd and other prices than when they are exposed to even prices. These more favourable perceptions are reflected in preferences, which are measured through a conjoint analysis in the fourth and last empirical part of the document. Interestingly, at an aggregated level, the interviewed sample prefers the odd price to the other three price modalities (that are either even or “other”). This preference is not profile-dependent, in that all identified segments are equally likely to prefer an odd price (40%). Respondents classified as “Parvenus”, however, do show a higher-than-average preference for the highest price available (20% vs. less than 10% of the sample average), but overall still prefer the odd price.

The findings of this thesis therefore challenge previous research on price endings practices, in that they show that well-know low-price, low-quality, low-prestige connotations typical of odd prices in a non-luxury context, might not subsist in a luxury environment, at least for the handbag product category and for an intermediate level of luxury. Further research should study whether the new findings apply also to other luxury product categories, to other non-luxury expensive product categories (e.g., white goods) and to other levels of luxury, such as accessible and inaccessible, which have not been tested yet.

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1. Introduction (Français)

L'objectif de cette thèse est d'analyser les terminaisons de prix (i.e., les chiffres de droite d'un prix) dans le contexte des produits de luxe. J'étudie les différentes terminaisons de prix utilisées pour le segment des sacs à main de luxe, la manière dont elles sont déterminées, la manière dont elles sont perçues par les consommateurs ainsi que les préférences des consommateurs pour une terminaison de prix plutôt qu'une autre. Etudier les terminaisons de prix est une question importante car elles contribuent aux marges réalisées par l'entreprise, mais ont un impact relativement faible sur le niveau du prix contrairement aux chiffres de gauche qui dépendent largement de facteurs tels que le coût (Simmons & Schindler, 2003). De plus, les terminaisons de prix sont associées à des niveaux de qualité différents, et ont également un effet d'image sur les produits auxquels elles sont appliquées.

La littérature en marketing s'est depuis longtemps intéressée à la pratique du odd-pricing, et s'est focalisée en particulier sur les prix en -9 (e.g., €1,99 ou €99) dans l'industrie des Fast-Moving Consumer Goods (FMCG; Harris & Bray, 2007; Schindler & Kirby, 1997), cette technique étant généralement utilisée pour des articles dont le prix est inférieur à 100\$. Il existe un très petit nombre d'exceptions. Baumgartner & Steiner (2007) étudient, par exemple, les préférences pour des prix odd ou des prix even (i.e., prix ronds) dans le cas d'ordinateurs coûtant environ 1200€. Cependant, aucun travail de recherche ne s'est, jusqu'à présent, intéressé à l'utilisation des prix odd pour les produits de luxe. Ce phénomène peut s'expliquer par au moins trois raisons. Tout d'abord, l'accès à des données dans le secteur du luxe est beaucoup plus difficile que pour les biens de grande consommation, pour lesquels des données de panel sur les prix, les caractéristiques des produits et les volumes de vente sont facilement disponibles. Deuxièmement, dans le cas de prix relativement élevés, l'utilisation de cette pratique peut sembler paradoxale puisqu'il y a une baisse dans la différence en pourcentage entre le prix odd et le prix even le plus proche (e.g., entre 1999 € et 2000€, il y a une différence de 0.05% alors qu'entre 1,99€ et 2€, la différence est de 0.5%) (Schindler & Kirby, 1997).

La troisième raison, qui est également la plus importante, tient aux effets provoqués par cette technique de pricing documentés dans la littérature et qui semblent en opposition avec les exigences de l'industrie du luxe. D'un côté, la recherche existante montre que les prix en 9 ont une signification symbolique pour les consommateurs qui les interprètent souvent comme

un signal de prix faible ou de « bonne affaire » (Bizer & Petty, 2002; Schindler, 1991, 2006; Schindler & Kibarian, 1996) ainsi que comme un signal de qualité inférieure (Stiving, 2000). De l'autre, les consommateurs de produits de luxe acceptent de dépenser plus car le prix est un signe « d'estime de soi qui confirme le succès et le statut » (Allsopp, 2005; Bagwell & Bernheim, 1996), et les consommateurs jugent, en général, les articles peu onéreux comme étant de qualité inférieure (Gerstner 1985; Huber and McCann; 1982; Rao and Monroe 1989). Le *prestige pricing* lui-même se définit comme le fait de « choisir un prix relativement élevé pour suggérer une qualité supérieure ou un statut plus élevé » (McCarthy & Perreault, 1987, 506). Pour les marques qui veulent suivre les anti-lois du marketing de luxe, comme dans le cas de la « Luxury Strategy », Bastien & Kapferer (2012) recommandent « d'augmenter les prix des produits au cours du temps pour augmenter la demande ».

De ce point de vue, l'utilisation de prix odd dans le contexte des produits de luxe ne semble a priori pas appropriée. Cependant, et de manière surprenante, un rapide coup d'œil sur les sites internet des principales marques de luxe montre que le odd pricing est également une technique répandue pour les produits de luxe alors que les prix even sont moins courants qu'attendu (e.g., sur le site www.gucci.fr, on peut voir le nombre et le pourcentage de sacs à main dont le prix finit en -90 (54%) ou par -00 (13% seulement), en Juillet 2017). L'Annexe 1 (Appendix 1) donne également l'exemple d'un Jaguar F-type ou de chambres d'hôtels au Four Seasons de Las Vegas afin d'illustrer que certains produits de luxe, non reliés au domaine de la mode, ont également des prix odd. Ces différents exemples motivent une analyse plus détaillée des pratiques des terminaisons de prix dans le domaine du luxe.

Pour plusieurs raisons, j'ai choisi de m'intéresser aux prix des sacs à main de luxe. La première tient à l'importance de ce segment dans l'industrie du luxe. Comme souligné par d'autres auteurs travaillant également sur les sacs à main, ces derniers sont aujourd'hui la locomotive de l'industrie du luxe. Bain & Company (Bain&Company's Luxury Goods Worldwide Market Study, Fall-Winter 2016) reporte que l'industrie du luxe se compose, dans son ensemble, de 10 segments et qu'elle représente 1.08 trillions d'euros, parmi lesquels la catégorie des biens personnels de luxe (« la crème de la crème » de l'industrie du luxe et élément central de Bain Luxury Study) qui représente une part constante (en taux de changes constants) avec des ventes totales estimées à 249 milliards d'euros (251 en 2015). Les sacs à main à eux seuls représentent 44 milliards et constituent le plus gros segmente des biens personnels de luxe (17.6% des ventes au détail). De plus, les sacs à main de luxe sont, en

raison de leur prix, davantage considérés comme des produits de luxe que les parfums des marques de luxe. En effet, si l'on s'intéresse, par exemple, à la collection Printemps-Eté 2017 de Gucci, le prix moyen d'un sac à main est de 2214,84€ (le moins cher et le plus cher valant respectivement 690€ et 29 000€) alors que le parfum Gucci le plus cher coûte 184€ pour 100ml. Même si 184€ peut sembler une somme d'argent importante pour une bouteille de parfum, cela reste, en valeur absolue, beaucoup plus abordable que le moins cher des sacs à main. Etudier les terminaisons de prix pour des parfums de luxe aurait donc une contribution potentielle plus limitée au regard de la littérature qui a examiné des prix allant jusqu'à 100\$/€. Deuxièmement, les sacs à main sont la catégorie avec le plus grand nombre de produits de luxe proposés par les marques de luxe : étant donné que, dans le cas des sacs à main, il n'y a pas de problèmes de taille comme c'est le cas pour les chaussures ou le prêt-à-porter, les marques offrent généralement un large éventail d'options et collecter des prix de sacs à main me permet d'avoir un grand nombre d'observations, ce qui est un élément important à des fins d'analyses statistiques. Enfin, les sacs à main sont une catégorie intéressante à étudier car ils offrent une large gamme de prix, allant d'articles relativement accessibles jusqu'à des produits extrêmement onéreux, ce qui permet d'observer comment les pratiques de pricing varient entre différentes catégories de prix. En ce sens, cette recherche a pour objectif d'étudier les terminaisons de prix uniquement pour des sacs à main de luxe et ne prétend donc pas donner une description exhaustive de l'ensemble de l'industrie du luxe.

Les différentes questions abordées dans cette thèse sont classées en quatre parties, auxquelles je consacre pour chacune un chapitre.

Après une revue de littérature détaillée sur les prix odd, les prix even puis sur le luxe dans le chapitre 2, le chapitre 3 est consacré à l'analyse des différentes terminaisons de prix utilisées pour la catégorie des sacs à main de luxe. Les prix odd et even existent-ils dans cette catégorie ? A quoi ressemblent-ils ? Existe-t-il d'autres terminaisons de prix qui n'ont pas encore été étudiées dans la littérature ? Pour répondre à ces questions, j'étudie les terminaisons de prix pour neuf marques généralement considérées comme étant de luxe (Chanel, Coach, Dior, Fendi, Gucci, Lancel, Louis Vuitton, Prada, Yves Saint Laurent), au Printemps 2014. Cette première analyse montre que les prix odd et les prix even sont effectivement utilisés pour les sacs à main de luxe, même s'ils prennent une forme différente de celle que l'on trouverait pour des produits de FMCG. Les prix odd pour les sacs à main de luxe se terminent généralement en -90 ou -95 alors que les prix even se terminent avec au

moins deux zéros (i.e., in -00). Les nombres décimaux ne sont généralement pas utilisés mais d'autres prix entiers en -10, -20, -30, -40 etc. sont au contraire très répandus. Les résultats montrent également que certaines marques de luxe utilisent plus de prix odd, d'autres plus de prix even et d'autres encore n'utilisent aucun des deux (i.e., elles utilisent d'autres terminaisons de prix à la place).

Dans le chapitre 4, j'examine les déterminants de l'utilisation de différentes terminaisons de prix : Quels sont les critères adoptés par les pricing managers pour décider si le prix d'un produit devrait être odd, even ou autre ? J'utilise pour cela l'échantillon mentionné précédemment ainsi qu'un second échantillon constitué de prix pour deux des neuf marques observés sur une période de deux ans (i.e., Louis Vuitton et Gucci sur 4 saisons de Décembre 2013 à Décembre 2015). J'utilise des régressions logistiques afin d'identifier les variables ayant un effet significatif sur la probabilité d'observer un prix odd, un prix even, ou un prix « autre » : la qualité de la matière, le caractère ostentatoire de la marque et le niveau de prix sont des déterminants importants de la probabilité d'observer un prix en -90, en -50, en -00, ou « autre ». Les produits de luxe plus onéreux, plus discrets en termes de logo et de meilleure qualité, tels que des sacs à main en python ou en crocodile, sont moins susceptibles d'avoir un prix odd ou « autre » et ont, au contraire, souvent un prix even, en comparaison avec des produits de luxe moins onéreux, plus voyants et de qualité inférieure (tels que des sacs à main en cuir synthétique, en toile et/ou montrant un monogramme) qui ont quant à eux plutôt des prix terminant en -10, -20,...,-90. En pratique, cela indique que les managers sont plus enclins à fixer des prix odd ou « autre » pour des produits de luxe plus accessibles, ce qui est cohérent avec ce que l'on observe généralement pour des produits qui ne sont pas de luxe. Ils sont, au contraire, plus susceptibles de fixer des prix even pour des produits de luxe inaccessibles. Les prix en -50 sont plus souvent utilisés pour des sacs de milieu de gamme (i.e., produits de luxe intermédiaires). Cependant, un même produit dont le prix augmente d'une saison à l'autre changera souvent de terminaison. Cela indique qu'il n'y a pas nécessairement de règles fixes concernant le choix des terminaisons de prix.

Dans le chapitre 5, étant donné que les prix odd et even sont souvent utilisés pour les sacs à main de luxe, j'étudie l'impact des différentes terminaisons de prix sur l'image du produit. Comment les consommateurs perçoivent-ils le produit ? Les prix odd ont-ils les mêmes connotations de prix inférieur et de qualité inférieure que lorsqu'ils sont appliqués à des produits de grande consommation ? Si tel est le cas, les prix odd devraient avoir un impact

négatif sur le caractère luxueux perçu par les clients. Afin de mesurer les perceptions des consommateurs, j'ai réalisé deux expérimentations au cours desquelles j'expose les sujets à des prix odd, even, ou « autre » appliqués à des sacs à main de luxe, et je mesure ensuite leurs perceptions de différentes facettes du luxe. A un niveau agrégé, les prix odd ne semblent pas avoir d'effet négatif sur la qualité perçue, le caractère onéreux ou le prestige, mais ils ont, au contraire, d'effets positifs sur ces différentes facettes du luxe.

Enfin, le chapitre 6 explore les préférences des consommateurs pour des prix odd ou even lorsqu'ils sont appliqués à des sacs des marques Gucci, Prada et Yves Saint Laurent. D'un point de vue managérial, étudier les perceptions liées à différentes terminaisons de prix n'est intéressant que si elles se traduisent par des préférences puis des intentions d'achat plus grandes. Pour tester les préférences des consommateurs en termes de terminaisons de prix, j'ai réalisé une analyse conjointe avec l'IFOP (Institut Français d'Opinion Publique) au cours de laquelle je mesure les traits de personnalité des répondants concernant le consommation de produits de luxe afin de comprendre quels types de consommateurs de produits de luxe sont les plus susceptibles d'apprécier les prix odd, even ou « autre ». Je trouve qu'à un niveau agrégé, il y a une préférence pour le prix odd par rapport au prix even suivant et aucune préférence entre le prix odd et un prix 35€ moins cher, mais que ces préférences ne dépendent pas des types de consommateurs : tous les consommateurs (Patriciens, Snobs, « Low Profile » et Parvenus) ont une préférence similaire pour un prix odd.

Cette thèse me permet d'avoir un certain nombre de contributions.

Une première contribution, qui est à la fois empirique et conceptuelle, est de proposer une définition des prix odd et des prix even dans le contexte du luxe que je définis respectivement comme des prix dont la terminaison est jusqu'à 10 euros ou dollars inférieure à n'importe quelle centaine » et comme « des prix se terminant avec au moins deux zéros et sans aucune décimale ». Ces définitions peuvent être adoptées pour étudier les terminaisons de prix pour d'autres produits ayant un prix relativement élevés (e.g., biens durables comme des voitures, électroménager, etc.). Ma contribution est également d'identifier des terminaisons de prix qui n'ont pas été étudiées dans la littérature telles que les prix en -50 ou autres comme -10, -20, -30 etc.

Deuxièmement, en étudiant les terminaisons de prix appliquées aux produits de luxe, je contribue à la littérature à la fois sur le odd pricing et sur le pricing du luxe qui sont des champs relativement peu explorés.

D'un côté, les déterminants de l'utilisation d'une terminaison de prix que j'identifie (qualité du produit et ostentation du logo) peuvent s'avérer pertinents dans d'autres contextes y compris pour des produits qui ne sont pas de luxe. Je contribue également aux théories existantes sur les effets d'image des terminaisons de prix en montrant que les connotations de prix bas, de qualité inférieure et de faible prestige qui existent pour les produits de FMCG n'existent pas pour les produits de luxe, ou tout du moins pour les sacs à main de luxe de niveau intermédiaire. Cela peut s'expliquer par le fait que -90 ou -95 sont les terminaisons de prix les plus élevées qui soient (étant donné que les unités ne sont pas utilisées dans le luxe, il est impossible d'observer un prix se terminant par -99) ou par le fait qu'en général les prix des sacs à main de luxe sont si élevés que cela annule toute connotation négative qu'un prix odd pourrait avoir. Je contribue enfin à la littérature en confirmant que, dans le contexte des produits de luxe et à un niveau agrégé, les consommateurs manifestent une préférence pour les prix odd, quel que soit leur profil.

De l'autre, je montre que les terminaisons de prix sont également importantes dans le contexte des produits de luxe, et ce même si le sens commun pourrait nous laisser penser que des individus qui dépensent des centaines ou des milliers d'euros sur un accessoire ne sont pas sensibles aux chiffres de droite d'un prix qui, comparés aux chiffres de gauche, ont un impact faible sur la valeur monétaire (Schindler & Wiman, 1989).

Ma troisième contribution est d'ordre méthodologique puisque je suis, à ma connaissance, la première à créer un panel de données sur les prix des produits de luxe qui pourrait être utilisé pour tester d'autres hypothèses dans des recherches futures.

Finalement, j'attire l'attention des entreprises du luxe sur leurs pratiques de pricing. D'après mes observations, les entreprises du luxe imitent actuellement les techniques de pricing utilisées dans d'autres secteurs, en s'attendant probablement à ce que les consommateurs de produits de luxe interprètent les prix odd ou even de façon similaire à ce qui est le cas pour les biens de consommation. Cependant, les consommateurs des produits de luxe ne semblent pas percevoir les prix odd ou even de la même façon que dans d'autres contextes. Les effets en termes d'images pour le produit et la marque sont par conséquent difficiles à prédire. En

particulier, je trouve que les marques de luxe appliquent des prix odd et « autre » à des sacs à main accessibles, des prix even à des sacs inaccessibles et des prix en -50 à des sacs moyennement accessibles. Ceci étant dit, ma recherche montre non seulement que les prix odd et « autre » sont perçus par les consommateurs réguliers de produits de luxe, comme plus prestigieux et luxueux que les prix even mais également, qu'à un niveau agrégé, les individus exposés à des sacs à main de luxe de gamme intermédiaire ont tendance à préférer les prix odd. Mes résultats empiriques indiquent également que les consommateurs, quel que soit leur profil, ont une préférence similaire pour les prix odd : environ 40% de chacun des quatre segments que j'ai identifiés, Snobs, Patriciens, « Low Profile » and Parvenus, préfèrent un prix odd à un prix even. Je suggère donc que les pricing managers devraient utiliser des prix odd pour des articles de niveau intermédiaire ou même des articles inaccessibles, et pas uniquement pour des produits accessibles.

Le reste de la thèse est organisé comme suit (voir le diagramme, page 15). Premièrement, je propose une revue de la littérature sur les prix odd et even ainsi que sur le luxe. Je définis ensuite les prix odd et even en me basant sur les observations que j'ai collectées. Troisièmement, je décris le contexte dans lequel cette recherche a été menée et formule mes questions de recherche, qui seront ensuite analysées dans trois parties différentes : les pratiques managériales, les perceptions des consommateurs et les préférences des consommateurs pour les prix odd et even. Pour chaque partie, je commence par développer un cadre conceptuel et formule des hypothèses, je présente ensuite la méthodologie, les données, puis les résultats et enfin je discute les résultats et leurs limites. Je finis par une discussion et une conclusion générales, ainsi que par les implications managériales.

1. Introduction (English)

The objective of this thesis is to investigate price endings (i.e., the rightmost digits of prices) in a luxury context. I study the kinds of price endings that are used in the luxury women handbag category, how they are determined, how the customer perceives them and what preferences customers have for one price ending or the other. The study of price endings is important, because they contribute to margins, but have a weaker impact on price level than leftmost digits, which are instead constrained by cost factors (Simmons & Schindler, 2003). Moreover, different price endings are associated with diverse levels of quality and have an image effect on the products to which they are applied.

The marketing literature on price endings has long examined the practice of odd pricing, focusing mainly on 9-ending prices, (e.g., €1,99 or €99) in the Fast-Moving Consumer Goods (FMCG; Harris & Bray, 2007; Schindler & Kirby, 1997), with this technique usually being analyzed for items priced less than \$100. There are very few exceptions. Baumgartner & Steiner (2007), for example, study preferences for odd and even prices for notebooks with prices around 1200 euros. However, no research has ever investigated the use of odd pricing applied to luxury goods. This could be due to at least three reasons: first, access to data in this sector is much harder than in the consumer goods sector, where panel data on prices, product characteristics and sales volumes are available; second, when dealing with higher prices, the practice might seem to be a paradox, as there is a decrease in the relative size of the difference between the odd-ending (e.g., -9) and the adjoining 0-ending price (e.g., between €1999 and €2,000 there is only a 0,05% increase while between €1,99 and €2 there is a 0,5% increase) (Schindler & Kirby, 1997).

The third and most important reason is that the effects provoked by this pricing technique, as we know them from the literature, seem to be in contrast with the requirements of the luxury industry. On the one hand, previous research finds that nine-ending prices convey a symbolic meaning for consumers who interpret them as a signal of a low price or good deal (Bizer & Petty, 2002; Schindler, 1991, 2006; Schindler & Kibarian, 1996), but also as a signal of inferior quality (Schindler & Kibarian, 2001). Furthermore, round prices should signal higher quality (Stiving, 2000). On the other hand, consumers of luxury goods accept spending more because price is a “sign of self-worth which authenticates success and status” (Allsopp, 2005; Bagwell & Bernheim, 1996) and consumers in general often judge less expensive items to be

of inferior quality (Gerstner 1985; Huber and McCann; 1982; Rao and Monroe 1989). Prestige pricing itself is defined as “setting a rather high price to suggest high quality or high status” (McCarthy & Perreault, 1987, 506). For those brands that want to follow the anti-laws of luxury marketing, as in the so-called “Luxury Strategy”, Bastien & Kapferer (2012) recommend increasing the price of products over time to increase demand.

From this perspective, the use of odd prices seems inappropriate to a luxury context. However, surprisingly, a quick look at some major luxury brands’ websites reveals that odd pricing is a widespread pricing technique also for luxury goods, while even prices (i.e., prices ending in at least two zeros, -00) are less common than expected (e.g., on www.gucci.fr you can see how many women handbags’ prices end in -90 (54%) instead of -00 (only 13%), as of July 2017). Appendix 1 provides examples of an F-Type Jaguar and of the rooms offered by the Four Season in Las Vegas, to see some non-fashion-related examples of luxury products or services that are odd-priced. This anecdotal evidence motivates a deeper investigation.

There are several reasons why I decided to observe prices for women handbags. The first reason is the relevance of the segment in the luxury industry. As pointed out by other authors in the literature (Han, Nunes, & Drèze, 2010), who have also used handbags as focus of their study, handbags are the engine that drives luxury today. Bain & Company (Bain&Company’s Luxury Goods Worldwide Market Study, Fall-Winter 2016) report that the overall luxury industry comprises 10 segments¹ and accounts for €1.08 trillion², of which the personal luxury goods category—the “core of the core” of luxury and the focus of the Bain Luxury Study—was essentially flat in 2016 (in constant exchange rates), with total sales of €249 billion (251 in 2015). Handbags alone account for €44 billion and are the largest segment of the personal luxury goods (17,6% of retail sales). Moreover, luxury handbags, because of their price, are more easily intended as luxury products than, for example, fragrances by luxury brands. In fact, if we look, for example, at the Gucci Spring-Summer collection 2017, the average price for a handbag is 2214,84€ (the cheapest and the most expensive being 690€ and 29 000€ respectively), while the most expensive fragrance by Gucci is 184€ for 100 ml. Although to some 184 € might seem like a large amount of money to spend on a bottle of perfume, its absolute value is much more accessible than the cheapest luxury handbag

¹ Figures in billions of euros: 1) personal luxury goods (249); 2) luxury cars (438); 3) luxury hospitality (183); 4) fine wines (66); 5) fine food (46); 6) fine art (39); 7) furniture (33); 8) jets (18); 9) yachts (7); 10) cruises (2). Bain&Company’s Luxury Goods Worldwide Market Study, Fall-Winter 2016.

² 1 081 000 000 000 euros

available. Therefore, studying price-ending practices for luxury fragrances would probably add no extra insight compared to the existing literature that investigates prices up to 100\$/€. Secondly, women handbags is normally the most extensive product category luxury brands propose: since handbags do not require sizing, as do shoes or prêt-à-porter, normally brands offer a very wide range of options, so collecting handbags' prices allowed me to have many observations, which is important for statistical analysis purposes. Lastly, handbags are a good category to observe because they cover several price ranges, starting from relatively accessible items to extremely expensive ones, allowing us to observe how pricing practices vary across different prices ranges. In this sense, this research aims at investigating price-endings limitedly to luxury women handbags, and has no pretention to give a full description of the entire luxury industry.

The issues that are investigated in this thesis are classified into four categories, and I dedicate one Chapter to each one of them.

After an extensive literature review on odd and even pricing and on luxury in Chapter 2, Chapter 3 is dedicated to finding out what kind of price endings are used in the luxury women handbags product category. Do odd and even prices exist in this category? What do they look like? Are there other price endings that have not been investigated in the literature? To answer these questions, I observe price endings distributions for nine brands, which are commonly considered "luxury" (Chanel, Coach, Dior, Fendi, Gucci, Lancel, Louis Vuitton, Prada, Yves Saint Laurent), in Spring 2014. This first investigation reveals that odd and even prices are indeed used for luxury women handbags, although they have a different format than the one we would find in a FMCG setting. Odd prices applied to this product category usually end in -90 or -95 (both in euros and in dollars), while even prices end with at least two zeros, i.e., in -00. Decimal figures are not usually adopted, but "other" integer prices in -10, -20, -30, -40, etc. are widespread, instead. The results also show that some luxury brands use more odd prices, other brands use more even prices and others none of the two (i.e., they use "other" price endings, instead).

In Chapter 4, I investigate the determinants of the use of different types of price endings: what are the criteria that pricing managers adopt to decide whether a product's price should be odd, even or "other"? I use the above-mentioned sample and a second one constituted of prices for two of the nine brands observed over two years (i.e., for Louis Vuitton and Gucci over four seasons, from December 2013 to December 2015). I run logistic regressions to identify the

variables that have a significant impact on the probability of a price being odd, even or “other”: the quality of the material, the ostentation of the brand and the price level are significant determinants of the likelihood of prices ending in -90, in -50, in -00 or in “other” endings. Luxury items which are more expensive, more discrete in terms of logo and of better quality, as could be the case for handbags made of python or crocodile leather, have less odd or “other” prices and more even prices compared to luxury products which are less expensive, more conspicuous and of inferior quality (as it is the case for handbags made of synthetic leather or canvas and that show a monogram, for example), which in turn have more prices ending in -10, -20, ..., -90. In practice, this means that managers are more likely to set odd and “other” prices for accessible luxury goods, which is consistent with what we observe in non-luxury contexts, while they are more likely to set even prices for inaccessible luxury goods. Prices ending in -50 are most likely used for handbags that are in the middle of the luxury range (i.e., intermediate luxuries).

In Chapter 5, given that odd and even prices are commonly applied to luxury handbags, I study what impact different price endings have on the product’s image. How do consumers perceive odd and even prices? Do odd prices have the same connotations of low price and low quality that they have when applied to consumer goods? If this were the case, then we should predict a negative impact of odd pricing on perceived luxuriousness. To measure customers’ perceptions, I conduct two experiments where I expose subjects to either odd, even or “other” prices applied to luxury handbags, and then measure the perception of different facets of luxury. Surprisingly, I find that most effects that subsist in the FMCG are not reproduced in this luxury context. At an aggregated level, odd pricing does not seem to have negative effects on perceived quality, expensiveness and prestige, nor does even pricing seem to have a positive effect on these facets. On the contrary, odd prices seem to be perceived by some as more prestigious and more luxurious.

Lastly, Chapter 6 explores customers’ preferences for odd or even prices when applied to luxury handbags from Gucci, Prada and Yves Saint Laurent. From a managerial perspective, it is uninteresting to study price ending perceptions, if these do not translate into preferences and then higher purchase intentions. To test price ending preferences, I conduct a conjoint analysis in collaboration with IFOP (Institut Français d’Opinion Publique) and I measure respondents’ personal traits related to luxury consumption to understand who, among the several types of consumers of luxury goods, is more likely to appreciate odd, even or “other”

prices. I discover that at an aggregated level, the tested odd price (i.e., 1595€) is preferred to a slightly higher even price (i.e., 1600€) and just as appreciated as a 35-euro lower price (i.e., 1560€), but that this preference is not segment-dependent: all kinds of consumers of luxury goods (Patricians, Snobs, Low Profile and Parvenus) are equally likely to prefer the odd price.

With this thesis I make manifold contributions.

A first contribution, which is both empirical and conceptual, is that, based on sample observation, I propose a definition of odd prices in a luxury context as “prices whose ending is up to 10 euros or dollars below any given hundred” and of even prices as “prices ending with at least two zeros, with no decimal figures”. These definitions could also be adopted when investigating price endings for other products whose price is relatively high (e.g., for durable products such as cars, white goods, etc.). Also, I contribute to identifying price endings that have not been discussed before in the literature, such as endings in -50 and in “other” figures, such as -10, -20, -30, etc.

Secondly, by studying price endings applied to a luxury product category, I contribute to the literature on both odd pricing and on luxury pricing, which are both extremely scarce fields.

On the one hand, the determinants of the use of price endings that I identify (product quality and logo prominence) might be relevant in other, non-luxury, contexts. Moreover, I contribute to the existing theories on price endings’ image effects, by finding that low-price, low-quality and low-prestige connotations exist in a FMCG context, but they do not subsist in a luxury context, or at least, not for the women handbag category. On the contrary, I find that odd prices’ image effects might be reversed in this context, i.e., odd prices are likely to be interpreted as more prestigious and luxurious than other prices. This could either be explained by the fact that -90 and -95 are the highest price endings possible (given that unit figures are not used in luxury, so we should never observe a price ending in -99) or to the fact that in general, handbags’ prices are so high that they nullify any negative connotations odd endings might otherwise have. Also, I contribute by confirming that also in this luxury context, at an aggregated level, customers manifest a higher preference for odd prices, regardless of their profile.

On the other hand, I show that price endings are important also in a luxury context and that customers do pay attention to them, although common sense might have led us to believe that individuals who spend hundreds or thousands of euros on an accessory might not be

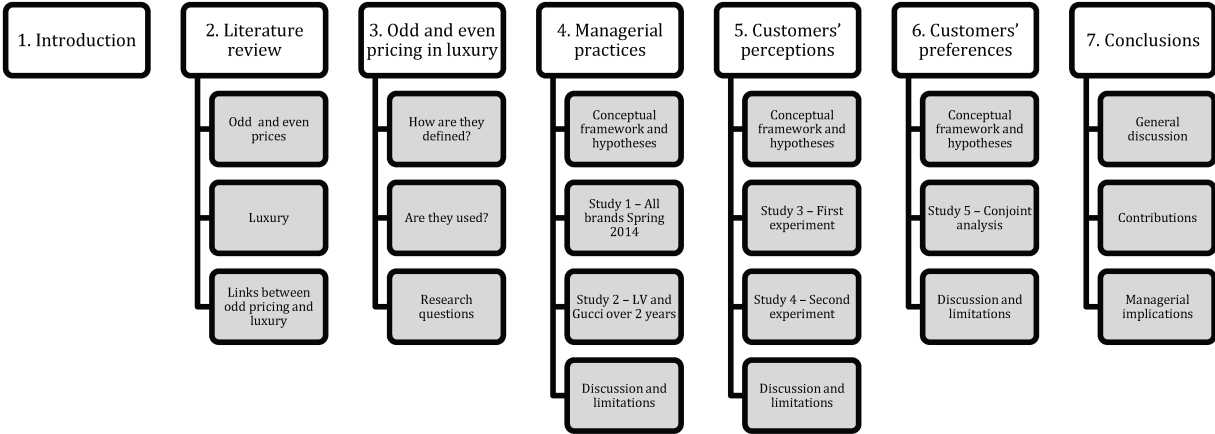
concerned about the rightmost digits of a price, because, compared to the leftmost digits, they carry much less monetary value (Schindler & Wiman, 1989).

Thirdly, I make a contribution in terms of methodology, as I am, to the best of my knowledge, the first to create a panel of data on luxury products' prices, which could potentially be used to test other hypotheses in further research.

Last but not least, I draw luxury firms' attention to their pricing practices: from what I observe, luxury firms are currently imitating pricing policies from non-luxury contexts, possibly expecting consumers of luxury goods to interpret odd and even prices according to FMCG connotations. However, luxury goods' consumers do not seem to perceive odd and even prices as expected, so effects on products' and brands' image might be unpredictable. In particular, I find that the observed luxury brands apply odd and "other" prices to more accessible handbags, even prices to rather inaccessible handbags and 50-ending prices to intermediate luxury bags. However, my research shows that, not only are odd and "other" prices often perceived as more prestigious and luxurious than even prices by assiduous consumers of luxury, but that, at an aggregated level, individuals who are exposed to a set of intermediate luxury handbags are more likely to prefer an odd price among other price endings. Also, according to empirical findings, all customers, regardless of their profile, are equally likely to prefer an odd price: approximately 40% of each of the four segments that I have identified, i.e., Snob, Patricians, Low profile and Parvenus, prefer an odd price to other non-odd prices. I would therefore suggest that pricing managers set some odd prices to selected items also for intermediate and more inaccessible products, and not just for accessible ones.

The remainder of this thesis is organized as follows (please refer to the diagram below). Firstly, I will review the literature on odd and even pricing and on luxury. Then, I will define odd and even prices based on the observation of my samples. Thirdly, I will explain the context of this research and formulate my research questions, which will be later addressed in three main parts: managerial practices; customers' perceptions and customers' preferences for odd and even prices. For each part, I will first develop a conceptual framework and formulate the resulting hypotheses, then present the methodology, data analysis, results, discussion and limitations. I will conclude with a general discussion, conclusions and managerial implications.

Progress – Structure of the document



2. Literature review

2.1. Literature review on Odd and Even pricing

Rumor has it that odd prices were first introduced to prevent employees from stealing money when cashing a transaction: in general, the cash register made it easier for store owners to prevent employee theft since it kept a record of each transaction. Nonetheless, the employee could still pocket the money and not ring up the sale at all. With odd prices, however, the employee had to return some change to the customer, which meant she would have to open the cash register and therefore ring up the sale (Huston & Kamdar, 1996; Schindler & Kirby, 1997). By the early 2000's odd prices were so common that one fringe political party in the UK reportedly promised to introduce a 99-penny coin if elected (Bray & Harris, 2006). But what is an odd price?

2.1.1. What is odd pricing?

There has never been a general agreement on what exactly “odd pricing” means. I will present here the several definitions that have been provided in the literature. I will explain later what I consider to be an odd price in the context of luxury goods and why I came up with the definition I provide.

Ginzberg (1936), who gives the first report ever on a field experiment designed to assess the effectiveness of odd prices, observes that in the USA at the beginning of the 20th century there is a tradition for “customary prices”, as he calls them, which he defines as prices “quoted one or two cents below the decimal unit - [such as] \$.49, \$.79, \$.98, \$1.49, \$1.98”. A few decades later, Georgoff (1972), writes that “generally, odd prices are said to include quotations in the immediate price ranges under an even dollar (whether ending in 88, 95, 97 or 99 cents), while even prices are those ending in round dollar amounts”.

Schindler, the researcher who, by far, has written the most on odd pricing, defines it as “the practice of expressing a price so that its ending (i.e., its rightmost digits) causes it to fall just below a round number” (Schindler & Warren, 1988). Price endings can be manipulated independently of the level of the price, so that if we consider, for example, \$29.95 vs. \$30.00, we are dealing with two prices that are substantially at the same price level, but have different price endings (Schindler, 1991). Twenty years later, Schindler et al. (2011) enrich these first attempts to define odd pricing by saying that just-below pricing (another name for the same

practice) is characterized by high rightmost digits and by leftmost digits that are lower than they would be if the adjacent round price had been used.

Gendall et al. (1998) propose a list of three types of prices that one could consider odd:

- 1) prices ending in odd numbers (1,3,5,7,9), as one might intuitively assume from the name itself;
- 2) prices ending in any number other than 0;
- 3) prices ending just below a zero (e.g., \$4.99 or \$19.95).

The latter definition of “odd price” is by far the most commonly used, but, unfortunately, also the least precise.

Bizer & Schindler (2005) point out how calling prices odd or even might be misleading as one might expect an odd price to be an odd number and an even price to be an even number, when really, both denominations imply much more specific meanings. Baumgartner & Steiner (2007) do not provide a precise definition of what an odd price is but they observe that retailers have the tendency to set prices ending in -9. While this is not the only format we can observe in the marketplace for this pricing technique, 9-ending prices can surely be considered as odd prices. Given this strong dominance of prices ending in -9, compared to any other odd digit and also compared to even prices ending in 0, the authors estimate that one could concentrate on the investigation of the supposed threshold effect between 9-ending prices and the adjacent higher even prices only, ignoring other prices that, according to some of the above-cited definitions might be considered odd, but that are underrepresented in the marketplace.

Table 1 - Classification of price endings developed by Legohérel et al. (2013)

Price formats		Examples	
9-ending prices	Round amounts ending in 9	\$9; €19	
	Prices with decimal figures, with only one 9 as the single rightmost digit	\$1.19; €3.29	
	Prices ending in .99	\$1.99	
Other just-below prices	Prices ending in 5	\$1.95	
	Other formats with decimal figures	\$1.92; €1.98	
	Other formats showing a 9 somewhere in the price, which could arguably be considered also as round prices	\$190; €595	
Other prices	Even or round prices	Ending in 0	\$50
		Other ending	€ 52
	Other formats		\$1.1; €10.37

Instead of trying to define the concept, Legohérel et al. (2013), prefer to classify different types of odd endings. Table 1 reports this classification and shows that the reason why odd prices are so hard to define is that, in fact, there are several levels at which a price can be considered odd or just-below a round or even price: a price ending in -90 might be considered even as it ends in -0, but it could also be considered odd, because its second rightmost digit is a 9. \$190, for example, can be considered even because it ends in -0, but also odd or just below \$200.

There is a reason for this ambiguity, as it is explained by Simmons & Schindler (2003): when a price is expressed in hundreds or thousands of units of a given currency, either because it is a high price (e.g., €1590) or because the currency has a low value (e.g., ¥ 9200), then the single rightmost digit will nearly always be 0. In this case, we can look at the first salient rightmost digit different from 0 (for example, 9 in the case of €1590 and 2 in the case of ¥9200), in order to decide whether the price can be considered odd. When dealing with luxury goods this is the case that applies: since most prices are expressed in thousands of euros or dollars, the vast majority will end in 0; it is therefore necessary to look at the first salient rightmost digit different from 0 to determine whether we are dealing with an odd price or not.

2.1.2. Previous surveys of odd prices in FMCG – How widespread are they?

The definitions provided in the literature leave space for interpretation of what can be considered an odd price: how do I define the “immediate price ranges under an even dollar” (Georgoff, 1972)? How much is “just below” a round number (Schindler & Warren, 1988)? How many digits do you consider to be the rightmost? Since a singular definition of the term “odd price” does not exist, it seems reasonable to adopt Baumgartner & Steiner’s approach (2007) and start from an observation of the marketplace and then concentrate on those prices that are most often observed and that can be defined odd.

It would seem reasonable to assume that each of the 10 digits occur approximately equally in retail pricing as a price ending, i.e., if all price endings were determined randomly, they would all have the same chance to occur, then we would observe each one of them in 10% of the observations. In reality, the 10 digits are far from being equally distributed.

As I show in Table 2, where I summarize, to the best of my knowledge, all surveys of price endings in previous literature, in all observed samples, 9-ending prices occur more often than in just 10% of cases. Legohérel et al. (2013) in their own review of odd pricing literature state

that 9-endings are more typical of products that are loss leaders because of their promotional connotation, but, really, this practice is common in all sectors, at all price levels. Its use is however more common in some countries than others (for example, in Asia 9-ending prices are not common, 8 being observed more often because it is associated with prosperity and good luck). More precisely, in Table 2, we can observe that the use of 9 as rightmost digits varies according to the sample we are observing, but we can notice that in certain cases as much as 68% of prices end in -9 in a catalog context (Anderson & Simester, 2003) and 63,7% in a traditional retailing context (Schindler, 2001).

As stated by Legohérel et al. (2013), managers either implicitly or explicitly have to determine right-most digits: unless they adopt a simple cost-plus-markup approach without fine tuning price endings, they will have to make an explicit decision on the price endings of all prices. The intensity of 9-ending pricing practice suggests that sellers believe that adopting 9-ending prices will be somehow beneficial to their business, either because they observed that this has a positive effect on sales or because it is an unquestioned pricing tradition. As Gabor and Granger (1979) suggest, in certain product categories, just-below pricing is so widespread, that it could be seen as unusual or uncommon to use prices that are not odd, which could result in a “resistance” from the customer. This would be coherent with the Adaptation Level theory (Helson, 1964 cited in Kinard et al., 2013), according to which an individual’s reference point for subjective judgments depends on the individual’s prior exposure. In a pricing context, the adaptation level is a function of the range and dispersion of price stimuli a consumer has been exposed to. Therefore, if a consumer has only been exposed to prices ending in -5 or -9, then they will expect prices to end in -5 or -9 and tend to consider them as “correct”.

Several authors (Kreul, 1982; Macé, 2012; Naipaul & Parsa, 2001; Schindler, 2006; Schindler & Kirby, 1997) point out that in practice what we observe is that most prices either end in -0, in -5 or in -9, which implies that most “just below” prices would end in -9. This explains why in the literature authors have preferred to investigate this specific type of odd pricing, also allowing them to deal with a more specific concept than “prices just-below a round number” (e.g., the articles by Anderson & Simester, 2003; Bray & Harris, 2006; Legohérel et al., 2013; Schindler & Kibarian, 1993).

Table 2 - Reported surveys of price endings in previous literature

AUTHOR(S)	YEAR	DATA / SAMPLE	HOW COMMON ARE DIFFERENT PRICE ENDINGS?
Anderson & Simester	2003	Two different US mail-order catalog titles owned by the same company, called for anonymity reasons Grace and Sandy	Over 52% of Grace's prices and 68% of Sandy's have \$9 endings.
Huston & Kamdar	1996	27 women's clothing catalogues (US).	45,6% of prices end in 9. The use of 9 endings is less common when the targeted customer is a professional one.
Kreul	1982	242 restaurant menus, 21 US metropolitan areas.	For meals priced at or below 6.99 dollars, 9 was the major terminal digit (58% of observed prices); then 5 was the second most observed digit (35%) then 0 (6%). For meals priced from 7 to 10,99 dollars then 5 was the most popular "terminal" digit (71%), 0 (15%) and 9 (11%).
Macé	2012	Weekly, store-level scanner data from the Dominick's Finer Food grocery chain database (Chicago area), pertaining to ten food and nonfood product categories across 83 stores for 399 weeks (1989–1994).	The distribution confirms that the 9-ending pricing practice is intense (on average, 53.6% of prices end with the digit 9). The digit 5 is the second most common right-hand digit, and then the other digits occur almost equally. The 9-ending pricing practice is more widespread in low-price zone stores, in which 9-ending prices are more often used without being associated with a promotion.
Naipul & Parsa	2001	231 menus from restaurants in a major mldwestern U S. city over a period of eight weeks in 1999.	Fine-dining restaurants (by them defined as the restaurants whose starters are priced above \$10) tend to use 0 and 5 as the rightmost digits for their menu prices and less frequently 9. 9 becomes by far the most used (2/3) digit when excluding Asiatic restaurants (where 8 is preferred), and 0 now only represents 13% of prices.
Schindler	2006	Large circulation newspapers in the US, 1 for each state.	Sample 1: 21% of 1258 prices end in -99; 15.6% end in -00; 13.8% in -95. Sample 2: of 1034 prices 42.9% end in -99; 10.5% in -95 and 6.9% in -00. -99 endings are most often used with low -price appeal.
Schindler	2001	Survey of 120 items' prices in 10 different stores so to have 1200 observed prices (10 observations per item) at a variety of stores in a major U.S. metropolitan area, beginning of 1997.	99 ending is by far the most commonly occurring two-digit price ending (56,8% of prices). 63,7% of prices end in 9 (but not necessarily in 99). 00 prices were only 3,3%.
Schindler & Kirby	1997	1415 prices were collected from 43 Sunday newspapers (US metropolitan areas). Only one advertised price chosen randomly was taken from those ads with more than one price. Prices ranged from \$0,34 to \$3 900 000.	0, 5 and 9 were greatly overrepresented rightmost digits. 27% of prices end in 0, 18,5% in 5 and 30,7% in 9. 1 endings are indeed underrepresented as rightmost digit (0,9% of observed price vs 10% expected if all digits had equal chances to be represented as a rightmost digit). Use of 9 endings does decrease and there is an increase in the use of 0 as price increases. Almost all prices longer than five digits end in 0.
Simmons & Schindler	2003	Sample of 499 prices, in 3 communities in China on different price levels.	In all three communities: 5, 8 and 9 occurred significantly more often than 10% (therefore more than chance would allow). 1 and 4 occurred significantly less than 10%.
Stiving	2000	Retailers such as Neiman-Marcus, Nordstrom, Macy's (classy retailers) and Wal Mart, Kmart, Target (Not classy image).	Neiman-Marcus, Nordstrom and Macy's were among the most likely to use prices that end in the digit 0 and avoid the use of the digit 9. Retailers that usually are not regarded as having a classy image (WalMart, Kmart and Target) are among the least likely to use round prices.
Stiving & Winer	1997	Scanner panel data sets for the products tuna and yogurt: 24,770 prices in the data set; covering 123 weeks in three stores for 1702 households (US)	50.5 percent ended in the digit 9 and none ended in 0, leaving 12,260 prices ending in one of the other digits (1-8).

2.1.3. Do consumers prefer odd or even prices?

In the next sections I will overview all the reasons why retailers and pricing managers might have come to believe that setting 9-ending prices might be beneficial to their revenues: I will provide an overview of odd pricing effects on customers' preferences, then I will report effects that have been observed on real sales and then the most common effects ascribed to 9-ending pricing and to odd pricing in general, which might be the underlying mechanisms resulting in a change in sales.

Several articles have focused on the preference an odd price might induce for a product, rather than observing real effects on sales.

For example, Manning & Sprott (2009) observe that when the subjects in their first experiment were asked to choose between a product priced at \$2 and another at \$2,99, only 55% of participants preferred the lower priced option. But when they were asked to make a choice between a product at \$1,99 and another one at \$3,00, 81% of participants preferred the lower priced option. This might be due to a left-digit effect (please refer to sub-section 2.1.5.3.1 about the left-digit effect on page 38). Gendall et al. (1998) conducted a conjoint analysis with 3 product categories, for each of which three brands with 5 price endings were presented (two odd prices at -95 and -99, 1 even price and 2 filler items) in 18 choice sets per category. They observe that utility is higher than expected at both odd prices for all three product categories and they therefore conclude that odd prices do generate greater than expected preference for products carrying them.

Baumgartner & Steiner (2007) also conducted a conjoint analysis with 5 price endings (similar to those chosen by Gendall et al.; 1998) and 3 brand names for two product categories (i.e., chocolate and personal computers). They find that consumers are heterogeneous in their preferences for odd or even prices: consumers with a clear brand preference are more likely than consumers without a clear brand preference to prefer 9-ending prices. Also, respondents who had less time to make the choice prefer odd prices: the greater the time pressure the more likely they are to prefer odd prices. Schindler & Warren (1988) find that subjects who participated to their menu experiment are more likely to choose odd-priced items (ending in -95) than even-priced items, more than price elasticity would justify. Unlike Baumgartner & Steiner (2007), however, they find that this preference for odd prices is not enhanced by greater time pressure.

Lastly, Liang & Kanetkar (2006) conducted a discrete choice experiment where respondents had to make 20 choices for each of two product categories (i.e., tomato soup and backpacks). Subjects had to indicate their choices for one of the four alternative products, with an option of not purchasing anything. Tomato soup prices were varied from 40 cents to 99 cents (every potential price ending was included) and backpack prices varied from \$30 to \$59 (no pennies). The results show that when prices are lower (i.e., for the tomato soup) the effect of rightmost digits is small. When prices are higher (i.e., for the backpack), the effect of rightmost digits is substantial. Moreover, 0-endings have positive effects on both product categories' choices. However, the different results could also be explained by product category rather than price level as the authors suggest.

2.1.3.1. Preference for even prices

While most of the literature focuses on consumers' preference for odd prices, Lynn et al. (2013) focus their attention on consumers' preference for even prices. There are several reasons why consumers might prefer even prices: among others, they might have a dislike for small change or a desire to avoid complicated mathematical calculations (Lynn et al., 2013). Lynn et al. (2013) therefore conduct 3 studies in which consumers are asked to determine the final amount they will pay (i.e., pay as you want (PAYW) for the purchase of a videogame, tip to add to the bill in a dining context and DIY gasoline tank up). They find that in all three situations consumers engage in some sort of cognitive effort to come up with a round total amount to pay. In the PAYW for the videogame, they observe a greater than chance probability that consumers will choose prices having 0 or 5 at the unit dollar digit, and these digits are most likely followed by 00 as cents digits.

When observing tips consumers leave to their waiters, Lynn et al. (2013) find that 23% of all bills involved an unrounded tip, so that the resulting bill would be a round amount. Calculating non-round tips that result in round amounts when added to bills requires mental effort so this finding indicates that consumers' preference for round prices is sometimes stronger than a preference for easy processing. 73% of observed consumers chose however round whole amounts ending in -00, so in one way or the other the vast majority of consumers seem to prefer round amounts.

Finally, when observing the amounts paid to fill up their tanks, Lynn et al. (2013) find that 56% of sales were a round whole dollar amount ending in .00, while less than 1% of

purchases were a round gallon of gasoline (it might be more intuitive to buy gasoline by the gallon than by the dollar). Stopping the pump at a round price requires vigilance and rapid response so consumers must really want to spend a round dollar amount. Finally, customers chose a round whole dollar amount significantly more often when paying in cash than by credit card. This could show a dislike for having small change.

Consumers might therefore prefer even prices when they can determine the amount they will pay for themselves and retailers might also prefer this kind of prices because they help prevent the need to give change, thus increasing transaction speed and reducing in-store queues (Stiving & Winer, 1997). However, the other studies we have seen so far, show that at least some consumers prefer odd prices in traditional settings, where their role towards price is more passive, i.e., they must accept it or reject it but they do not have to determine it.

Table 3 – Summary of studies on consumers’ preferences for odd or even prices

Author(s) and year	Methodology	Results
Baumgartner & Steiner (2007)	Choice-based conjoint analysis	Consumers with a clear brand preference prefer odd prices.
Manning & Sprott (2009)	Experiment	\$2 has 55% preference over \$2,99 but \$1,99 has 81% preference over \$3.
Gendall et al. (1998)	Choice-based conjoint analysis	Higher utility for both modalities with odd prices (prices ending in -95 and in -99).
Baumgartner & Steiner (2007); Schindler & Warren (1988)	Choice-based conjoint analysis and Choice from menu (experiment)	Time pressure might enhance preference for odd prices (the two authors diverge in their conclusions).
Liang & Kanetkar (2006)	Discreet choice experiment	Rightmost digits have a substantial effect only for higher prices (although this might be explained by product category more than by price levels).
Lynn et al. (2013)	Pay as you want; tipping; refilling for gas	Consumers prefer even prices when they have to determine the total amount they have to pay for themselves, despite the cognitive effort.

In general, it therefore seems that consumers do prefer odd prices when they are “price takers”, and more specifically, when they have a brand preference, when they are dealing with higher prices up to \$100 and this preference is possibly enhanced by time pressure. Consumers seem instead to prefer even prices when they are “price setters”.

2.1.4. Do odd prices have an impact on sales?

Studying price endings is an important issue because, unlike leftmost digits which might be constrained by costs and required profit margins, they are less constrained by these factors, they have a smaller impact on demand, but can still greatly impact profitability (Simmons & Schindler, 2003). Although odd pricing is a very widespread practice, there is little tangible evidence that it is effective. Some studies report inconclusive results, some positive, others negative effects that might have been caused by odd pricing. Although, in general, it is assumed that odd pricing will create a greater than expected demand, i.e., it will produce a “kink in demand” as shown in Figure 1 (Gendall, Holdershaw, & Garland, 1997), when looking at previous research, we are not able to definitely say whether odd pricing is effective in increasing the sales of the items it is applied to, be it by volume or by value. Please refer to Table 4 for a summary of previous studies by Macé (2012).

Table 4 - Summary of previous studies as reported by Macé (2012); Unless indicated otherwise, the effects that are described in the right column are due to use of odd prices.

Authors	Type of data	Effect of using odd prices
Anderson and Simester (2003)	Experiment	Increase in demand of approximately 35%.
Bray and Harris (2006)	Store-based experiment	Odd prices are less effective than round price, with trial sales, in nine of ten products. Significant, positive impact of round prices on the percentage of buyers.
Kalyanam and Shively (1998)	Store panel data	Sales increase between 12% and 76%.
Schindler and Kibarian (1996)	Experiment	+8% sales increase.
Stiving and Winer (1997)	Consumer panel data	Positive effect of nine-endings on brand choice for yogurt data, negative effect for tuna sales Sales increase between 12% and 76%.
Blattberg and Wisniewski (1988)	Store panel data	Sales increase by 21% on average.
Ngobo et al. (2010)	Consumer panel data	Significant, positive impact on the percentage of buyers.

The studies reported in Table 4 show that in general we can confidently assume that odd prices will have a positive impact on sales. Only Bray & Harris (2006) find conflicting results, but possibly due to quality image effects associated with even prices.

Figure 1 - Kinked demand as represented by Gendall, Holdershaw, & Garland (1997) on the left and by Stiving (2000) on the right

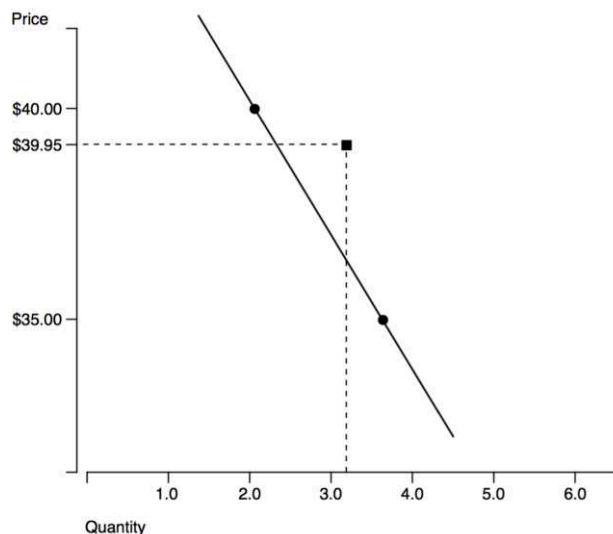
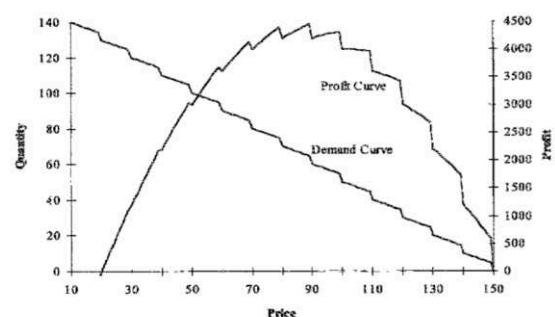


Figure 1 Kinked Demand and Profit Curves



Guéguen, Jacob, Legohérel, & NGobo (2009) report that if only one item out of an entire menu has a 9-ending price, this item will benefit from an increase in sales of nearly 9%, whilst, if all items have prices ending in -9, then no overall increase in sales is observed. On the contrary, Schindler & Kibarian, (1996) find that a version of a direct mail retailer of women's clothing catalogue, where *all* prices end in -99, generate 8% more sales overall than the same catalogue, where all prices end in the higher adjacent round price ending in -00. This effect occurs both because of a greater number of purchasers, although not significantly greater, and because of a larger amount spent on the average order. The latter effect is significant. More specifically, the 99-ending version generates more sales than the -00 version for items priced between 50 and 100 dollars. The version of the catalogue where all prices end in -88 does not lead to more purchases (i.e., as in number of purchasers), but the data provide limited support for the hypotheses that an 88-ending catalogue will also result in purchasers spending larger amounts than those that are spent in the -00 version. However, this could possibly be explained by the fact that the items are all 12 cents cheaper, more than it can be explained by a just-below price effect.

An increase in 8% is substantial, especially when it comes at the cost of 1 cent per unit, and it is most likely explained by an odd pricing effect, which Schindler and Warren (1988) define as “a greater than expected price elasticity around prices which are just below a round number”, more than it can be explained by an exceptional price elasticity. Indeed, if the market responded by 8% sales increase for each 0,03% price decrease, then the price elasticity would be of -267, which is highly unlikely, as the authors explain.

Anderson & Simester (2003) find that customers who took part in their field experiments are more sensitive to a 9-ending price than to actual price differences, since a decrease of 10 euros does not lead to any increase in demand, but demand peaks are observed at 9-ending prices. They also find that the 9-ending effect is stronger for new items than for established ones and, although this effect is weaker than a sale-cue effect. In general, the 9-ending effect works best when presented alone. The ideal combination is therefore to add a 9-ending price to a new item without any “sale” or “promotion” cue, which is possibly explained by the fact that, having already informed customers that an item is discounted through a “sale” cue, little additional information is provided by the price ending. Also, new items are less likely to be directly on sale, so a “sale” cue might look suspicious, while a 9-ending price is a more discreet way of communicating to the consumer that they might get a good deal.

Blattberg & Wisniewski (1987) use scanner data to model how a price ending of -9 affects promotions. They use market share as a dependent variable and a dummy variable for when the price ends in -9. Analyzing 20 product categories, they find that a price ending of -9 for promotions provides an average 10% sales increase over promoting a product without using a 9-ending price. Macé (2012) also reports that 9-ending prices have a positive effect on all investigated product categories (i.e., dishwashing detergent, oatmeal, juices, gum, toilet paper, tuna, paper towels) except for crackers. Positive impacts of 9-ending prices on sales are greater than 20% for a quarter of product categories under investigation. Because positive impacts are not observed on all product categories, it is suggested that this pricing practice should not be adopted indiscriminately.

Just below pricing in a non-decimal currency system. Gabor & Granger (1979) interestingly investigate the use of just-below prices in Britain in the 60's which adopted a currency system that was not decimal, rather a system where 12 pennies made a shilling and 20 shillings made a pound. They investigate the effectiveness of setting prices ending in /11 pennies, which is just below a round shilling and can be compared to 9-ending pricing in a decimal currency system. As they note, setting prices to /11 was common at that time in the UK and it was therefore reasonable to assume a heightened price sensitivity at this critical point. Their results show that /11-pricing is only effective, i.e., it has a corresponding peak in demand compared to a slightly lower price ending in /10 and compared to a slightly higher price ending in /0, for a product for which retailers usually set prices in /11. For another product, for which retailers usually set different price endings than /11, there is no evidence that just-below pricing could be effective. As the authors explain, this suggests that just-below pricing could be a mere artifact, which only works because customers are expecting it and they might consider it the "correct" kind of price, while it does not work where customers are accustomed to other price endings. This would also be coherent with the Adaptation Level Theory (Helson, 1964). Schindler (1991) suggests that because price endings such as -95 and -99 are very common, individuals might have learnt to automatically and spontaneously process them into the immediately higher even price. If this were true, then they would lose their effectiveness. However, if what is suggested by Gabor & Granger (1979) before Schindler about customers expecting odd prices as "the correct prices" were true, then not setting an odd ending might have negative effects on sales, rather than odd endings having a positive effect.

In general, studies that report results in favor of odd prices suggest that odd prices can be effective, even when applied to all references (Schindler and Warren, 1988), although some authors show that it would be best not to apply odd prices indiscriminately (Guéguen, Jacob, Legohérel, & NGobo, 2009; Macé, 2012). In particular, odd prices seem more to have a significant positive impact on sales when applied to new items, when they are not accompanied by any other promotion clue (Anderson & Simester, 2003) and when they are applied to products that have traditionally been odd-priced, as they will be seen as “correct” prices (Gabor & Granger, 1979).

Inconclusive studies. All the studies I have reported so far provide empirical evidence in favor of odd prices. However, some authors in the literature also obtain inconclusive results. This is the case of Ginzberg (1936): he reports an experiment conducted by a large American mail order company to determine whether its odd-pricing policy is effective. Two versions of the catalogue were created: selected items were odd-priced in one version and even-priced in the other. In some cases, the change from an odd price to the next even price causes sales to half, in others to increase disproportionately and in others still there is no effect at all. Therefore, the data does not allow the researcher to generalize any findings. Similarly, Georgoff (1972) uses a quasi-experimental design in a field setting examining eleven products in a 6-store chain of department stores. Manipulating retail price endings over a four-week period, alternating between 00-endings and 99-endings does not cause any significant change in sales between the two conditions.

Stiving & Winer (1997) find that setting a price to end in -0 has a positive impact on sales of both yogurt and tuna, possibly because of positive quality image effects carried by even prices, as we will see later, while setting prices to end in -9 has a positive impact on sales of yogurt, but negative on sales of tuna. This result cannot be interpreted, as the authors cannot identify the reason of such a difference between the two products.

Findings against the odd-pricing practice. Finally, I will present two studies that provide empirical evidence in favor of even or round prices. Dalrymple & Thompson (1969; cited in Gendall, Holdershaw, & Garland, 1997) report the case of a department store who traditionally used prices ending in -95 and tried to switch to a round-prices-only policy and observed no adverse sales effect (although not negative either). Nonetheless, they preferred to keep just-below prices in budget department stores and on merchandise that was on sale. Similarly, as previously mentioned, Bray & Harris (2006) surprisingly show that when raising

99-ending prices to a 1-cent higher round price, for 9 products out of 10 included in the field experiment, sales increase significantly. Only one product shows a large decline when switching from a 99-ending to the higher even price. The authors are unfortunately not able to identify the determinants of these different effects.

As discussed, it is therefore difficult to determine whether odd prices might lead to an increase in sales compared to even or other prices. Some studies show evidence to support the effectiveness of this pricing technique, but many others lack this evidence. As I explain in the next few pages, this could be due to conflicting underlying mechanisms which might prevail and through which price endings act on price preference, and these might be hard to identify at an aggregate level.

2.1.5. How do price endings have an impact on sales?

While some authors have focused their attention on the main effect price endings might have on sales or on purchase intentions, as we have just seen in the previous sections, others have tried to investigate consumer behavior to understand whether there are some mediating effects that might explain such inconclusive or contradictory results. On the one hand, it is normal that a price ending in -9 sells a bit more than a slightly higher even price, just because it is indeed a lower price. On the other hand, it is surprising to see that these prices ending in -9 sometimes sell much more than price elasticity would suggest and that sometimes higher even prices sell more than lower odd prices. As I will show in the next sub-sessions, the vast majority of the literature focuses on level effects (often called underestimation effects instead) and on image effects, such as price image and quality image effects. Understanding these effects can help us make sense of confusing results. Not surprisingly, also evidence on these intermediate effects is often inconclusive or contradictory.

2.1.5.2. Numerical cognition

Before reviewing what has been said on the underestimation effect, it is necessary to provide the reader with a few elements about numerical cognition, which will help us understand why numbers can be perceived as different from what they are. Perception of attributes is often more important than the attributes themselves, and this is true also for the price attribute (Heda, Mewborn, & Caine, 2017).

There are three different levels of numerical information encoding as explained in the triple-code model by Dehaene (1992; cited in Thomas & Morwitz, 2005b), meaning that for each number we see, we normally go through three levels of encoding. These are not mutually exclusive, but rather sequential:

- A visual Arabic code (e.g., we see the number 35);
- An auditory verbal code, generated by a conversion of the acoustic waveform to a phonological representation in which each number is represented by a sequence of phonemes (e.g., we hear thirty/ five, be it out loud or in our head);
- An analog magnitude code that represents numbers as approximate quantities on a dimension called the number line (e.g., we retain “about 35”, “30 and something”, “somewhere between 30 and 40”, etc.).

Retention in short-term memory of short sequences of digits is often speech-based (in the auditory verbal code) and usually lasts about 2 seconds. If a price takes too long to be pronounced, it will probably be less likely to be stored in long-term memory precisely and the analog magnitude code will be less accurate (Thomas & Morwitz, 2005b). The conversions normally become less precise, the higher the number gets. Absolute recall errors will therefore increase, as prices get larger. Also, it has been shown that the longer it takes to encode on an auditory verbal level, the greater the perceived analog magnitude of the number will be. In fact, in a pricing context, Coulter & Choi (2010) advise managers who want customers to perceive a price as small as possible not to set this price with a comma and cents figures, because this will impact significantly the perceived analog magnitude, i.e., the price, being longer, will be perceived as higher.

The encoding of numbers from the visual Arabic code into the analog one can either be lexicographic, i.e., individuals process digits one at a time, or holistic, i.e., individuals process the number as a whole (Dehaene & al., 1990; Hinrichs, Yurko, & Hu, 1981). Individuals can therefore also use one or the other model to compare two multi-digit numbers:

- Lexicographic: individuals will process one digit at a time, starting with the leftmost one, and compare the second to left digit only if the leftmost digits are identical and so on. According to this model, units should matter less, because the leftmost digits will determine the mental magnitude;

- Holistic: individuals will process the symbolic input (the number) into a mental representation of the magnitudes of the two numbers and then compare the magnitudes. Per this model units should have a significant influence within tens. The holistic model suggests that, when presented with two multi-digit numbers to be compared, we assess the quantitative meaning of the numbers by spontaneously mapping them onto an internal analog magnitude scale (Thomas & Morwitz, 2005a).

As for the role of numerical cognition in pricing, Stiving and Winer (1997) show that, when analyzing scanner data, there is evidence that consumers do not process prices holistically, but rather lexicographically from the left to the right, weighting the mental cost of processing all the digits against the limited additional amount of information rightmost digits actually provide.

Accessibility of numbers. It is also important to consider the concept of accessibility (or availability) of numbers: accessibility is in general defined as the ease with which a mental unit is retrieved from memory (Tversky & Kahneman, 1973). When small numbers are involved we can recognize the quantity easily, and they will be more accessible when recalled, but if we are dealing with large numbers, in order to reduce cognitive complexity and to avoid the effort of counting, the encoding process is usually less precise and we estimate the closest easily accessible number (Kaufman et al., 1949). Previous research shows that 0 and 5 are more accessible than other digits (Dehaene & Mehler, 1992, cited in Schindler & Kirby, 1997) and prices that are more accessible are more easily perceived, remembered and compared. The use of round or even numbers in advertising should therefore benefit retailers by simplifying the communication and increasing the chances that consumers will perceive and recall advertised prices (Schindler & Kirby, 1997). From a numerical cognition perspective, there should be no reason for retailers to prefer a price ending in -9 to prices ending in -0 or -5, which are supposedly more accessible, although it has been showed that consumers might have a tendency to recall a price as ending in -9 or -99 even when the original price has a different ending (Schindler & Wiman, 1989). This might be however due to a biased methodology, given the pricing stimuli respondents were exposed to in Schindler & Wiman's (1989) study would only end in -98, -99 or -00.

2.1.5.3. Level (underestimation) and threshold effects

Level or underestimation effects refer to the behaviors or underlying cognitive and psychological processes that cause a consumer to distort their perception of the price (Coulter, 2001). The most common belief about odd prices is that they will be perceived as lower than what they are. As Thomas & Morwitz (2005) point out, evidence gathered from econometric analysis of scanner data (as in Stiving & Winer, 1997) and surveys of retailers' pricing practices (as in Schindler & Kirby, 1997) support this underestimation hypothesis. However, experimental evidence is inconclusive (as in Lambert, 1975). Please refer to Table 5 for a summary of all (to the best of my knowledge) the studies that report empirical evidence on the underestimation effect.

While Holdershaw & Gendall (1997) suggest that customers might have the illusion that odd prices are cheaper than even prices because of cent figures being displayed in a smaller type size, as seen in Picture 1, Macé (2012) and Baumgartner & Steiner (2007) sum up the most commonly suggested mechanisms that would lead consumers to underestimate odd prices:

- Consumers round down prices (among others, Manning & Sprott, 2009; Schindler & Kirby, 1997);
- Consumers compare or in general encode prices from left to right and therefore pay less attention to rightmost digits (among others Thomas & Morwitz, 2005; Stiving & Winer, 1997);
- Consumers have limited memory capacity and remember only the leftmost digits (among others Schindler & Chandrashekar, 2004; Schindler & Kibarian, 1993).

Picture 1- Examples of cent digits being displayed in smaller type size (Hunter, 2014)



Table 5 - Summary of studies on the underestimation effect

Authors	Year	METHOD	UNDERESTIMATION EFFECT?
Bizer & Schindler	2005	Respondents were asked to state how many units of a given item they would be able to buy for \$73. The price endings of the item were manipulated (in half of the cases it was ,99, in the other half it was the immediately higher -00).	Respondents provided higher quantity estimates for 99-priced items than for 00-priced items.
Coulter	2007	Experiment: subjects were exposed to one of six ads containing a sale price only .	Digits appearing to the right of a 5 or a 6 are more likely to be attended to and therefore less likely to be truncated or rounded down than digits appearing to the right of a 1,2,3,4,7,8,9. Right-facing digits facilitate accurate price encoding and recall. Respondents were significantly more likely to underestimate the \$887 price to \$880 than they were to underestimate the \$886, although \$887>\$886.
Coulter	2001	Subjects were exposed to two ads (one with an odd price and another with an even price, manipulation within subjects) whose content was revealed either from left to right, from right to left or all at once (manipulation between subjects).	Level effects only work when consumers are exposed to prices from the left to the right: When presentation order was considered, recall of the dollars digits was significantly greater than recall of the cents digits in the case of L-R and simultaneous presentation groups, but not significantly greater in the case of the R-L presentation group.
Guéguen & Legohérel	2004	Experiment: subjects asked to estimate discounts when shown 10 full prices and their respective discounted prices.	When the discounted price is 9-ending, the subjects estimated greater discounts than when they were exposed to 0-ending discounted prices. However, beyond 100 French francs, the effectiveness on the perceived discount of 9-ending prices tends to disappear.
Lambert	1975	Gamble method where subjects would have to evaluate the total sum of ten sets of 4 prices each. (5 sets with odd prices, 5 with even, each set with odd prices had a set of equivalent value with even prices).	Two of 5 pairs of sets were evaluated as being significantly “cheaper” in the odd price condition, two of 5 pairs of sets did not show sig. difference in evaluation and in 1 pair of sets the even price set had the “lower price illusion”. Inconclusive results.
Manning & Sprott	2009	Experiment: subjects asked to choose between options.	Just below pricing can lead to greater choice for lower-priced items than round pricing (\$29.99 is preferred over \$39.99 more than \$30 is preferred over \$40) supposedly due to larger perceived price differences.
Schindler & Chandrashekar	2004	Keeping constant the sum of each of three sets of five prices but manipulating the ones-of dollars digits, subjects were asked to recall the prices.	The set of prices with the low-number ones-of- dollars digits was recalled as higher than the sets with the ones-of-dollar digits equal to 6, 7, or 9. Use of low-number price endings may result in the consumer recalling the prices as being higher than they actually are. Price endings such as 6 or 7 will be perceived on average like 9. Price endings such as 2 or 3 are more likely to be perceived as higher.
Schindler & Kibarian	1993	Experiment: subjects asked to immediately recall one price they have just seen in an advertisement. Secondly, subjects coming out of stores asked to recall prices they have just paid.	For the first experiment there is no underestimation effect; in the field study also there was no significantly greater tendency to produce underestimates for 9-ending prices than for non-9-ending prices.
Schindler & Wiman	1989	Subjects were asked to recall prices for 20 products two days after the first exposure.	Recalled odd prices were significantly more likely to be underestimates than recalled even prices. Also Even prices show a tendency to be recalled as higher.

Rounding down vs. truncation or dropping off digits

While rounding down an odd price is often the explanation provided in the literature for why consumers might perceive odd prices as cheaper than they are, if we think about the standard rules normally followed in a decimal system for rounding a number up or down, a price ending in -5, -6, -7, -8 or -9 should be rounded up rather than down. Therefore, rounding does not seem to be a plausible explanation, because by its rules, a 9-ending price and a slightly higher even price (e.g., \$599 and \$600) should be encoded into the same perceived price (Schindler & Kirby, 1997). Truncation or dropping-off mechanism, i.e., cutting off rightmost digits before they are recognized and encoded into a more easily accessible number, seems to be a more reasonable explanation. Following the latter mechanism of truncation, a price like \$599 could be encoded as \$590 or even \$500 and something, which are clearly much lower prices. Truncating a number obviously requires less cognitive effort than rounding it up or down, the former being based on ignoring digits and the second being based on recognizing them, recalling and activating the rounding rules and processing the digits into the closest lower or higher number. The underestimation effect therefore occurs when a truncation mechanism is adopted and not when a rounding mechanism is used (Schindler & Kirby, 1997).

If consumers really truncate prices, then they might do so with any price ending and firms would have a great incentive to set odd prices (and more specifically 99-ending prices) because, by so doing, they would be maximizing their unit revenue, without affecting sales volumes negatively (e.g., demand would supposedly be the same at \$0,90 and \$0.99 or at \$190 and \$199, but the firm would have 9 cents or 9 dollars of extra profit respectively, as suggested by Stiving & Winer, 1997; Coulter, 2001). Gedenk & Sattler (1999) calculate that for products with typical consumer brand elasticity (which they report at 1,76), it would be sufficient for consumers to drop off or truncate 9-ending prices only in 3% of the cases, for this pricing technique to be profitable for retailers.

Left to right comparison

The second mechanism proposed is that consumers compare prices either with one another or with a reference price they have in memory (Stiving & Winer, 1997) and they do so from left to right, giving more importance to the leftmost digits both because those are the first digits

encountered when processing the price and because we learn very early in life that those are the most meaningful digits in terms of monetary value (Schindler & Wiman, 1989).

When comparing two prices, if the left-hand digits are different, left to right comparison and truncation mechanisms are indistinguishable, yielding identical results (Stiving & Winer, 1997): when a consumer compares for example a price tag of \$69 with another one of \$57, the truncation mechanism will imply comparing perceived prices of \$60 vs. \$50, while the comparison from left-to right will imply comparing 6 tens with 5 tens, both resulting in the customer choosing \$57 if she is looking for the lower-priced option. On the other hand, when left-hand digits are the same, dropping off rightmost digits does not determine which price will be preferred, while left to right comparison does, because the individual will keep comparing digits from left to right till when she finds two different figures. When a consumer compares for example \$63 with \$69, truncating prices will not help her decide which one is the lower priced option, while comparing one digit at a time from left to right will, as she will realize that \$69 is more expensive than \$63. Therefore, if consumers do compare from left to right, firms also have an incentive to use just-below prices: as long as the leftmost digits for two competing products are different, the consumer will supposedly not bother to evaluate the rightmost digits (Stiving & Winer, 1997). The limit of this proposed explanation is that, of course, consumers are not always in a joint evaluation mode of prices, i.e., they do not always evaluate prices in comparison with one another, but they might consider a price individually and even independently from a reference price.

Limited memory capacity

Even when consumers encode prices correctly at the time of exposure and immediately after as Schindler & Kibarian (1993) seem to show, because of limited memory capacity, when asked to recall, they will only recall the most meaningful part of the pricing message, i.e., the leftmost digits, namely those digits that carry the most monetary value. It would therefore seem that there is a truncation mechanism being adopted after encoding, but before recall. Although having a limited memory capacity is proposed as an alternative explication for why odd prices are underestimated, the three explanations (i.e., truncation, encoding from left to right and limited memory capacity) are strongly interrelated (Coulter, 2002): all of them imply that, because consumers are constantly bombarded with information including prices and other numbers, they actively process only the most valuable parts of the messages they receive.

Several authors investigate how prices are recalled. For example, Schindler & Wiman (1989) show that when recalling prices 2 days after exposure, individuals tend to underestimate 9-ending prices. However, prices recalled two days after exposure are of little use to managers, since consumers most often process prices at the moment of purchase and then forget them. Schindler & Kibarian (1993) therefore suggest that a measure of immediate price recall might be more representative, such as prices recalled few minutes after purchase. Indeed, demonstration that the underestimation of 9-ending prices persist under immediate recall conditions would provide much stronger evidence that underestimation occurs at the time of perception (and therefore maybe right before or during the purchase).

As shown in Table 5, Schindler & Kibarian (1993) conduct two studies. The first is an experiment where subjects are exposed to one advertisement with one price, either ending in -99 or in -00, and are asked to recall it right after exposure. No underestimation effect is observed on average between the two conditions (i.e., the means of recalled prices do not differ significantly), although of the 71 subjects who saw a 0-ending price, only 2,8% recall an underestimated price, while of the 70 subjects who saw a 9-ending price 55,7% recall a price that is lower than what they have seen. 16% of these 70 individuals also completely dropped 99 cents from the correct price. Overall leftmost digits are more accurately recalled. The second is a field study, where consumers are asked to recall prices of products they have just purchased few minutes earlier. No significantly greater tendency to produce an underestimate for 9-ending prices is observed compared to prices not ending in -9. However, there is a significant greater likelihood of producing overestimates in the recall of non-9 ending prices and, once again, the rightmost digits are the most likely to be misrecalled and we can therefore assume that individuals do pay less attention to these digits.

Schindler & Wiman (1989) show that odd ending prices are less likely than even ending prices to be recalled accurately and are more likely to result in recalled underestimates, while even prices show a tendency to be recalled as higher. Recall accuracy is lower for both odd endings tested in the experiment (-98 and -99) and it is lower for -98 compared to -99. In general, rightmost digits are less likely to be recalled correctly, as shown in Table 6.

Table 6 - Percentage of correct recall in Schindler & Wiman (1989)

Digit	Mean % of correct recall
Hundreds of dollars	63
Tens of dollars	44
Ones of dollars	37
Tens of cents	47
Ones of cents	32

Price recall is hardly important. Although there is empirical evidence of recalled underestimates, how a price is recalled is not always relevant, since consumers often decide on the spot whether to purchase or not and they therefore do not need to memorize prices. In only few situations, the way prices are recalled is important: when individuals use this type of information to make a judgment on the fairness or on the price image of a store, which in turn could have a broader and more long-lasting effect on the shopping habits of the consumer (Schindler & Wiman, 1989). How prices are recalled is also important for products for which the purchase decision-making process might take some time: in this case if odd prices are underestimated they might be remembered as low prices and therefore the consumer might consider coming back at a later stage and include them in the consideration set (Schindler & Wiman, 1989).

A bias in methodology. There seems to be little empirical evidence that 9-ending prices are more likely to be underestimated than any other price ending, mainly because previous research only tests differences in likelihood of underestimation for 9-ending prices and higher 0-ending prices (please refer to Table 5; Bizer & Schindler, 2005; Coulter, 2001; Guéguen & Legoherel, 2004; Manning & Sprott, 2009). Other price endings are usually not tested. There is, however, some evidence that consumers have poorer memory for odd prices than for even prices (Schindler, 1984).

Why 9 is more likely to be underestimated. Only two articles try to explain why 9-ending prices might be more likely to be underestimated than other price endings. Schindler & Chandrashekar (2004) and Schindler & Wiman (1989) simply highlight how individuals encode prices more or less precisely. If the encoding is not precise then inevitably they will be unable to recall some digits. Given that 9 is the highest unit digit and given that leftmost digits receive more attention and will therefore be most likely correctly recalled, 9 can only be recalled correctly as 9 or more probably (with a 0,9 probability) as a lower digit. On the other hand, a price ending with a low digit such as -1, -2, etc., is more likely to be recalled as

higher. Let's see an example: when encoding a price of \$62, the leftmost digit will receive more attention because individuals process numbers from left to right and because for the consumer it is more important to know that they are spending around 60 dollars, than to know that they are spending the additional \$2. The 2-ending will have a 20% chance of being recalled as lower (either as a 0 or as a 1), a 10% chance of being recalled correctly as a 2 and a 70% chance of being recalled as higher. This very simple explanation would support the underestimation hypothesis.

Schindler & Chandrashekar (2004) indeed find that price endings ranging from 2 to 7 are more likely to be recalled as higher, while 9-endings surprisingly seemed to be recalled correctly. Coulter (2007) suggests that the directionality of digits might explain why some price endings might be more likely to be attended to than others. As reported in Table 5, because 5 and 6 are right-facing digits they would encourage individuals to attend to digits placed to their right. These digits would therefore be less likely to be truncated. On the other hand, digits appearing to the right of a 1, 2, 3, 4, 7, 9 would be less likely to be paid attention to and therefore more likely to be truncated, because these digits point to the left. This would also work on the left-facing digit itself, so that a 99-ending price ending would encourage individuals to only pay attention to the leftmost digit by pointing to it.

2.1.5.3.1. Leftmost digit effect

Thomas & Morwitz (2005) find that 9-endings affect magnitude perceptions and therefore have an important underestimation effect only if the leftmost digit changes; however, when the leftmost digit does not change, a 9-ending does not have a significant impact on perceived magnitude. This is what the authors call the left-digit effect. Also, Schindler and Kirby (1997) find that managers are more likely to set 9-ending prices when increasing the price by 1 cent would cause the leftmost digit to increase. For example, retailers are more likely to choose a price of \$199 over \$200 than they are to choose a price of \$149 over \$150, because in this second case, the leftmost digit stays unchanged. Schindler & Wiman (1989) and Manning & Sprott (2009) find similar results. However, Wagner & Beinke (2006) find that odd-odd prices, as they call prices allowing for a left-digit effect, do not necessarily “flag a threshold in consumer response”. According to them, this would be mainly due to the fact that 9-ending prices are overrepresented while most other price endings are not represented at all. Therefore, even if we observe in econometric models a peak at 9-ending prices, we actually

cannot exclude that other price endings, if they were represented and therefore observed, would also yield a peak in demand.

2.1.5.3.2. *Threshold effect*

It has also been suggested that 9-ending prices might have a threshold effect (Gendall et al., 1997; Gedenk & Sattler, 1999): just like celebrating a 70th birthday might be perceived differently from celebrating a 69th birthday (Wagner & Beinke, 2006), paying 100 euros can be perceived very differently from paying 99 euros. In other words, rather than 9-ending prices showing peaks in demand or consumers having a clear preference for them, it might be that setting higher even prices might cause a disproportionate loss of sales or that consumers might dislike them. For example, Gendall et al. (1997) report that they decide to test prices at \$10, \$20, \$50, \$100 because retailers interviewed by them believe that these price levels are critical, i.e., exceeding them would result in a disproportionately high loss of sales and that the use of odd pricing at these levels is particularly important.

Gedenk & Sattler (1999) argue that even if the probability of thresholds existing in demand were very small, the retailers should determine their prices as if these thresholds existed. If prices are determined as if thresholds existed and they do not exist, then it makes little difference in terms of profit contribution. On the other hand, if prices are determined ignoring existing thresholds, then there is a risk of large loss. The authors also argue that setting a 9-ending price cannot be recommended if three conditions occur at the same time: marginal costs are low, price elasticity is high and only a small percentage of the population responds to price thresholds. This combination of conditions is however rare, so normally it is best to consider that thresholds do exist in the sales response function.

2.1.5.4. *Image effects*

Level or underestimation effects are not the only possible explanation for why odd prices might cause a peak in demand and they cannot explain some of the inconclusive results we have seen so far nor can they explain why a price ending in -99 sells more than a price ending in -88 (Stiving & Winer, 1997). An important part of the literature also tries to explain possible connotations, better known as *image effects*, that odd prices might carry. Stiving and Winer (1997) define image effects as “those that cause consumers to believe something about the product, the store or the competition on the basis of the right-hand digits of the price”, i.e., image effects of price endings refer to consumers’ attributions of firms’ behavior or intentions

(Coulter, 2001). Similarly, Schindler (1991) says that “a price ending has meaning if it brings to the consumer’s mind information or connotations about price or non-price attributes of the product or the retailer”. Naipaul & Parsa (2001) state that in general, businesses operating at the high end of a market will more likely use even prices, while those operating at the low end of the same market will use more often prices ending in -9. Let’s see why this might be the case and what connotations are reported in the literature for both these pricing techniques.

2.1.5.4.1. Price image effect

Schindler (1991) reports a list of price image connotations that odd prices might have. These are either reported from previous published articles, or from informal conversations he had with retailers and consumers. What he finds is that the consumer might interpret a just-below price as:

- Low relative to other prices applied to the same item by competitors;
- Low with respect to the cost structure of the product;
- Indicative of an overall low-price outlet or store;
- Recently reduced or at least not recently increased;
- Being on sale, being a discount price (which is different from a low price in that a discount is temporary, and expected to go up again).

By contrast or by independent association, an even price might be interpreted as

- High;
- The result of a careless pricing process (i.e., the retailer does not bother to fine tune cent digits);
- Recently increased or less likely to have been decreased;
- The full, regular price.

Has the price been increased? Schindler (1984) conducts an experiment in which respondents are shown pictures of products with either odd (50%) or even prices (50%). Two days later, the respondents are shown the same pictures with half of the even prices increased (the others unchanged) and with half of the odd prices increased (the others unchanged). The price increase never alters the price ending. Respondents are then asked to indicate whether each price has been increased or not and to what extent they are sure about it. The results show that when prices have odd endings, respondents are less likely to notice the price

increase than when the prices have even endings. Also, respondents are more likely to indicate a price increase has occurred in an even price than in an odd price even when no price increase has occurred at all. Overall, there is evidence of a general bias toward indicating that an odd price has unlikely been increased.

Are odd prices likely to be perceived as discount prices? Similarly, Quigley & Notarantonio (1992, cited in Schindler & Kibarian, 2001) ask respondents to rate the price image of items priced either with 00-endings or with 99- or 98-endings. Prices are more likely to be judged at a discount when they are seen with 98- or 99- endings, but there is no statistical difference between -99 and -98. Also, Schindler & Kibarian (2001) find that when subjects are exposed to a price ending in -99, they are more likely to judge that the price is the lowest available for a given item, that the item is probably on sale and that it is unlikely that it has been recently increased (although this last item was not statistically significant).

Price setters' beliefs on price endings. Other articles provide evidence of an intention by price setters to use odd prices as a low-price appeal or about managers' beliefs in terms of price endings connotations. Naipaul & Parsa (2001) find that fine-dining, high-end restaurants with starters priced above \$10 tend to use 0 and 5 as rightmost digits, while quick-service, low-end restaurants with starters priced at less than \$5 use 9 in two thirds of the observations. In quick-service restaurants 0-endings only represent 13% of prices. The authors' conclusion is that, since the use of 9 and 0 as price endings is a well-defined managerial practice, we can assume that pricing managers might be trying to communicate something to their customers through the use of price endings. Moreover, they find that, when customers base their decision on value for money evaluations, they will more likely opt for restaurants with 9-ending prices in their menus.

Schindler (2006) observes two samples of advertised prices and finds that in both 99-endings are used more often when the advertising contains other low-price cues than when it does not. In other words, the presence of other low-price cues (dummy variable) has a significant positive main effect on the likelihood of the price ending in -99 in both samples. It would therefore seem that retailers or price setters in general might be using this price ending to reinforce the message that the product is low-priced. Furthermore, in a questionnaire administered to pricing managers in the hospitality industry, Schindler et al. (2011) find that 62,5% of 112 interviewed managers agree with the idea that 99-endings increase consumers' perception of overall high value.

Previous literature therefore shows that customers tend to associate 9-ending prices with a low-price image (i.e., the price is low relative to competition or to cost structure, unlikely to have been increased, possibly on sale, etc.) and that managers do believe they can reinforce or communicate a low-price appeal through the use of this price ending. Even or round prices, on the contrary, seem to be associated with a high price image (i.e., an even price is perceived as high, more likely to have been increased or as the full price). Schindler (2006) argues that the above-mentioned peaks in demand (Anderson & Simester, 2003; Gabor & Granger, 1979) at just-below prices can be explained by a low-price image, but they cannot be explained by truncation: if truncation were the explanation, then we would observe steps in the demand curve, and not spikes, at the 9-0 transitions.

2.1.5.4.2. Perceived gain effect

As previously mentioned in the section on numerical cognition (2.1.5.2), round numbers are more accessible in memory (Dehaene & Mehler, 1992; Schindler & Kirby, 1997). If this is true, then individuals might use them as reference points when evaluating prices and might perceive that a price ending in -9 is a way for the retailer to give back a small amount from this reference, round price (Schindler & Kirby, 1997). \$29 could, for example, be perceived as a small discount of \$1 from \$30. This would clearly contribute to the perception that an odd price is a discounted price. Choi et al. (2012) hypothesize that if an odd price is indeed perceived as a full round price with a small discount, then it would be better to accompany it by a gain-framed message. Because they find evidence that odd prices indeed work best when accompanied by gain-framed messages, we have reason to believe that the perceived gain effect is a plausible explanation for odd prices' effectiveness.

2.1.5.4.3. Quality image effect

Schindler (1991) also reports a list of non-price connotations that might be caused by the use of different price endings. These effects can concern both the items that carry the price endings and by inference also the overall retailer's quality image:

- Just-below prices have connotations of low quality; since they are perceived as discounted prices, customers might perceive that the products they are applied to are leftovers or out-of-date items;
- By inference, customers might believe that everything sold by a retailer who uses 9-ending prices might be low-quality;

- Some customers, realizing the equivalence of a just-below price and its higher adjacent even price, might perceive that the retailer is being “sneaky” or not entirely honest, in trying to trick the customer into believing they are spending less.

By contrast or by independent association, an even price might be interpreted as typical of high quality products and in general of high-quality retailers (Schindler, 1991).

Naipaul & Parsa (2001) find that, when menu prices end with -0, consumers believe the restaurant to have high overall quality and that, if consumers base their choice for a restaurant on quality, rather than value for money, they are more likely to choose restaurants with prices ending in 0, while, as previously mentioned, if they are looking for value for money, then they will probably opt for menus with prices ending in -9.

Schindler & Kibarian (2001) find that prices ending in -99 can have a negative impact on the perceived quality of an item, if this is perceived as a high-quality item to begin with. In other words, without an initial high-quality image for the item, there is little room for the 99-ending to damage the perception of quality. This is coherent with recommendations by Gedenk & Sattler (1999), who suggest to always adopt 9-ending prices, unless quality image effects are suspected and with findings by Macé (2012), who shows how premium brands suffer the most from the use of 9-endings. Surprisingly, Kinard et al. (2013) find that 9-ending prices do not have a negative impact on quality perceptions, but this might be explained by the fact that the products whose quality perception they try to measure, is not necessarily high to begin with.

Price setters’ beliefs on price endings. Schindler et al. (2011) find that at least 25% of managers who use round or even prices do so because they believe that customers will perceive higher quality. Some of them also mention that round prices seem more honest and make calculations easier. Overall, 42,9% of interviewed managers, including some who do not use even prices, agrees with the idea that 0-ending prices will communicate high quality to the customer.

2.1.5.4.4. Prestige image

In the literature on quality image effects, several authors use perceived prestige and classiness items to measure perceived quality (Schindler, 1991; Georgoff, 1972; Schindler & Kibarian, 2001) as if prestige and quality were part of the same construct. As indicated by Baek et al. (2010), prestige, defined as “the relatively high status of product positioning associated with a

brand” (Steenkamp, Batra, & Alden, 2002 cited in Baek et al., 2010), is not part of perceived quality, but it is a main facet of brand image which influences perceived quality. I therefore report the few findings on what we could call “prestige image” separately from quality image effects, although in the literature the two have been treated jointly.

Georgoff (1972) suggests that “the digit 0 tends to create a prestige effect, which deters price conscious consumers, while appealing to quality-conscious consumers”. Similarly, Schindler (1991) reports that even endings might contribute to giving a store or a product an image of classiness, sophistication or prestige (citing Alpert, 1971; Feinberg, 1962; Spohn & Allen, 1977). Also, he points out how leaving out the cents digits might communicate classiness and prestige because it shows how customers patronizing that store are “above thinking about pennies”. Schindler & Kibarian (2001) observe how using 99-endings is not classy for a retailer, while Stiving (2000) observes that retailers with a classy image such as Neiman-Marcus, Nordstrom and Macy’s are the most likely to use prices that end in -0, while retailers that are normally considered as “not classy”, such as WalMart, Kmart, Target, usually do not use 0-ending prices.

Odd pricing paradox and feeling of deception

We have seen so far how 9-ending prices have a low-price connotation. One would therefore expect them to be among the lowest prices available for any given item in the marketplace and would expect the low-price connotation to be a result of customers coming to learn that low prices usually end in -9. Surprisingly, this is not always the case.

For example, Schindler (2001) finds that of 1200 prices observed (i.e., 10 price observations for 120 products), only 4,5% of all prices ending in -99 are the lowest in the observed set. Moreover, not only were 99-ending prices less likely to be the lowest prices available for a given item, but also, they were on average the highest prices. If this were generally true, then this would mean that the low-price connotation cannot result from customers observing reality and creating mental associations between 9-ending prices and a low-price image.

Similarly, Huston & Kamdar (1996) find that price level is a poor predictor for the use of 9-endings, since in their observed sample, 9-ending prices are not associated with lower prices. Wagner & Beinke (2006) also observe that in their sample all lowest prices are even, and not odd. Ngobo, Legohérel, & Guéguen (2010) find that this paradox is store-dependent: in some stores 9-ending prices are the lowest, in others they are the highest.

Together with the fact that consumers might easily realize the substantive equivalence of an odd price to a slightly higher even price, this paradox of odd prices having low price connotations but being often the highest prices around, can contribute to a feeling of deception that the retailer is trying to mislead or trick consumers (Estelami, 1999; Schindler, 2001).

2.1.5.4.5. *Underestimation vs. Image effects*

To conclude on the effects odd and even prices might have, it is important to notice how image effects (price, quality, prestige image effects) are opposite to underestimation effects: in the first case, individuals pay attention to price endings and learn to give them a meaning, while in the second case, individuals supposedly ignore rightmost digits (Legohérel et al., 2013; Coulter, 2001). Even if we admitted that the two kinds of effects are not mutually exclusive, we could explain some of the inconclusive results by the fact that underestimation effects and price image effects are favorable to the retailer, while quality and prestige image effects are unfavorable; these two effects could therefore compensate each other out (Lambert, 1975; Schindler & Wiman, 1989).

2.1.5.5. *Consumers are heterogeneous in their preference for odd prices*

Another possible and complementary explanation for inconclusive results is that consumers might be heterogeneous in their preference for odd and even prices (Baumgartner & Steiner, 2007) and that there might be several determinants that can moderate the effects of such pricing techniques (Macé, 2012): several studies only consider effects at an aggregate level, but some authors propose some variables that might explain such heterogeneity of results. Some of these variables are context- or product-dependent and can therefore be manipulated in experimental settings; others are consumer-dependent and will therefore vary according to the personal characteristics of consumers. In other words, it is not possible to determine whether an odd price will have a negative or a positive impact on sales per se, without considering to what product it is applied to, what characteristics the target customer has and in which situation she will purchase.

Macé (2012) finds that the more expensive is a product and the higher its share in the budget of the purchaser, the less likely an odd price is to be effective. She also finds that the more a retailer uses 9-ending prices, the more this practice becomes counterproductive, unless it accompanies real promotions, in which case it reinforces their effectiveness.

Influence of time constraint on choice. Schindler & Warren (1988) suggest that consumers having to make a choice from a lengthy list of items and with a limited amount of time should be more prone to choose odd-priced items than consumers with a shorter list and the same amount of time. However, they do not find evidence for this in their experiment simulating a dining situation with a choice of items from a menu, while Baumgartner & Steiner (2007) do find that respondents who had less time to make the choice in their conjoint analysis preferred odd prices: the greater the time pressure, the more likely they are to prefer odd prices, which leads to believe there are indeed drop-off mechanisms.

Consumer-dependent variables. Baumgartner & Steiner (2007) find that consumers with a clear brand preference are more likely than consumers without a clear brand reference to prefer 9-ending prices, but the authors do not provide an explanation of why this might be the case. Moreover, while Baumgartner & Steiner (2007) find no empirical support that respondents who care most about prices will prefer odd prices, Chang & Chen (2014) find that consumer's price consciousness is a moderator of the underestimation effect: the more a consumer is price conscious, i.e., the more the consumer focuses exclusively on paying a low price for a product (Lichtenstein, Ridgway, & Netemeyer, 1993), the weaker the underestimation effect will be because highly price conscious people are more likely to pay attention to all digits of a price and are therefore less likely to misconceive a 9-ending price (Chang & Chen, 2014; Macé, 2012). Coherently, Bizer & Schindler (2005) test the moderating role of processing motivation of odd prices on the underestimation effect and find that when processing motivation is low (i.e., typically when price consciousness is low), there will be a larger tendency to truncate odd prices, which will result in a larger underestimation effect.

Finally, Macé (2012) finds that individuals with a higher education level should be less attracted to a price ending in -9, because they should have the cognitive skills to recognize the substantial equivalence to a higher 0-ending price. On the other hand, working women, although probably more educated than non-working women, are more likely to truncate prices because of time constraints and are therefore more attracted to 9-ending prices (Macé, 2012).

In general, because of all of these differences in preferences, it is not advisable to use odd prices indiscriminately (Macé, 2012; please refer to Table 7 for a complete list of determinants that have been tested), but it is preferable to investigate one's clientele's preferences and characteristics before implementing the odd pricing practice.

Table 7- Determinants of the impact of nine-ending prices.

Category	Determinant	Hp Development	Expected relationship	Confirmed	If not confirmed, other explanation
Clientele characteristics	Education level	Educated people should have the cognitive skills to consider the whole price including the rightmost digits and they should be able to recognize whether a 9-ending price really offers an economic advantage or it is just a commercial tool.	-	YES	
	Working women%	Due to time constraints, working women are more likely to round down prices.	+	YES	
	Income	People with high budget constraints should be more price conscious (Hoch et al. 1995) and should be more motivate to pay close attention to prices.	+	YES	
	Household size	Hp not developed.	-	NS	
	Age	Older people should be less capable of processing information (Yoon and Cole 2008).	+	NS	
Category and Store specific characteristics	Category price	In expensive categories, purchasing is involving, thus the underestimation effect should be weaker + the inferior quality connotation should contrast with the high-quality image of expensive categories.	-	YES	
	Budget share	For similar reasons to those presented just above in category price, 9-ending effects should be weaker for products that command a higher share of the shopping budget.	-	YES	
	Assortment size	A large assortment limits consumers' ability to process all information while increasing the cognitive cost (Kahn and Lehmann 1991). Large assortments might enhance the use of rounding down (= stronger level effects).	+	NO	The difficulty consumers confront in their efforts to identify 9-ending cues within the mass of items increases with assortment size.
	Differentiation level	In less differentiated categories, brands are more substitutable. Consumers should therefore be more deal prone and in turn more sensitive to 9-endings that can be interpreted as good deals.	-	NO	9-ending impacts are lower when brands are more substitutable, no alternative explanation is provided; see Ngobo et al. 2010.
	Innovation level	Consumers lack info about the relative price levels of new items and use price endings as a cue of economic advantage (price-image effect; Anderson and Simester 2003). 9-endings should be more effective for recently introduced products.	+	NS	Non-significant but effect in the direction of the hp.
	9-ending practice	Overuse of 9-ending prices could make customers suspicious, and it is expected to be counterproductive.	-	YES	If the practice increases by 10%, the effect on sales decreases by 2%.
	9-ending practice's alignment with promotions	Implementing promotions with 9-ending prices should reinforce this practice.	+	NS	Non-significant but effect in the direction of the hp.
SKU specific characteristics	SKU price	Similar to price category. Example, consider two products one priced at \$1.99 and another priced at \$2.99. If the underestimation effect works in the same manner for both prices, then the underestimation in absolute values will be the same (0,99) but for the more expensive item it will be a much lower underestimation in % temrs (33% vs 50% for the least expensive item). So 9-enfing prices are expected to be more effective for cheaper items.	-	YES	
	Private label	Private label customers are known to be price conscious (Ailawadi, Neslin, Gedenk, 2001; Narasimhan et al. 1996). See line for Income.	-	NS	
	SKU promotional 9-ending practice	Implementing promotions with 9-ending prices should reinforce this practice.	+	YES	
	SKU maturity	9-endings should be more effective for recently introduced products. See Innovation level line.	-	YES	
	Market share	High market share brands enjoy greater purchasing loyalty than low market share brands. Loyal consumers should be less influenced by level effects, as they should rely more on visual detection to spot their brands. Lower nine-ending effects are expected for high-market share brands.	-	YES	

NS = non-significant

2.1.6. Can price endings be used as signals?

Some authors hypothesize that price endings can be used as signals. This is the case for example of Ngobo et al. (2010) who adopt an information economic theory perspective (Milgrom & Roberts, 1986) to interpret the 9-ending pricing issue: since low-price meanings of 9-ending prices and high-quality connotations of 0-ending prices are supposedly known to

the consumer, retailers can use them to signal low price or high quality as needed. Also, Schindler (2006) states that 99-endings can be used as a clear signal of low-price appeal, because he finds that this price ending is often used together with other low-price cues.

However, strictly speaking, a signal works only if it is credible, i.e., if consumers can believe its content (Erdem & Swait, 1998). As we have seen, 9-ending prices are not necessarily low prices; on the contrary, they can be among the highest prices for a given item (Schindler, 2001). It is therefore possible that consumers originally came to associate 9-ending prices with sales and reductions and that they learnt to infer that they must be low prices, when in reality in many cases, odd pricing is just an attempt for retailers to convince their products are cheap, while they are not (Schindler, 2001). So, despite the plausible signaling intention of the retailers, odd prices would not be a convincing signal, due to the conflicting evidence that these prices are often rather high prices.

Moreover, a signal of high quality should be costlier to the low-quality firm than to the high-quality firm (Kirmani & Rao, 2000). It is however hard to imagine how simply changing the rightmost digit of a price (i.e., more specifically, setting an even price rather than a slightly lower odd price) would be more expensive for a low-quality firm than for a high-quality firm (Huston & Kamdar, 1996). Stiving (2000) therefore provides an alternative explanation, for which he finds empirical support in his model: even prices *per se* are not signals of high quality; firms signal high quality with a high price and most likely set them to have even endings. Consumers then observe prices in the marketplace and learn to associate high quality with high even prices.

Quality image explains inconclusive results. Even prices being associated with high quality could explain why some studies on odd prices have been inconclusive: what we have seen so far is that odd prices can be perceived as lower than what they are (underestimation effect) and that they might contribute to create a low-price image (price image effect). Both effects would be favorable to the retailer, but they cannot explain why odd prices sometimes have a negative effect on sales. As previously mentioned, Bray & Harris (2006), for example, find that for 9 out of 10 products sales significantly increase when increasing 9-ending prices to higher even prices. Not only can't this be explained by the normal law of demand, but it cannot be explained by underestimation and price image effects either: the only plausible explanation, as the authors suggest, is that even prices carry the connotation of higher quality.

2.1.7. Key points on odd and even pricing

- Odd pricing is “the practice of expressing a price so that its ending (i.e., its rightmost digits) causes it to fall just below a round number”. It is a pricing practice typical of FMCG.
- Authors usually decide to investigate the most widespread form of odd pricing, i.e., prices ending in 9.
- Odd prices are very common in many product categories, 9 often being the most common price ending, even more common than 0 and 5.
- Consumers seem to be heterogeneous in their preferences for odd or even prices: this heterogeneity can be explained by context-, consumer-, product-dependent variables.
- There are at least two mechanisms through which price endings have an impact on preferences / sales: underestimation effects and image effect.
 - Odd prices seem to have a low price, low quality and low prestige image and are usually underestimated.
 - Even prices seem to be perceived as high, full prices and to be associated with high quality and high prestige images.
- Inconclusive results at an aggregated level can be explained by the heterogeneity in preferences for odd or even prices and because of the competing image effects (price image being favorable to the retailer and quality image being unfavorable to the retailer).
- In general, it is not possible to say under which circumstances odd prices will be effective in increasing sales.
- No literature exists on odd and even pricing in a luxury context.

2.2. Literature review on luxury

2.2.1. What is luxury?

“A luxury product is an ordinary object for extraordinary people, and an extraordinary object for ordinary people” (cit. Bernard Dubois). Lee, Ko, Lee, & Kim (2015) define luxury products and services as “nonessential items and services providing pleasure and prestige related to rarity and uniqueness; luxury is mainly identified by high price and superior quality.” Berthon, Pitt, Parent, & Berthon (2009) point out how researchers tend to leave the definition of luxury implicit, since everyone intuitively understands the concept. However, since the concept of luxury is extremely subjective and variable, both from one individual to another and from a society to another, nobody really agrees on what it means precisely, what are its boundaries and the brands that belong to its universe (Bastien & Kapferer, 2012; Wiedmann, Hennigs, & Siebels, 2009). For example, some consumers might consider Louis Vuitton as a luxury brand, others might find it vulgar and not even consider it as luxury at all.

The etymology of the word “luxury” is “luxus”, which in Latin conveyed the notion of splendor, magnificence, ostentation and excess. Similarly, the equivalent of the word “luxury” in many European languages nowadays still conveys the idea of excess and extravagant abundance. Not by chance, the word “luxury” in Italian and in French has the same root of the word “lust” (i.e., “lussuria” in Italian and “luxure” in French), which means “lasciviousness, sinful indulgence” (Berthon et al., 2009).

Given the difficulty in providing a precise definition of what luxury is or is not, Bastien and Kapferer (2012) describe the concept with a list of criteria and guidelines that help us distinguish luxury from premium products:

- Something can be defined “luxury” when not anyone can access it. Because of this, luxury is a main sociological issue for any society because it helps define social stratification and it marks repartition of wealth. Luxury is therefore a social indicator, which gives its owner a feeling of privilege; luxury is what is most desirable socially, because it places its owners at the top of a hierarchy (as also argued by Veblen, 1899);
- Luxury must create a hedonic experience, which should prevail on functionality. Functionality or practical utility can be minor, but they must exist, otherwise we are not dealing with luxury, but with art. A luxury product must arise emotions, aesthetic sense

and pleasure, make the consumer dream (which is not necessarily the case for a premium product) and be well known, elegant and refined;

- Luxury products do not answer to consumers' needs, but to consumers' dreams: luxury brands' challenge is to maintain the dream alive but at the same time find enough customers that buy the brand's products to make it profitable (the more people own the brand, the less it is dreamed of according to the *dream equation*; Bastien & Kapferer, 2012; p. 201); not answering to consumers' needs also means not having a demand-driven marketing approach, but being rather offer-oriented, drawing legitimacy and authority from the creative genius, often of single individuals; the creator who is both innovative and convincing can create market acceptance (Nueno & Quelch, 1998). Similarly, Charrueau (1991) suggests that traditional demand-based methods do not apply to luxury and that an offer-based approach is therefore more relevant and this is why products are not developed based on market research (Neiertz, 1991; Alleres, 1991);
- Luxury should be produced in its own country of origin; a product whose production has been delocalized from its country of origin is no longer a luxury product;
- Luxury must have an important "human component" (it must be either handmade, even in small parts, or the service should be delivered by a person), it should carry a "human print" and it should be accompanied by a personalized service. Similarly, Veblen (1899) explains that handmade products are better suited to conspicuous consumption because hand labor is more of a wasteful method of production than mass production;
- Luxury products should be at the same time timeless and contemporary, perfectly modern for the contemporary society but clearly linked to the historic heritage of the brand, to a culture, a history, a savoir faire;
- Luxury products should feature excellent quality;
- Luxury products should be acquirable by paying a price that is greater than what one would normally pay for a non-luxury product with equivalent functionality;
- Luxury products should be available only in carefully selected points of sale (either through exclusive or selective distribution channels);
- As a result of all previous criteria, a luxury product will be rare and exclusive.

Before exploring the different facets of luxury more in detail, I will give a concise overview of what has been said about luxury over the centuries.

2.2.2. Luxury over the centuries

2.2.2.1. From antiquity to the 19th century – a brief overview (Borghero, 1996)

Luxury and conspicuous consumption are not concepts that have recently been developed. The history of luxury consumption is thousands of years old, dating back to as early as Ancient Egypt, with the trade of precious metals, jewelry, etc. (Berry, 1994; Sung, Choi, Ahn, & Song, 2015). Unlike the word “luxury”, which appears in many European languages (e.g., *luxe* in French, *lusso* in Italian, *lujo* in Spanish, etc.) at the beginning of the 17th century (Charon, S. in Assouly & Bergé, 2011), the concept of “luxury” begins to appear in the antiquity in classic works and in denunciations by religious and moral authorities (Chandon, Laurent, & Valette-Florence, 2016). In particular, Herodotus (Halicarnassus 484 B.C. – Thurii 425 B.C.) describes his amazement when faced with Persians’ wealth (The Histories, Herodotus, 440 B.C.; IX, 80-82) and Plato (Athens 428 B.C. – 347 B.C.) condemns satisfaction from pleasures and superfluous possessions (The Republic, Plato, 380 B.C., VIII 558 d - 559 c), while condemning wealth as incompatible with virtue (VIII 550 d - 551 a). This condemnation of luxury continues with Christianity (Dubois et al., 2001) through the middle ages, when luxury is still mainly discussed in terms of moral legitimacy of accumulations of wealth (Roncaglia, 1996).

By the 17th century, authors start discussing a possible positive role of luxury in the society. For example, Mandeville (Rotterdam 1670 – Hackney 1733), in one of his essays that accompany the poem in which he defines luxury as “everything that is not immediately necessary to make man subsist as he is a living creature” (Mandeville & Kaye, 1924; vol. I, pp. 101), gives an apology of luxury, saying that it is a good stimulus for the industry and commerce and it identifies with everything that is beautiful and therefore coincides with civility itself.

Voltaire (Paris, 1694 – 1778) also praises luxury by saying that he loves luxury and even idleness, all pleasures, arts of any kind, cleanliness, taste, ornaments and he concludes his apology of luxury by saying that heaven on earth is in Paris, where all kinds of luxury are accessible to the wealthy (cit. J'aime le luxe, et même la mollesse, Tous les plaisirs, les arts de toute espèce, La propreté, le goût, les ornements; Le Mondain, Voltaire, 1736; vv. 8-12). Similarly, Montesquieu (La Brède 1689- Paris 1755) shares many of Voltaire’s convictions, as he supports the idea that luxury produces many positive effects in modern monarchies,

contributing to personal enrichment and the State's prosperity (De l'esprit des lois, Montesquieu, 1758; VIII, 1-4). With Montesquieu the idea that inequalities of wealth, trade development, money circulation and luxury consumption are inevitable facts becomes accepted by society (Borghero, 1996).

A few years later, Adam Smith (Kirkcaldy 1723- Edinburgh 1790) in his work "An Inquiry into the Nature and Causes of the Wealth of Nations", published for the first time in 1776, does not take a clear position in favor or against luxury consumption, but he says to tolerate and accept moderate luxury, while still preferring private and public parsimony and savings that can be invested (Smith & Carman, 1930; vol.1, pp. 318 - 323; vol. 2, pp. 399-400 & 417). In the same work, he offers a categorization of consumption in 4 categories: *necessary* to maintain life, *basic* for normal growth and prosperity of the community, *affluent* consumption, which is not strictly necessary for the prosperity of the community, and *luxury consumption*, which concerns goods that are in limited supply, difficult to procure and very expensive (Berthon et al., 2009).

The full affirmation of the industrial revolution at the end of the 18th century slowly and gradually promoted the diffusion of luxury goods (Borghero, 1996).

2.2.2.2. *The theory of the leisure class (Veblen, 1899)*

At the end of the 19th century the most cited author on luxury, Thorstein Veblen (Cato, 1857- Menlo Park 1929) describes American society and how money and conspicuous consumption have become the basis of an honorable reputation. The search for superfluity in possession and consumption becomes honorable because it indicates belongingness to a higher social class. Veblen distinguishes between "invidious comparison" and "pecuniary emulation". In the first case, members of a higher class consume conspicuously to distinguish themselves from members of a lower class. In the second case, a member of a lower class consumes conspicuously in order to be thought of as a member of a higher class (Bagwell & Bernheim, 1996).

Veblen discusses how property is the most recognizable evidence that a person belongs to a high social class and the most conventional basis to infer somebody's worth, even more so if the property has been inherited rather than recently acquired because this shows that the individual is ennobled by the protracted contact with accumulated wealth. Because of the importance of property in social terms, according to Veblen, individuals soon realize the need

of property for the purpose of self-esteem and self-respect as well: a person should possess at least as much as, but preferably more than, other individuals this person wants to be associated with; possessing more than others is, of course, extremely gratifying. The desire to emulate higher classes is the stimulus that prompts individuals to try and own more than other members of their own social class (this is what Veblen calls “pecuniary emulation”): this greed for property and wealth acts so that, regardless of the quantity of wealth a person owns, this quantity can always be considered as a new starting point to accumulate even more. This is similar to what Han, Nunes, & Drèze (2010) expect of Parvenus and Poseurs (please refer to pp. 71-72 for a more complete description of these segments) in terms of associative motifs of emulative consumption: Veblen highlights how members of each layer of society take the scheme of life of the next higher level as their ideal and invest their resources to try to emulate it (Han & al., 2010 show how Parvenus try to imitate the spending habits of Patricians, while Poseurs try to imitate Parvenus').

Veblen goes on to state how property is the basis of reputation, but it is not sufficient in itself: reputation and esteem by other members of the society are only awarded on evidence. Evidence of possession is put forward thanks to the wasteful consumption of unnecessary things, since no merit would result from the consumption of necessary goods; in order to have “honorific reputation” consumption must be wasteful and superfluous. Moreover, the author reminds us how, since the time of the ancient Greeks, abstention from work has always been considered as “necessary to lead a worthy, blameless life”. Abstaining from work in a conspicuous and visible manner is a sign of superior pecuniary achievement and worthy of good reputation. The ultimate symbol of reputation is to be able to abstain from work and to have so many servants, that some of them can also afford to be unproductive and engage in conspicuous leisure, where leisure is intended as unproductive consumption of time. However, whenever the social group the individual has to relate to becomes bigger, conspicuous consumption is more of an effective way to state status. All practices of conspicuous and wasteful consumption or abstention from work are part of what Veblen defines “invidious comparison” and it is the ensemble of all those practices that individuals adopt and engage in to distinguish themselves from lower social classes (similarly to what Parvenus do to distinguish themselves from Poseurs and Proletarian according to Han, Nunes, & Drèze, 2010).

Veblen also hints at the concept of *cultural capital*, developed later by Bourdieu (1979), by saying that individuals should cultivate their tastes to avoid “stultification” and to be able to appreciate expensive products not simply because they are expensive but because of their intrinsic excellence, although an object is all the more beautiful when it is expensive. In fact, a beautiful object that is not expensive can be considered as not beautiful, while other objects of “no greater intrinsic beauty are considered as beautiful just because they are expensive” (this is what Veblen calls “pecuniary canons of taste”). Because hand labor is more of a “wasteful” method of production than mass production (supposedly because it is less efficient), handmade goods are more appropriate to own and consume to show off “pecuniary reputability”. Furthermore, objects used with the purpose of invidious comparison should be rare, because what is common is within reach of many. A perfect example of objects that can be used for invidious comparison, according to Veblen, are dresses: not only do they have to be visibly expensive and uncomfortable, to show that the person wearing it abstains from productive activities, but they also must follow the latest fashion. This is because, clearly, a member of a lower class could once in a lifetime have enough money to purchase expensive clothes. But there is no way for him or her to be able to keep up with the continuous expenditure required by the ever-changing fashion: if a garment can only be used for a short period of time, then the expenditure will be greatly increased and repeated often, so that only the truly wealthy can afford it.

Because of the importance Veblen grants to objects’ expensiveness and because he is the first author to suggest that expensive items could be more desirable, the fact that the demand for some articles might increase with price is nowadays called “Veblen effect”. This can also be observed as a higher willingness to pay for prestigious goods that have otherwise functionally equivalent, but cheaper, substitutes (Bagwell & Bernheim, 1996; Leibenstein, 1950).

2.2.2.3. An overview of Bourdieu’s Distinction by Holt (1998)

In his attempt to investigate American patterns of consumption and ways of life at the end of the 90’s, Holt (1998) gives a thorough review of Bourdieu’s theories (Bourdieu, 1979). Please refer to his article to have a grasp of these theories. Hereinafter I will only report the points that can be relevant to consumption of luxury goods.

Other factors than income influence consumption patterns: among these factors, Bourdieu highlights the importance of cultural capital, which he defines as a set of socially rare and

distinctive tastes, skills, knowledge and practices. Cultural capital exists in three forms: firstly, embodied as implicit practical knowledge, skills, and dispositions; secondly, objectified in cultural objects; lastly, institutionalized in degrees and diplomas. Bourdieu documents how cultural capital is enacted in all fields of consumption and leisure, not only the arts, but also food, interior décor, clothing, hobbies, etc. (Holt, 1998). Downplaying public displays of status symbols, Bourdieu argues that tastes alone can be used to infer social status through cultural capital, because only few that have the ability to do so appreciate certain objects. For example, cultural goods require high levels of cultural capital to be fully enjoyed: if you do not have enough cultural capital, you can still possess a piece of art, but you will not be able to appreciate it. Similarly, Lageat, Czellar, & Laurent (2003) report that previous research on consumer knowledge has shown that the cognitive structures of consumers who are knowledgeable in a field are more complex and elaborate than those of novice and expertise is therefore a key feature allowing consumers to properly assess hedonic attributes of a product.

The expression of taste becomes therefore more relevant and important than the mere possession of goods. Indeed, as Holt (1998) highlights, consumption patterns of individuals belonging to different layers of society can significantly overlap as the boundaries of social classes have become blurry and unstable, but it is thanks to the way goods are consumed and appreciated that we can infer belongingness to one social class or another. Given this deteriorating classificatory power of goods, cultural elites in advanced capitalist societies nowadays attempt to secure distinction by consuming in a distinguished manner, which is inaccessible to those with less cultural capital. In line with Bourdieu's cultural capital theory, Dubois & Duquesne (1993) find that of course higher levels of income induce people to acquire more luxury goods, but culture plays an equivalent role. In their study, they find that consumption of luxury triples when, regardless of the income level, they compare individuals with high cultural capital with individuals with low cultural capital.

Elaborating on Bourdieu, Holt (1998) argues that individuals low in cultural capital normally develop a taste for necessity, while individuals high in cultural capital usually try to distance themselves from it (echoing Veblen, according to whom the consumption of necessary things cannot be accounted for conspicuous consumption; Veblen, 1899). For example, although for individuals high in cultural capitals comfort and durability are still important product

attributes, they tend to take these for granted and they choose between materially satisfactory options based on aesthetics.

Affirming one's status is a source of utility for customers (Dubois & Duquesne, 1993) in the same way as they derive utility from product quality or aesthetic design, for example. We have just seen how individuals low in cultural capital develop a taste for necessity, while individuals high in cultural capital tend to develop a distance from it and develop a taste for aesthetics instead. If we consider that individuals low in cultural capital, such as Parvenus or Nouveau Riches, might feel they *need* to acquire conspicuous goods (they buy luxury because of their taste for necessity) because thanks to those they can affirm their status, then individuals high in cultural capital, distancing themselves from the necessity of affirming their status, should tend to dislike conspicuous goods. Han et al. (2010) suggest this applies to the segment of Patricians. For example, an individual high in cultural capital interviewed by Holt (1998), clearly stated: "Anything that is ostentation is out of the window for me, I do not like something that is built to impress. I do not like clothes that draw attention to themselves and that look as if they are shouting".

In general, individuals high in cultural capital also tend to take distance from mass culture. They tend to prefer objects that are personally meaningful, hand-made possibly, to mass-produced goods. For those product categories for which it is practically impossible to avoid consuming mass products but for which different sorts of product combinations are possible (e.g., furniture is combined in a living room, clothes in an outfit, foods into meals) then High Cultural Capital individuals will express their subjectivity through combinatorial inventiveness. Individuals low in cultural capital, on the contrary, are more likely to prefer objects that are conforming to norms, because they need the acceptance of their peers. Even regarding their preferences for hobbies, they do not express distinctive identities, but belongingness to communal environments and the sharing of skills with like-minded others (Holt, 1998).

2.2.3. Components of the luxury concept

Several authors have investigated the concept of luxury and its dimensions. Among others, we find the works of Vigneron & Johnson (1999; 2004), Berthon et al. (2009) and Wiedmann et al. (2009). Sung et al. (2015) also propose a scale to measure luxury brands' personality, although not relevant to my research. To the best of my knowledge, all past research

recognizes that luxury is not a one-dimensional construct (De Barnier, Falcy, & Valette-Florence, 2012; Dubois et al., 2001), but it is a concept made up of several facets. For a thorough and concise review of the literature on the topic before 1999, please refer to Vigneron & Johnson (1999, p.3).

Although we can identify some recurring elements, such as excellent quality, expensiveness, prestige, etc., each piece of research proposes a slightly different breakdown of the concept of luxury. For example, Vigneron & Johnson (2004) propose a distinction between non-personal-oriented perceptions of luxury, including conspicuousness, uniqueness and quality, and personal-oriented perceptions, including hedonism and extended self, although it is not clear how the latter is conceptually divergent from what they call “conspicuousness”, as both refer to the perception of luxury as a status symbol. The two authors also suggest that perceptions of quality, uniqueness and status are price-driven, while hedonic and extended self perceptions are not price-driven (Parguel, Delécolle, & Valette-Florence, 2016).

Wiedmann et al. (2009) propose a four-dimension breakdown of the concept: financial value (i.e., price), functional value (i.e., usability, quality and uniqueness), individual value (i.e., self-identity, hedonic value, materialistic value) and social value (i.e., conspicuousness value and prestige value). Other authors, such as Berthon et al. (2009) and Vickers & Renand (2003) propose a classification that is similar to the one by Wiedmann et al. (2009), omitting the separate financial value and suggesting that the main dimensions of luxury are three: functional (i.e., referring to quality and answering the questions “what does the brand do?”, “What are its physical attributes?”), experiential (i.e., “what does the product or the brand mean to the individual?”) and symbolic (i.e., social, “what does the brand mean to others?”). Please refer to Table 8 for a summary of these classifications.

Table 8 - Three possible classifications of dimensions of luxury

Wiedmann et al. (2009)	Berthon et al. (2009) & Vickers & Renand (2003)	Vigneron & Johnson (2004)
Financial value	/	Non-personal-oriented
Price		Conspicuousness
Functional value	Functional value	Uniqueness
Usability	Quality	Quality
Quality	What does the product do?	Personal-oriented
Uniqueness	What are its physical attributes?	Hedonism
Self-identity value	Hedonic value	Extended self
Self-identity	What does the brand mean to the individual?	
Hedonic		
Materialistic		
Social value	Symbolic value	
Conspicuousness	What does the brand mean to others?	
Prestige		

2.2.3.1. Main facets of luxury that might be impacted by price endings

Of all the facets of the luxury concept that I listed in the previous paragraph, some are more recurring than others and for some of these it is possible to formulate hypotheses concerning the impact that different price endings might have on them thanks to previous research that has been conducted either on luxury or on price endings.

As we have seen, several authors have focused on the price image and quality image effects that odd and even prices might have. In the next few pages I will present what has already been said in the literature concerning quality and price image (which is another word for perceived expensiveness) of luxury goods and the relationship between the two constructs. The idea behind this is that if odd prices usually have a negative impact on perceived quality and perceived expensiveness in a non-luxury context, there is no reason why, a priori, this should be otherwise in a luxury one. Similarly, the suggestion that odd prices might have a negative effect on the perception of prestige or classiness and even prices might have a positive effect on it (please refer to 2.1.5.4.4, on page 43) allows me to hypothesize that an odd price might also have a negative impact on perceived prestige for luxury products, as I will better explain later in the conceptual framework on consumers' perceptions in Chapter 5. In other words, if even prices imply that customers are "above thinking about pennies" (Schindler, 1991), odd prices might imply that the customer does care about the last few pennies to pay, which might be offensive or insulting for somebody who spends money very freely, as some luxury consumers supposedly do. Lastly, the fact that odd pricing is a practice typical of Fast Moving Consumer Goods, which are, by definition, non-unique, intuitively should reduce the perception of uniqueness of the luxury product (uniqueness image).

There are two more facets of the luxury concept that are quite recurrent in the literature, "hedonism" (or "hedonic component of luxury") and "history, heritage and tradition", for which I will not be able to formulate hypotheses, as it seems, to the best of my knowledge, that there is no logical link between them and the effects that are supposedly caused by price endings. I will however briefly present them for the sake of exhaustiveness.

2.2.3.2. Quality

It is expected that luxury brands offer superior product qualities and performance compared with non-luxury brands (Vigneron & Johnson, 2004). The literature on luxury puts emphasis on the importance of quality as a product attribute (Bastien & Kapferer, 2012; Vigneron &

Johnson, 2004; Wiedmann et al., 2009): “excellent quality is a *sine qua non*, and it is important that the premium marketer maintains and develops leadership in quality” (Quelch, 1987). The mental association between luxury and quality is so strong for certain individuals that the two words are synonymous (Dubois et al., 2001). Indeed, consumers of luxury goods expect them to perform perfectly during a long time.

Luxury products should be durable and resist wearing and tearing, their value should even increase over time (Bastien & Kapferer, 2012); this is the main criterion that distinguishes luxury from fashion, the latter being conceived to be obsolete after just one season (cit. “I really don’t care what the current style is. If something has a good design it will always be in style. I tend to look for things that are more expensive but which I know will be more durable.” Holt, 1998).

Being of excellent quality does not mean that a luxury product should be perfect (Bastien & Kapferer, 2012): it should have some flaws, as imperfections and fragilities contribute to the luxury experience; luxury is not artisanal, it is not necessarily all handmade: it must incorporate the latest technologies when the product category requires it, e.g., a Ferrari, but should also have a human component or “touch”.

2.2.3.3. *Uniqueness, Exclusivity, Rarity*

Perceived uniqueness³, exclusivity and rarity of a product enhance a consumer’s desire or preference for it (Wiedmann et al., 2009). This is all the more true if the individual considering acquiring the exclusive, unique, rare product is moved by a strong need for uniqueness, because scarce products have been found to provide a vehicle for establishing one’s specialness (Snyder, 1992). As also Veblen (1899) reminds us, luxury should be rare, because what is common is within the reach of many and luxury, by definition, should be hardly accessible. In developing the Brand Luxury Index, Vigneron & Johnson (2004) show how preciousness and exclusivity are part of the same uniqueness dimension of luxury.

³ While Wiedmann et al. (2009) build their conceptual framework including the uniqueness value in the functional dimension of luxury, I would argue that uniqueness is rather linked, more intuitively, to its social dimension, as one can understand from Leibenstein (1950).

Luxury products' rarity can be either natural or induced: in the first case, I can cite the example of diamonds; their objective and natural rarity determines their preciousness, and in turn their expensiveness. In all other cases, in which rarity is not the result of the scarcity of materials employed in the creation of the luxury product, exclusivity and rarity is a result of the "anti-laws of marketing" as listed by Bastien & Kapferer (2012) and as reported in section 2.2.1. In the latter case, a good example might be the one of Ferrari cars, which are purposely produced in about 6000 units per year, since this stresses the perceived exclusivity and rarity of the product.

2.2.3.4. Prestige

Some individuals might find the primary utility of a luxury product in its symbolic value that gratifies the craving for status rather than in its functional ability to satisfy physical needs (Sung et al., 2015). Some authors refer to this as "conspicuousness", although this word is not always used with the same meaning in the literature: for example, while Vigneron & Johnson (1999; 2004) refer to conspicuousness or to a "conspicuous value" as the social status associated with a brand thanks to its high prices, as also Veblen (1899) might have intended it, Han et al. (2010) use the word to indicate how prominent a brand logo is on a luxury item. A product with high brand prominence is a product on which the logo of the brand is very visible or, as the authors define it, very *loud*. To be clear, I will be using "prestige" to refer to "conspicuousness" as intended by Vigneron & Johnson (1999; 2004), i.e., high social status or societal ranking associated with a brand (Steenkamp et al., 2002), "prestige image" to refer to the perception of prestige and "brand prominence" to express the concept of conspicuousness as described by Han et al. (2010), i.e., the degree to which a brand logo is visible and ostentatious.

Wiedmann et al. (2009) call this dimension of luxury "social value" and then further break it down in "conspicuousness value" and "prestige value" in their conceptual framework. From what I understand of the authors' descriptions of these two sub-dimensions, they coincide, so I will also consider what is called "social value" of luxury in the article by Wiedmann et al. (2009) as "prestige". Conceptually, "brand prominence" (i.e., brand conspicuousness) is one of the means through which consumers express their status.

2.2.3.5. *Expensiveness*

While Vigneron & Johnson (1999; 2004) consider “Expensiveness” as part of the status dimension, other authors consider it a dimension on its own (Dubois et al., 2001; Wiedmann et al., 2009).

Wiedmann et al. (2009) include it in the concept of luxury as a component in itself as Price Value, which also coincides with the Financial dimension of the concept. Although it is likely for the price dimension and the prestige dimension to be correlated, the two are distinct. A product could be very expensive but fail to be perceived as a status symbol or it might effectively signal status and not be expensive (the latter probably not being very likely).

All the literature on luxury agrees that luxury products should be expensive, because other product attributes are supposed to support the need for a high price: if a luxury product is not functional or of the highest quality, then it cannot make claims to a higher price (Nwankwo, Hamelin, & Khaled, 2014). For many individuals, the very high price of a luxury product is considered a logical consequence of the perceived excellent quality. Therefore, many see a high price as an intrinsic characteristic of luxury and its cost becomes acceptable because of the longevity and the superior quality it is supposed to bring. A high price can even generate a feeling of comfort, well-being and security. On the contrary, when standards of excellent quality are not met, prices are quickly perceived as excessive or extravagant (Dubois et al., 2001).

What counts is not the absolute price, but the gap between the premium options in the product category and the luxury ones (Bastien & Kapferer, 2012). Veblen (1899) finds that expensiveness of possessions enhances beauty and determines social status, Vigneron & Johnson (2004) observe that many consumers use price as an indicator of prestige, and several authors report price being an indicator of quality (Lichtenstein et al., 1993; Rao & Monroe, 1989; Erickson & Johansson, 1985; Lichtenstein, Bloch, & Black, 1988, etc.). Prestige pricing itself is defined as setting a high price to suggest high quality or high status (Perreault & McCarthy, 1999; pp. 526-528).

Marketers understand that a common way to add a snob appeal to an otherwise product of equivalent functionality is to attach to it a high price (Eastman & Goldsmith, 1999). Consumers will pay a higher price for a functionally equivalent good because they crave the status brought about by such material displays of wealth (Bagwell & Bernheim, 1996). Higher

prices themselves make consumers feel superior as one of the few who can afford to buy the product (Garfein, 1989).

However, as Bastien & Kapferer (2012) point out several times, it is not the expensiveness of a product that determines whether it is luxury or not, but rather it is the luxury attributes that determine the expensiveness of the product. In the literature, products that have higher demand for higher prices are said to be characterized by a Veblen effect (Leibenstein, 1950). I will discuss this dimension further when addressing the issue of pricing of luxury goods in section 2.2.5.

2.2.3.6. Hedonism

Another core dimension of luxury concerns the hedonic value associated with the self-indulgence of owning and consuming luxury products. Hirschman & Holbrook (1982) have theorized the hedonic value (i.e., giving pleasure both at an emotional and sensory level) that certain products carry in addition to their functional utility and it is commonly agreed upon that luxury products are supposed to carry such an emotional and sensory value (Berthon et al., 2009; Vigneron & Johnson, 1999, 2004; Wiedmann et al., 2009). Hagtvedt & Patrick (2009) conceptualize luxury brands as those with “premium products that provide pleasure as a central benefit and connect with consumers on an emotional level”. According to them, the delivery of emotional benefits is the primary benefit the consumer should obtain when consuming luxury products. This reflects a shift in the literature from a focus on conspicuous consumption to a more and newer individual-oriented model, in which consumption of luxury is a holistic and personal experience (Atwal & Williams, 2009). Schwarz & Clore (1983, in Fiedler & Forgas, 1988) make the distinction between affect-rich and affect-poor products, the former being evaluated spontaneously on the basis of the feeling they evoke, the latter being more likely to be evaluated on the basis of more rational and objective criteria. According to the type of attribute highlighted, a product could be perceived as more affect-rich (i.e., hedonic) or affect-poor (i.e., mainly functional; Hagtvedt & Patrick, 2009). Luxury products should be treated as affect-rich.

2.2.3.7. History, heritage, tradition

Although not considered by some of the main studies that have been conducted to identify the components of the concept of luxury (Vigneron & Johnson, 1999, 2004; Wiedmann et al., 2009) as a separate dimension, Bastien & Kapferer (2012) and Dubois et al. (2001) discuss

how important it is for a luxury brand to be able to recreate a perpetual link to its heritage. Bastien & Kapferer (2012) also highlight how it is not essential for the brand to be old: of course, new luxury brands can still be created and they can be successful. What the two authors mean, is that, because luxury brands respond to consumers' dreams, it is important to create a story to be told, a universe from which the brand can draw its legitimacy and its imagery. According to them, a brand that fails to develop this component of the concept of luxury will be perceived at best as a premium brand, and not as luxury. This dimension is related to what Berthon et al. (2009) present as the ontological dimension of luxury (from the ancient Greek *ὄν*, being, and *-λογία*, study, theory) as opposed to the transient nature of fashion: luxury is made to endure, not only with respect to quality, but also with respect to style and relevance throughout time. It should be timeless (cit. "I like styles that last forever and Church shoes will always be around [...] they look serious and timeless." Dubois, Laurent, & Czellar, 2001).

2.2.4. Consumers' traits and motivations to engage in luxury consumption

The literature has also focused on the several motivations that might push consumers to engage in the acquisition and consumption of luxury goods. As I am going to report, not all consumers purchase luxury goods for the same reasons: the description of society and of motivations to engage in conspicuous consumption as described by Veblen (1899), might have been relevant more than a century ago in the USA, and might somehow still apply nowadays to some individuals. However, the literature shows how other motivations might have become more relevant with, for example, increases in cultural capital (Berger & Ward, 2010; Han et al., 2010) or in need for conformity (Kastanakis & Balabanis, 2012).

As previously mentioned, consumers are heterogeneous in their preference for price endings (Baumgartner & Steiner, 2007; Macé, 2012). Together with demographics, identifying the reasons why one engages in luxury consumption could explain such preferences. For examples, if odd prices have the same lower-quality connotation when applied to luxury goods as they do when they are applied to consumer goods, we could hypothesize that individuals who rely heavily on price as an indicator of quality (i.e., they score high on the quality-schema construct) should perceive that the quality of an odd-priced luxury item is even lower than what an individual who does not rely on price as an indicator of quality would perceive. The reason why I therefore present personal motivations to engage in luxury

consumption is that I will test whether these can be moderators of the impact that price endings might have on different product image facets.

It is important to distinguish the dimensions of the luxury concept and how they are perceived and the motivations that push individuals to purchase and consume luxury: the two do not coincide. Some authors mistakenly use the two interchangeably. For example, Wiedmann et al. (2009) set out to investigate motivations to engage in prestige consumption, when they analyze the components of the concept, instead; on the contrary, Vigneron & Johnson (1999) lay the ground to identify the components of the luxury concept in their next paper (2004), but end up providing a description of types of luxury goods' consumers, without, at any point, distinguishing the two levels of analysis. The dimensions of the luxury concept, are product or brand-dependent, while the motivations that push individuals to engage in luxury consumption are individual-dependent.

The literature usually distinguishes between personal oriented and interpersonal oriented motives of consumption. Search for hedonic and quality attributes are both seen as personal-oriented motivations for consumption of luxury goods (Vigneron & Johnson, 1999), while need for uniqueness, for conformity and for status are considered interpersonal motivations, as they refer to the social dimension of consumption. Motivations to engage in luxury consumption need not be mutually exclusive, but they can co-exist. For example, a consumer can buy a luxury product both because it makes her feel unique and because she is looking for superior quality.

In the previous paragraphs I described the main components of the concept of luxury. In the next few pages I present the motivations that push individuals to engage in luxury consumption, which I will later use as proposed moderators of price endings' effects on perceptions of luxury, as I explain in more detail in the conceptual framework developed in Chapter 5.

2.2.4.1. Interpersonal motivations to consume luxury goods

Need for uniqueness vs. need for conformity

Although need for uniqueness and need for conformity are often treated as two different constructs, the two can be seen as two extremes of the same continuum. On the one hand, the need for uniqueness is defined as an individual-level trait that causes desire to possess unique

products, which provides differentiation from other people. High-uniqueness consumers are likely to prefer distinct product designs, with attributes that define the person as different from members of his or her reference group (Fromkin & Snyder, 1980). They are more drawn to scarce products than low-uniqueness consumers; exert more effort to own innovative products. They may decrease consumption of a product if it becomes commonplace, in line with a snob or reverse-bandwagon effect (Cheema & Kaikati, 2010). Similarly, Kastanakis & Balabanis (2014) report how consumers with a high need for uniqueness look for dissociation from most luxury consumers to acquire status. These consumers are, by definition, a minority and use scarce, new or unknown luxury to create distance from others and are likely to expect luxury products to also have a restricted distribution (Dubois et al., 2001).

On the other hand, consumers who have a need for conformity, moved by a bandwagon effect, purchase luxury products to get “into the swim of things”, to conform with the individuals they would like to associate with. By so doing, they hope to appear as “one of the boys” (Kastanakis & Balabanis, 2012; Leibenstein, 1950). In this case, we are dealing with individuals who want to associate with the majority of luxury consumers, and take part in the affluent lifestyle. In economic terms, there are positive network externalities on the individual’s utility, on top of the utility derived from the product’s intrinsic qualities. At the same time, they want to dissociate from the less affluent. They want to acquire status through assimilation, rather than through contrast. Brands are responding to this consumer behavior by developing “masstige” strategies (i.e., mass + prestige, applying elements of a prestige strategy to products that are sold to large audiences) to find a compromise between 1) maintaining their perceived exclusivity and 2) growing their revenues (Kastanakis & Balabanis, 2012). By bandwagon consumption, we therefore refer to the extent to which the demand for a commodity is increased due to the fact that others are also consuming that commodity.

In the literature, it is accepted that both snobbish and conformist motives are typical of luxury goods consumption (Kastanakis & Balabanis, 2012, 2014; Vigneron & Johnson, 2004) and that they can both give rise to the so-called Veblen effect at the aggregate market demand level, i.e., an increase in demand due to a price increase (Bagwell & Bernheim, 1996; Dubois et al., 2001), implying that snob and Veblen motives or Bandwagon and Veblen motives can co-exist in one individual, although some authors in the literature seem to suggest that the three effects are mutually exclusive (Leibenstein, 1950; Vigneron & Johnson, 1999).

Consumers whose purchase intention increases with a product's price and consequent rarity are known in the literature as *snob* consumers. Consumers who, on the contrary, need to be reassured about their purchase by the conformity to social groups' patterns of consumption are known in the literature as *bandwagon* consumers (Leibenstein, 1950).

Consumption-related need for status and preference for brand prominence

According to Han et al. (2010) consumption-related need for status is the tendency to purchase goods and services for the status or social prestige they confer to their owners. Consumers can be classified according to the extent to which they seek to gain prestige by consuming luxury goods. Consumers who are mainly motivated by consumption-related need for status are not far from the stereotypical representation that Veblen (1899) gives of the leisure class at the end of the 19th century in the USA. However, nowadays luxury consumption is no longer exclusively linked to status-seeking (Dubois & Laurent, 1996); but it is thought to revolve more around the need for experience and self-indulgence (Danziger, 2005), especially in Western countries where luxury consumption has been established for a few decades. In general, it is believed that in contemporary Western societies, individuals who feel the need to show their status are the so-called *Nouveaux Riches* or *Parvenus* (Berthon et al., 2009; Han et al., 2010) and they apparently do so through the use of very obvious signals, i.e., the previously discussed brand prominence, the very loud luxury products. As Han et al. (2010) show in their research, *Parvenus* are those consumers of luxury goods that engage in the consumption of very loud products because they want to show to other consumers of luxury goods that they can too afford to spend big sums of money, that they belong to the same "social class". However, because they are "nouveau riches" and they are not accustomed to the habits of traditional consumers of luxury goods, they do not have the cultural capital to realize that the individuals they want to associate with (i.e., the *Patricians*, the traditional upper class) prefer to own and consume much more discreet luxury products, which only they can decipher and interpret. Paradoxically, *Parvenus*, by engaging in the consumption of very loud products, are telling *Patricians* that they are not like them, although they are still dissociating themselves from those individuals who either cannot afford to engage or are not interested in status consumption. So, we could say that also the so-called *Patricians* engage in status-consumption, although they do so through much subtler signals. It is not the consumption-related need for status they are lacking, but the preference for loud signals; they prefer, in other words, engaging in what Berger & Ward (2010) define

“inconspicuous consumption”, i.e., the use of products with subtle signals that are only observable by individuals with the requisite knowledge to decode their meaning. If they were not moved by a consumption-related need for status, they would probably not purchase luxury at all.

2.2.4.2. Personal-oriented motivations

Individuals who have the cultural capital to appreciate intrinsic qualities of luxury products on top of the status these confer are normally consumers high in cultural capital: hedonic consumption and quality appreciation require education, knowledge and some sort of initiation. Moreover, the competence needed cannot be acquired overnight, but requires time and needs to be cultivated, which means that these attributes are more likely to be appreciated by habitual consumers of luxury goods (Dubois et al., 2001).

Hedonic consumption

Dubois & Laurent (1994) find that, being the emotional value an essential characteristic of the perceived utility acquired from luxury products, “a vast majority [of the observed sample] subscribes to the hedonic motive”, by agreeing to the item "One buys luxury goods primarily for one's pleasure" and refutes the snobbish argument. Vigneron & Johnson (1999) refer to the hedonic motivation for consumption when consumers value the perceived utility acquired from feelings and affective states aroused by a luxury product. They also point out that, if consumers are mainly interested in their own feelings and thoughts, they should pay less attention to price as an indicator of prestige.

Dubois et al. (2001) find that, for consumers who place a high value on the hedonic benefits of luxury consumption, also the shopping experience in itself can be an important source of value. The authors report the atmosphere in the shop, the décor, the background music, the way products are displayed and the interaction with salespeople as important drivers of value. The shop in itself is a luxury entity and should provide similar benefits to those provided by the products: luxury products should not only be beautiful, but also pleasant to hear (Lageat et al., 2003), to smell or to touch (Dubois et al., 2001).

Consumers who place a high value on the hedonic dimension of luxury, ascribe much importance to their own emotional fulfillment which represents one of the main benefits, if not *the* main benefit, they draw from luxury consumption (Nwankwo et al., 2014).

Search for excellent quality

Some consumers buy luxury goods to be reassured about the quality. Vigneron & Johnson (1999) define this group of consumers as “perfectionists”⁴. Compared to consumers who place the highest value on hedonic benefits, perfectionists are more function-oriented (we have seen how quality is usually considered a sub-dimension of the functionality facet of luxury, please refer to section 2.2.3.1). People influenced by the quality dimension of luxury may perceive that luxury brands have superior characteristics compared to non-luxury brands. The cost of malfunction is too high to buy anything but the best (Allsopp, 2005).

Clearly, most consumers will ascribe to the excellent quality motivation to justify the purchase of a luxury good to a certain extent. It is difficult to imagine that somebody would be openly happy to spend large amounts of money for a product that is known to be of poor quality. However, some consumers will be more quality oriented than others, meaning that they might not be interested in the interpersonal motivation of luxury consumption at all, and simply engage in luxury consumption to benefit from higher levels of quality, to be reassured about durability, reliability, about a product that will perform its function perfectly for a prolonged period of time (Dubois et al., 2001).

Price-quality schema and luxury-quality schema. Individuals often infer product quality based on the price cue, i.e., the higher the price, the higher the perceived quality by the consumer. In the literature, this is referred to as *price-quality schema*⁵ (Lichtenstein et al., 1993; Rao & Monroe, 1989). Similarly, individuals can also be influenced by the fact that a product is offered by a brand commonly considered as “luxury” to infer higher levels of quality (Vigneron & Johnson, 2004); for similarity with the price-quality schema, we could refer to this as “luxury-quality schema”. In turn, individuals often use perceived quality (i.e., quality image) to infer overall prestige of the product (Vigneron & Johnson, 1999). As also Bastien & Kapferer (2012) point out, the quality of a luxury product is the result of a series of characteristics, such as applied technology, engineering, design and craftsmanship. At the same time, improving the quality of a product authorizes brand managers to increase the

⁴ The authors classify search for quality as a personal motivation in their paper in 1999 but then classify it as non-personal, in the sense of object-oriented (not social oriented) in their paper in 2004.

⁵ Price-quality schema: the tendency across product categories to believe that the level of the price cue is related positively to the quality level of the product is referred to in the literature as *price-quality schema* (Lichtenstein et al., 1993)

price: the marginal increase in price can of course be greater than the marginal increase in costs incurred to improve product quality (Kumcu & McClure, 2003; Neiertz, 1991).

2.2.4.3. Several segmentations of consumers of luxury goods

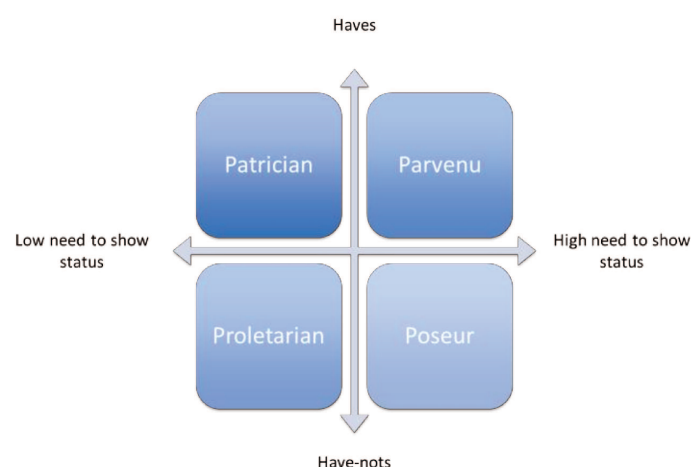
In the previous section, I presented the main characteristics of consumers of luxury goods that are consistently recurring in the literature. When combining different motivations, it is possible to identify segments within the large population of consumers of luxury goods. In this section I will briefly present some segmentations that have been proposed in the luxury literature, which are often based on different possible combinations of the previously described motivations to engage in luxury consumption.

No segmentation is necessarily better than the others: each one of them focuses on various aspects of luxury consumption. While it is not possible to combine all of them in one single theoretical framework, it is possible to draw from them to interpret the results of the cluster analyses I conducted to profile the respondents of my empirical studies. The idea is that, since consumers are heterogeneous in their preference for price endings and not all luxury consumers are the same, it should, a priori, be possible to identify a segment of consumers of luxury goods who prefer odd pricing, another who prefers even prices, etc.

Segmentation based on wealth and need to show off status - Han et al. (2010)

Han et al. (2010) propose a segmentation that is based on two main axes: need to show off status (although they mistakenly call it need for status) and wealth. By crossing the two dimensions, the authors identify four quadrants, as shown in the following graph (Figure 2).

Figure 2 - Segmentation proposed by Han et al. (2010)



Patricians are those consumers that are wealthy (*haves*) and do not like to show off status with obvious signals. They are presumably longtime consumers of luxury goods, possibly because they come from families that have been wealthy for a few generations and they therefore have the cultural capital required to distinguish luxury products regardless of their logo being prominent or not. They therefore tend to consume quiet luxury goods, which only their peers can distinguish from non-luxury products.

The authors also find that quiet luxury goods are usually the most expensive ones, meaning that Patricians are willing to pay a premium for low brand prominence. On average, as price goes up, brand prominence goes down: for example, a centimeter more in the size of the logo for a Mercedes, corresponds to 5000 euros less in price and, as far as Gucci handbags are concerned, one centimeter more in the logo corresponds to 122 dollars less in the price.

Parvenus are consumers that are high in financial resources (*haves*) and high in need to show off status. Because they lack the cultural capital to identify a luxury product unless its logo is prominent, they usually prefer loud products, on which the brand is very easily seen and recognized. By purchasing this kind of products, they want to state that they belong to the group of individuals high in financial resources and therefore with status. However, because Patricians prefer quiet products, Parvenus fail to associate with them. They are however successful in dissociating themselves from consumers who do not consume luxury goods, be it because of lack of financial resources or of interest.

Poseurs are consumers that try to show off status, but lack the financial resources to acquire authentic luxury goods (*have-nots*). They turn to the consumption of counterfeit products, because these imitate real luxury and they hope one will not notice their possessions are counterfeits. They mimic the Parvenus, since they lack the cultural capital to appreciate the quiet luxury consumption of the Patricians. The authors also find that loud luxury products are most likely to be copied illegally; therefore, Poseurs will most likely buy loud counterfeit products.

Proletarians are individuals who are not interested in showing off their status and lack the financial resources (*have-nots*) to do so through the consumption of luxury goods. They will not buy luxury goods and they will not try to mimic other consumers with counterfeit products.

Excursionisms - Dubois & Laurent (1996)

The previous segmentation proposed by Han et al. (2010), does not seem to allow that an individual move from one category to another occasionally and then go back to her original category. Dubois & Laurent (1996) define the segment of the *Excursionists*, for whom the acquisition and the consumption of luxury goods is only occasional, an exceptional moment, in contrast with their daily life. As Dubois & Laurent (1996) point out how it used to be much easier to identify and profile luxury goods' consumers in the past: individuals either had the resources to be one or not, either they were affluent or not. Since excursionists' access to luxury consumption is sporadic, this segment is much harder to profile. In terms of the four segments identified by Han et al. (2010), the idea here is that a Proletarian, i.e., an individual normally not manifesting interest in luxury, could occasionally purchase a luxury product, like Parvenus or, less likely like Patricians. To another extent we could refer to the phenomenon described by Silverstein, Fiske, & Butman (2008), according to whom middle-market consumers selectively trade up to better products and services and trade down in others to pay for their premium purchases. This would be the example of a person who travels with a budget carrier but stays in a five-star hotel or shops at WalMart and drives a Mercedes (Yeoman & McMahon-Beattie, 2006).

The authors suggest that it is situational factors, together with availability of economic resources (greater than those of individuals who are completely excluded from luxury consumption and lower than those of the affluent) that trigger the occasional consumption. It seems that *excursionism* is a matter of degree and frequency of consumption. They also observe how a self-gift situation rarely triggers this behavior, probably due to a feeling of guilt in spending important amounts of money on self-indulgence.

Segmentation based on time relevance of luxury and expertise required to appreciate it - Berthon et al., (2009)

Although not tested empirically, another interesting classification of consumers of luxury goods is that of Berthon et al. (2009). They identify two axes of analysis: they create a matrix by crossing an ontology axis, which opposes transient to enduring consumption, and an aesthetics axis, which opposes novice to expert consumers, as shown below (Figure 3).

The *Postmodern* consumer engages in transient consumption for which there is no need for connoisseurship or expertise. This way of consumption refuses cultural distinctions and

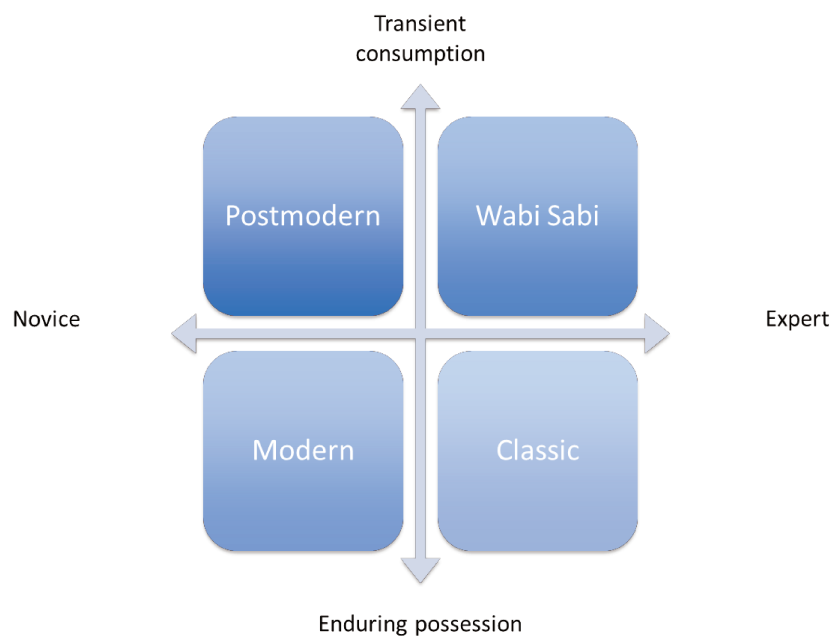
favors the latest fashion, which, by definition, is constantly changing; it rejects hierarchies of taste or refinement.

The *Wabi Sabi* consumer is an expert and favors the transient consumption, i.e., of products that are not made to last, but to be enjoyed in the ephemeral experience, like it would be the case for a good wine. In this case, luxury is the deep taste of the moment.

The *Classic* consumer, like the Wabi Sabi, is an expert, but engages in enduring consumption. For her luxury is not consumerism. She has developed an education and aesthetic discernment to appreciate the superior quality of luxury products and has high financial resources.

Finally, the *Modern* consumer is one that engages in democratized luxury. Like the postmodern consumer, she does not possess the expertise to appreciate luxury, but purchases luxury goods mainly for the status they confer. The Modern consumer's consumption is more enduring than the one of Postmodern consumers.

Figure 3 – Segmentation proposed by Berthon et al. (2009)



Overall, we could argue that there are some parallelisms between the segmentation proposed by Han et al. (2010) and the one by Berthon et al. (2009): although the latter authors suggest two completely different axes of analysis, it seems that Classic and Wabi Sabi consumers are a further sub-classification of “Patricians”, while Modern and Postmodern are a sub-classification of the group called “Parvenus” in the former paper. Furthermore, Classic and

Wabi Sabi consumption need not be mutually exclusive, nor do Modern and Post-modern, so it is plausible to imagine the same “Patrician” consumer engage in both enduring possession of classic luxury products and in the ephemeral consumption of exquisite non-durable luxury products or experiences. By the same token, a “Parvenu” can very well both engage in the ever-changing acquisition and consumption of fashion products and at the same time purchase some prominent luxury products that will be more durable which allow them to claim their status.

Segmentation based on the level of democratization of luxury - Dubois, Czellar, & Laurent (2005)

The three authors present a segmentation based on the dimensions of Democratization, Elitism and Distance, which is most likely to apply to all Western societies. The three segments share the opinion that luxury products are at the same time hedonic and symbolic and they all agree to some extent that luxury is not necessarily useless.

The *Elitists* propose a traditional view of luxury as appropriate only for a small, refined élite with the appropriate education and expertise to appreciate luxury goods and services. For them luxury is and should inevitably be expensive and they believe that luxury cannot be mass-produced and should be available in only selected distribution channels (surely not in the supermarket).

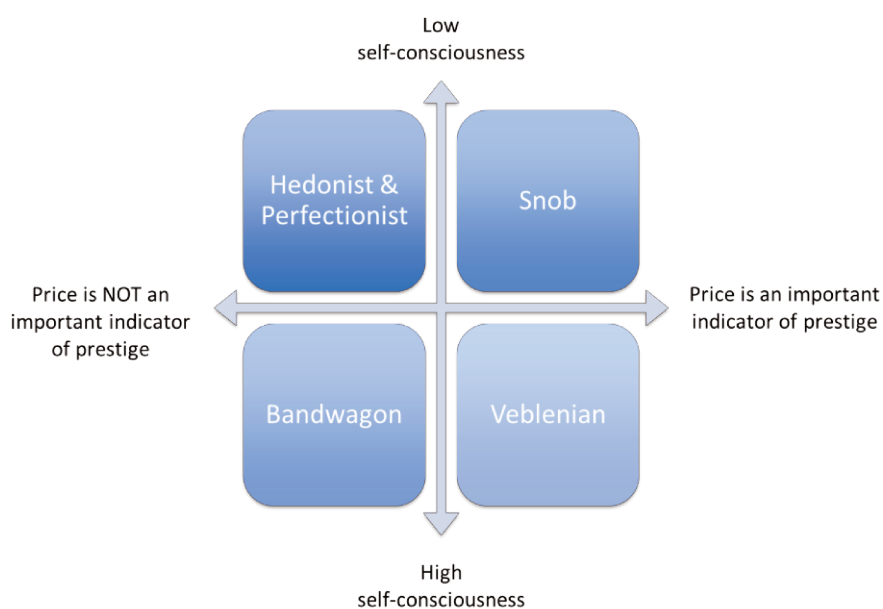
Respondents adopting a more *democratic* attitude towards luxury state that a larger audience has access to it, and this is mainly because for them luxury begins at a lower price threshold. They have a more open-minded attitude towards luxury and they believe that everyone should be able to access it. Luxury is therefore not reserved for a small élite, and for them no special education is needed to fully appreciate it. Luxury is not synonymous of good taste and it is not a means of differentiation from others, therefore it is not necessarily very expensive. A product can be mass produced or sold at the supermarket and still be considered luxury.

Finally, the respondents that are classified as *distant* from luxury state that they do not belong to its universe and it does not concern them. They are not attracted to luxury and they do not dream of owning such products. They therefore have a more negative view of luxury and they are the most likely to believe that it is useless. This group corresponds conceptually to the segment of the Proletarians, as described by Han et al. (2010).

Segmentation based on segmentation and importance of price - Vigneron & Johnson (1999)

The two authors propose a segmentation resulting from the crossing of two axes: on the one axis they oppose low self-consciousness to high self-consciousness (i.e., does the consumer purchase and consume luxury mainly for herself or to find her place in the society? Does she need the approval of society to be satisfied with a luxury good purchase or does she rely more on her private judgment?), on the other they contrast various levels of importance of price as an indicator of prestige.

Figure 4 - Segmentation proposed by Vigneron & Johnson (1999)



Consumers who are more private-oriented and therefore have low levels of self-consciousness are those who purchase luxury for its intrinsic characteristics, as discussed in section 2.2.4.2. The authors call them *Hedonists* if they place the highest value on hedonic characteristics, such as aesthetics of the product, smell, sounds or emotions and feelings it arouses, while they call them *Perfectionists* if they purchase and consume luxury goods simply because this means having access to the best quality (they are therefore more function-oriented than emotion-oriented). Hedonists and Perfectionist therefore do not consume luxury products to show off their status; they have an expertise which allows them to really appreciate luxury and therefore do not need to rely on the price as an indicator of prestige. They will rather rely on their own opinions.

Vigneron and Johnson (1999) classify *Snob* consumers as individuals who consume luxury goods for personal-oriented motives. I believe that consumers who search for extreme

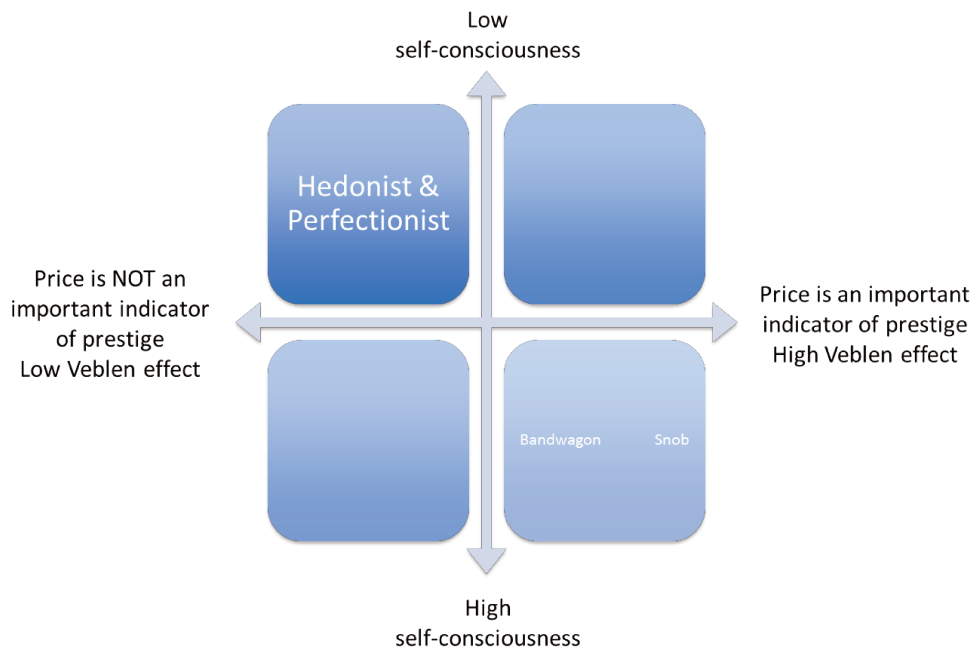
uniqueness in a product and for a high price just to differentiate themselves from the masses are, on the contrary, rather public-oriented, not in the sense that they need public approbation, but they still enjoy others noticing their uniqueness. Nonetheless, the authors stress the fact that for them price is an important indicator of prestige, and indeed snobs are those consumers who will abandon a product if it becomes too commonplace because it is too accessible pricewise (Cheema & Kaikati, 2010).

Veblenian consumers, i.e., individuals who mainly engage in luxury goods consumption for the sake of status are, by definition, more public-oriented and they strongly value price as an indicator of prestige. These consumers are close to the leisure class described by Veblen (1899) and also to Parvenus, as described by Han et al. (2010). In fact, they rely so much on price as an indicator of price, because they lack the expertise and the knowledge to appreciate luxury products for their intrinsic qualities.

Finally, Vigneron and Johnson (1999) identify *Bandwagon* consumers as individuals who are public-oriented, meaning that they strongly need the approbation of their groups of reference to be sure about what luxury products to purchase and consume. They are so public-oriented, that they rely less on price as an indicator of prestige, because, as long as other people are using a product, they follow the lead.

In my opinion, this classification is not conceptually correct: I interpret both Snob and Bandwagon as status-conscious consumers (I would therefore say that both are public-oriented) although the former state their status by differentiation and the latter by association. Moreover, I see both Snob and Bandwagon consumers as affected by a Veblen effect: they both are attracted to higher prices, although, of course, Snobs more than Bandwagon consumers. In my interpretation of the three constructs, the Veblenian motivation is not mutually exclusive with the snobbish and bandwagon ones. On the contrary, I see them as co-existing and the Veblenian effect is, for me, the extent to which the consumer relies on price as an indicator of prestige (i.e., it corresponds to the horizontal axis of the importance of price as indicator of prestige) . Therefore, if I could re-draw the last graph, it would look like the following Figure 5.

Figure 5 - Elaboration from Vigneron and Johnson (1999)



Segmentation by Boston Consulting Group and Fondazione Altgamma (2014)

For the sake of exhaustiveness, I also report the segmentation provided by the Boston Consulting Group and Fondazione Altgamma (2014) as found in Chandon et al. (2016), which reflects the fact that the number of millionaires expanded (16,3 million in 2014, growing 2,6 million a year according to BCG). The emerging aspirational masses (330 million individuals) account for 25% of total luxury spending (Chandon et al., 2016).

The advantage of this segmentation (illustrated in Table 9 below) over the others is that it provides information about how many consumers belong to each group and on how much they spend (in 2014), which is clearly extremely valuable information for practitioners. However, it lacks a theoretical framework and the article in which it is presented does not provide further details on the identified segments, so it will be of limited use for me in profiling the respondents of my studies.

Table 9 - Segmentation by BCG and Fondazione Altgamma, 2014 (Chandon et al., 2016)

Segment	How many?	How much?	Where?	Additional description
Absolute luxurers	2 mln	/	European and US elites	Refined and elegant connoisseurs who have grown up in luxury
Megacitiers	2 mln	They spend about 20k€ a year on luxury	They live in NYC, London, Paris, etc.	25 to 35 yrs old
Socialwearers	700k	They spend around 15k€ a year on luxury	Emerging markets, particularly in China and in Brazil	They are after quality, sustainability, “made in” excellence; they look for emotional connection with the brand, and become very loyal once they have been conquered
Experiencers	3 mln	They spend about 12k€ a year on luxury	/	45 to 50 yrs old, discreet and sophisticated, they consumer luxury in the form of holidays or first class dinners
Little Princes	1,5 mln	They spend 10k€ a year on luxury	/	Aged 18 to 25 yrs old generation Z, young consumers born to rich families, used to playing with designer toys. Impulsive, always connected, longing for novelties, colors, attracted by brands, daring aesthetic designs
Fashionistas	3 mln	They spend 8k€ a year on luxury.	/	Mostly women between 35 to 40 yrs old; very well informed about what is going on, buy bags, clothes shoes, even when this means not being able to go on holiday or to a restaurant
Status seekers	2 mln	They spend 8k€ a year on luxury.	Mainly from Asia	Between 35 and 40 yrs old; live on a stage and logos must be very visible on what they wear: they can’t do without a showy accessory. They do not like to experiment and go for well-established fashion brands since others’ approval is essential

2.2.5. Pricing of luxury goods

In this section I will report the scarce literature that deals with pricing of luxury goods. In general, the latter is under-investigated in the academic literature, because the common belief sees consumers of luxury goods as insensitive to price and unaffordable prices as a luxury-defining attribute: luxury must be expensive.

As of today, economics cannot provide a unified theory to explain such high prices for luxury goods. Smith (1776), while defending the value of labor as main explication for a product’s price, distinguishes between the usage value, linked to the utility of a product, and its exchange value, i.e., a product’s value on the market. Recognizing the dissociation between the two, he formulates the paradox of value: why does water, that is essential to survival, cost little money, when diamonds, whose utility is inexistent, have a huge exchange value? Several authors have tried to solve this paradox, Delpal (Le luxe comme gageure pour la théorie économique in Assouly & Bergé, 2011) cites Condillac (1776) as the author providing

the most reasonable explanation: the price of necessary things is very low compared to the price of superfluous things, because everybody is interested in paying a just, fair price for them. However, the price of unnecessary things is very high because even those individuals who buy them do not need to estimate their value precisely (presumably thanks to the abundance of their financial resources). According to Condillac, it is the estimate that consumers make of a product's value that determines its value and therefore whether they will accept to pay the price or not.

Modern authors recognize, too, that the most important factor when analyzing pricing is indeed perceived value (Nimer & Shapiro, 1975; Sweeney & Soutar, 2001; Zeithaml, 1988). Perceived value can be regarded as a “consumer's overall assessment of the utility of a product (or service) based on perceptions of what is received and what is given” (Zeithaml, 1988). Zeithaml (1988) argues that some customers perceive value when there is a low price, others perceive value when there is a balance between quality and price. The concept of perceived value is therefore not the same for all consumers. In the case of luxury consumers, the perceived value should include also an appreciation for the hedonic benefits, such as intangibles of style, uniqueness, occasion and experience (Allsopp, 2005) that is hard to quantify. As we have seen, indeed some consumers might even perceive a greater value as the price goes up, because being able to pay that price will make them feel unique and exclusive. Just like for any other product category, consumers of luxury goods will therefore buy a luxury product when the price they must pay is not greater than the product's perceived value.

Practical recommendations on how to set prices. Bastien & Kapferer (2012) give several recommendations concerning pricing of luxury goods, which are the result of their experience as managers and consultants. They suggest, for example, that when dealing with luxury the price customers imagine should be greater than the actual price and the average price of a product range should constantly be increased over time by adding new items that are more expensive than the current average (Bastien & Kapferer, 2012). The strategic focus of a luxury brand should never be on reducing costs, but on creating added value, as also suggested by Kumcu & McClure (2003). Since it is suggested that price be increased over time, it is best to start with a price that is at the bottom of the legitimate price range, then increase it gradually, of course always improving the product to support the increase in price. This finds its justification in the literature because it has been found that products that are more expensive are also perceived as of better quality (Rao & Monroe, 1989), more unique

(Amaldoss & Jain, 2005; Verhallen & Robben, 1994) and as a better status symbol (Bagwell & Bernheim, 1996; Parguel, Delécolle, & Valette-Florence, 2016; Vigneron & Johnson, 1999). For all these reasons, Bastien & Kapferer (2012) remind us that if a brand applies price reductions during sales seasons then it is not true luxury: a reduction in price will impact negatively perceived quality, perceived uniqueness and perceived status. Therefore, intuitively, setting odd prices in a luxury context should be counterproductive, since odd prices are known to be perceived as reduced prices, and also to have a direct negative effect on perceived quality and prestige.

Price display. Because of the supposed price insensitivity of consumers of luxury goods, there is general consensus that luxury brands should never display prices, be it in advertising campaigns or at the store: if they ask for the price is because they cannot afford it (Bastien & Kapferer, 2012; Parguel et al., 2016). After all, if customers are not price insensitive, what better way is there to make them insensitive than not displaying prices at all? Surprisingly, recent research shows that there is at least one good reason to display prices: when displayed, prices will play a positive role in enhancing perceived overall luxury through perceived quality and perceived uniqueness for the most accessible tier of luxury (Parguel et al., 2016).

Should pricing be based on market research? Nonetheless, some authors (Bastien & Kapferer, 2012; Neiertz, 1991) suggest that pricing managers should not bother to conduct market research to discover the willingness to pay of their consumers, but that they should determine prices in a normative manner. Also, luxury firms should not care about prices applied by the competition, because, according to Bastien & Kapferer (2012) luxury is not comparative, but superlative. Lastly, always according to the same authors, luxury firms can afford to set prices that go well beyond covering costs of production. Overall, it seems that the traditional pricing approaches that follow the 3C's (Cost, Costumer, Competition), usually described in marketing text books (Kotler & Keller, 2011; Sarin, 2013) should not be relevant.

On the one hand, they recommend conducting extensive market research to determine the right price for a *premium* product, to take into account willingness to pay for it and its positioning compared to competitors. Bastien & Kapferer (2012) stress that every single cent of a premium product's price should be justified by its attributes. On the other hand, when dealing with luxury, pricing managers can go well beyond covering costs of production and beyond claiming a price that would be justified by the quality of the product. They can indeed

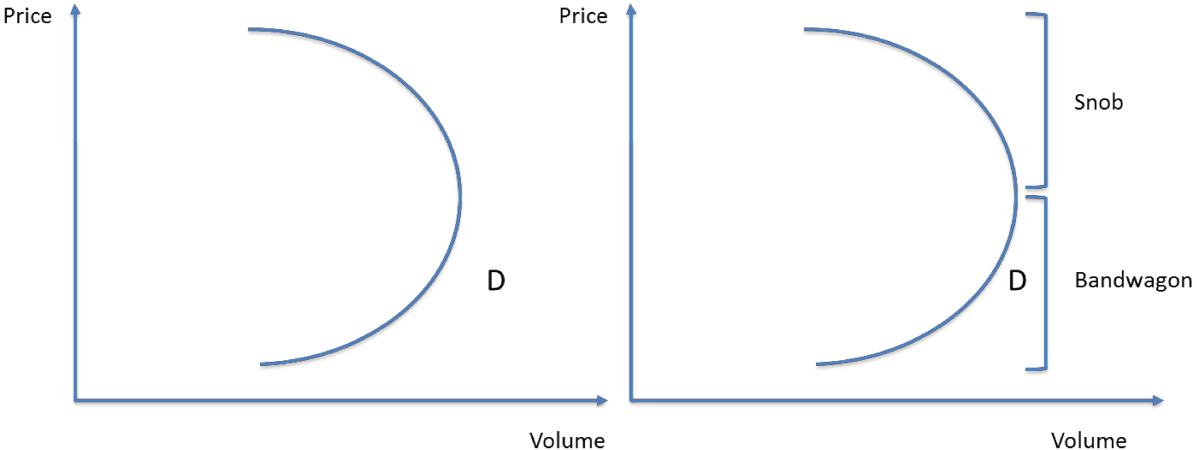
demand a price that covers intangibles such as the dream value sold by the brand, the experience and authenticity (Yeoman & McMahon-Beattie, 2006). The implicit suggestion is therefore that managers can set, more or less, any price they want.

2.2.5.4. Backward bending demand, Bandwagon and Snob effects

The most commonly held view is that the demand for luxury goods is backward bending: contrary to the law of demand, it is upward sloping at lower prices, therefore characterized by a typical Veblen effect, and after a turning point it becomes downward sloping. Please refer to Figure 6 below (Kumcu & McClure, 2003; Perreault & McCarthy, 1999).

Amaldoss & Jain (2005) find results that are coherent with the idea of backward bending demand, in that they find that the market for luxury goods is composed of two different segments. One segment is that of snob consumers, whose demand for a product will increase as the price goes up, but only if the overall demand decreases and who, in any case, will not buy if the product’s price is below a certain threshold (this would be compatible with the downward sloping part of the demand curve) and the other segment is that of bandwagon consumers, who look for luxury brands that are well known to obtain social integration and whose demand therefore increases as prices increase but only up to a certain point, after which their demand will start decreasing again (which is compatible with the upward sloping part of the curve).

Figure 6 - Backward bending demand (Kumcu & McClure, 2003) and Amaldoss & Jain's analysis (2005)



There are at least two critiques to this model of the demand for luxury goods.

The first is the one proposed by Kumcu & McClure (2003), and it is a critique to the Veblen effect that justifies the upward sloping part of the curve: they propose that increasing quantities do not depend on higher prices, but they depend instead on greater efforts by the marketers to invest in promotion and in the quality of the products, which in turn will result in higher prices.

The second critique is proposed by Kapferer & Bastien (2009)⁶ who explain that to define an elasticity coefficient of demand on price, we need to have a continue and derivable function (as it would be the case for the backward bending demand as it is drawn in Figure 6), meaning that to each tiny variation of price we should observe a variation in demand. The authors challenge this model by saying that this does not apply to luxury goods, for which we are more likely to observe a threshold effect: below a certain price the product is not considered as luxury by the targeted clientele. The example they give is that of champagne: in France champagne was not considered as real champagne if it cost less than 100 francs a bottle (before the introduction of the euro). Moreover, they suggest that price differences in luxury need to be of at least 30% to be perceptible: there is a region of indifference around a given price, for which demand will not change for variations of the price unless they are of at least +/- 30%. These two propositions together, while they do not criticize the coexistence of upward and downward parts of the curve, they surely suggest that it should not be a continuous function, but it should show steps. The two authors also suggest that customer's relationship with price is rather qualitative (i.e., is the product too expensive/not expensive enough?) and that price perception is more psychological than rational. This is coherent with what is found in main marketing textbooks who caution marketers of prestige goods that they should not price their products too low because they could sell less at a lower price (Kotler & Keller, 2011; Perreault & McCarthy, 1999).

The concept of backward bending demand is important because if demand increases with price, as it happens in a part of the backward bending demand, then using odd prices to make the price be perceived as cheaper could have counterproductive effects.

⁶ The authors did not mean to criticize the model directly, but I find their proposition to be in contrast with the backward bending demand curve.

2.2.5.5. *Where does luxury begin*

Expensiveness is central to consumers' perceptions of luxury: large samples of consumers in the USA, in Japan and in France all cite expensive as the main attribute of luxury (Dubois & Paternault, 1995). Given the subjective nature of the concept of luxury, it is difficult to state how much is "expensive" and at what price luxury starts. As De Barnier et al. (2012) point out, where luxury starts and non-luxury ends is also subjective and depends on consumers' judgment. This blurry line justifies the recent research by Kapferer & Laurent (2016) who empirically investigate where the frontier of luxury lies. Please refer to their article to see the indices they have developed to show how different countries have different ideas of expensiveness.

Kapferer & Laurent (2016) find that most respondents are able to indicate a minimum price for what they consider luxury, which means they are able to convert their abstract and qualitative notion of expensiveness into a quantitative measure. Minimum prices change from consumer to consumer and from a product category to another. Clearly, what is considered to be expensive for a watch can be considered a ridiculously small amount for a car, for example. The minimum price is higher for consumers with a broader immersion in luxury, i.e., consumers who have bought luxury items from several product categories, and for consumers with higher financial resources, as indicated by their income. From their results, we can assess that a consumer with only little experience of luxury believes that the minimum price is far away, beyond any point that might have already been reached. As the authors highlight, this is likely due to the fact that luxury implicitly includes a dream-value, so, for each individual, luxury will be seen as those products that one cannot afford just yet or possibly ever. Consumers who refuse luxury place their luxury frontier at a lower price. These results also explain why a large number of people situate their frontier at rather low prices (e.g., 100 for a watch) and only a small segment situates the frontier at very high prices (e.g., beyond 3000€).

2.2.6. *Three levels of luxury*

Several authors agree that there are least three levels of luxury: we can distinguish between accessible, intermediate and inaccessible luxury (Alleres, 1991; Castarède, 2014; De Barnier et al., 2012). Moreover, the same brand can belong to different levels of luxury depending on the product category (De Barnier et al., 2012), and also, as we will see in the description of

the samples I have collected for women handbags, we can observe the three levels within the same product category of the same brand. For example, Louis Vuitton offers relatively cheap canvas handbags at 600 euros, but they also offer quite inaccessible crocodile handbags at 24000 euros. Of course, accessibility and inaccessibility of a product will depend on subjective judgment and on other products it is compared to.

The three levels of luxury are placed on a continuum, there is no clear and objective distinction between them:

1. At one extremity, we find inaccessible luxury, with very few, if not only one, unit(s), made of noble materials, with very expensive prices, very intimate distribution, very discrete communication, and the possibility of customizing the product (e.g., Haute couture, haute jewelry, art, yachts, etc.);
2. The transition from inaccessible to accessible luxury is covered by intermediate luxury products, which are, intuitively, more expensive than accessible, but less expensive than inaccessible luxury products and are made of decreasingly (from inaccessible to accessible) precious materials;
3. At the other extremity we find accessible luxury, with products whose price-quality ratio is strategically defined, the distribution is less selective. These accessible luxury products are for consumers that are less wealthy and are in general some sort of elaboration to a lower end of inaccessible luxury products. As Kapferer suggests (*The two business cultures of luxury brands* in Schroeder, Salzer-Mörling, & Askegaard, 2006) mass-production luxuries constitute the lower tier in a three-level luxury pyramid: at this lower level, which is a level of industrialization, the brand's reputation from the top of the pyramid generates an aura of intangible values for expensive and prime quality products which however tend to gradually look like the rest of the non-luxury market and for which marketers develop and apply a masstige strategy (Kastanakis & Balabanis, 2012).

Masstige (i.e., mass + prestige) strategies consist in applying elements of a prestige strategy to products that are sold to large audiences in order to find a compromise between 1) maintaining their perceived exclusivity and 2) growing their revenues (Kastanakis & Balabanis, 2012). For example, for accessible luxury products, since they are targeting less wealthy consumers, their price must be defined very carefully, to maximize the price-quality

ratio. A too important gap in price compared to similar products can be sanctioned by consumers, who might abandon the product and the brand.

Like Bastien & Kapferer (2012) suggest, Alleres (1991) also describes how, within inaccessible luxury, the creation of a new product is not the result of a competitive analysis, nor are they the answer to customers' expectations, or to fashion evolutions, but it is simply the pure result of the inventive genius of the creator or of the perpetuation of his/her creativity. On the contrary, the development of accessible luxury products starts from a careful process of segmentation of the market.

If it is certain, on the one hand, that inaccessible luxury products must be made of the rarest, most noble and most expensive materials, with the most meticulous and most qualified fabrication, distributed in the most selective channels of distribution, with very limited communication, with a very expensive price, on the other hand, a product that is extremely expensive but does not fulfill the other conditions will not be considered real luxury (Luxury sets the price, not the other way round; Bastien & Kapferer, 2012).

The extremely high price of an inaccessible luxury product has both rational and irrational components (i.e., its materials and their selection/ search, the elaboration and the labor cost of the artisan, distribution, communication, the price of rarity and exclusivity). For luxury products that are more accessible, materials are less expensive, less noble, less rare, product conception is less elaborated, and creative demand is also inferior. For accessible luxuries, price will be carefully determined considering all costs of production and the willingness to pay of the consumers the product is conceived for.

The description of the different levels of luxury, from inaccessible to accessible is important: as I will explain in more detail later, I am expecting accessible luxury products to be more often odd-priced, while inaccessible luxury products to be more often even-priced. The studies I have conducted also allow me to observe how other price endings are used and to determine how intermediate luxury handbags are most likely to be priced.

2.2.7. Key points on luxury

- Luxury products and services are “nonessential items and services providing pleasure and prestige related to rarity and uniqueness; luxury is mainly identified by high price and superior quality.” (Lee, Ko, Lee, & Kim, 2015).
- The concept of luxury is extremely subjective and variable: nobody really agrees on what it means precisely, what are its boundaries and the brands that belong to its universe (Bastien & Kapferer, 2012):
 - Something can be defined “luxury” when not anyone can access it both due to high price and selective distribution;
 - Luxury must create a hedonic experience; functionality or practical utility can be minor, but they must exist;
 - Luxury products should feature excellent quality.
- Luxury is not a one-dimensional construct, but it comprises several facets:
 - Quality (its perception results in a quality image, as it is referred to in the odd pricing literature);
 - Perceived uniqueness (resulting in uniqueness image);
 - Prestige (resulting in prestige image);
 - Expensiveness (its perception results in a price image, as it is referred to in the odd pricing literature);
 - Hedonism;
 - History, heritage and tradition of the brand.
- Motivations to engage in luxury consumption are not mutually exclusive, they coexist:
 - Need for uniqueness vs. need for conformity;
 - Consumption-related need for status;
 - Hedonic consumption;
 - Search for excellent quality.
- Perceived value is what justifies high prices: in the case of luxury products, perceived value should include also an appreciation for hedonic benefits, such as intangibles of style, uniqueness, occasion and experience. Some consumers of luxury products might even perceive a greater value as the price increases, because being able to pay that price will make them feel unique and exclusive.

- Demand for luxury goods is backward bending: contrary to the law of demand, it is upward sloping at lower prices, therefore characterized by a typical Veblen effect, and after a turning point it becomes downward sloping.
- There are three levels of luxury: luxury goes from inaccessible (very few units, noble materials, very expensive prices, very intimate distribution, etc.) to intermediate to accessible (prime quality products which tend to gradually look like the rest of the non-luxury market; masstige products). The three levels are placed on a continuum and to which level a luxury product belongs is subjective.

2.3. Possible links between price ending literature and luxury

The literature about odd pricing or price endings in general has not been written to be relevant to luxury pricing. On the contrary, most of it has been written to investigate the effects on sales, price perception and product image of very accessible goods, such as groceries. However, here and there in this limited literature it is possible to observe few hints at what one might expect if this pricing technique were to be applied to higher prices, as would be the cases of prices of luxury goods.

Odd-ending price justification effect. Firstly, Choi, Li, Rangan, Chatterjee, & Singh (2014) find that odd prices are effective in increasing the purchase intention for a hedonic product, through what they call the odd-ending price justification effect (OPJE). As the authors explain in their conceptual framework, hedonic products are often thought of as more discretionary and superfluous than utilitarian products (Okada, 2005) and, because of this, consumers often feel the need to justify their decision to buy them and feel guilty if they cannot do so. Khan & Dhar (2010) find that an effective way to reduce purchase-related guilt is for the consumers to find deals because by doing so they can tell themselves that at least they did not pay the full price and the purchase was therefore worth it. Moreover, Zheng & Kivetz (2009) show that this kind of justification only works for hedonic products, and not for utilitarian products. Because of the discount image of odd prices (Schindler, 1991, 2001), odd-ending prices are effective in reducing the guilt associated with spending money to purchase a hedonic product and therefore increase their purchase intention. As we have seen in previous chapters, hedonism is an important dimension of luxury consumption and luxury products can often be seen as superfluous (Hagtvedt & Patrick, 2009; Lee et al., 2015). Odd prices could therefore be appropriate to reduce purchase-related guilt.

Secondly, Manning & Sprott (2009) find that odd prices have a positive effect on the choice of products with higher prices (as it would be the case for luxury products) and when the individual is making the purchase for an acquaintance, but have no impact when the price of product is low or when it is purchased for a friend. This again can be justified by the odd-ending price justification effect, since it could be difficult to justify to oneself the purchase of an expensive gift for somebody that one barely knows, while it is easier to justify the purchase of an inexpensive gift for them or of an expensive gift for a close friend (Choi et al., 2014).

Odd prices should always be used. Lastly, as we have previously seen (section 2.1.5.3.2. on threshold effect), Gedenk & Sattler (1999) find that 9-ending prices should always be used unless three conditions occur together: the marginal costs are low, price elasticity is high and only a small percentage of the population responds to price thresholds. As they remind us, the combination of these three conditions is unlikely to occur. They also suggest 9-ending prices should be used also when the prices are higher: for example, according to them also using 2490 dollars or euros rather than 2500 would also yield higher profits for a company, unless the three conditions occur together. Incidentally, prices ending in -90 like 2490 euros are the prices that I will be investigating in my empirical studies.

Odd prices might damage product's, brand's, retailer's image and reputation. Despite the previously mentioned reasons that encourage the use of odd prices also for luxury goods, other authors suggest that the odd pricing practice could be counterproductive in a luxury context. For example, Schindler et al. (2011) suggest that, on top of the negative quality image effect better described in 2.1.5.4.3, odd prices are typically not coherent with an upscale image and possibly they are not perceived as honest and straightforward. Similarly, Anderson & Simester (2003) find that if items are high-priced, then using prices in -9 might damage the retailer's reputation. Moreover, Guéguen & Legohérel (2004) and Ngobo et al. (2010) in their studies find that price ending effects on sales tend to disappear as prices increase, which, once again, might be justified by the negative quality connotations.

A possible explanation of why odd prices are used on luxury products, too. If the latter negative effects of odd prices on price, quality and prestige images existed also in luxury and if they prevailed on the above-mentioned odd-ending price justification effect, then using odd prices in a luxury context would be counterproductive: managers would not be benefitting from higher sales in the short run, while also damaging quality and prestige perceptions⁷. However, as we are going to see in Chapter 3 and 4, odd prices are commonly used on women handbags by several luxury brands. Since odd prices have never been investigated in a luxury context and the little that is already known about this pricing practice goes mainly against its use on luxury products, we could assume that managers are incurring in a cognitive bias that is known as *reasoning by analogy*. This is defined as the transposition of simple, known cases (e.g., price endings in the FMCG) to more complex, unknown cases (e.g., luxury

⁷ Bastien & Kapferer (2012), for example, even state that if product managers need to set a price at 99,90 euros to make a sale, then we are not dealing with luxury anymore. In fact, while talking about Apple, who, according to them, applies a pure luxury strategy, they suggest that the only incoherent P in their marketing mix' 4Ps is the fact that they set all prices to end in 9.

products) and the result is often that the unknown context is oversimplified and that the strategic or tactical decision that has been implemented will possibly result inappropriate (Laroche & Nioche, 2006). Managers often think back to some similar situation they have experienced, draw lessons from it and apply those lessons to the current situation (Gavetti, Rivkin, & Auton, 2005). Because pricing managers of luxury firms surely have observed the odd pricing technique in a marketplace they are familiar with (e.g., maybe as consumers at the supermarket or as managers in a previous working experience in consumer goods), they might assume that odd pricing is appropriate to certain products in a luxury context, too.

2.3.1. Attitudes towards price and money

Because of the importance of the price attribute and of the monetary aspect of luxury products, in this section I will address some of the literature on attitudes towards price and towards money in general. Like the personal motivations to engage in luxury consumption (section 2.2.4), I am expecting attitudes towards money to have an impact on the way consumers of luxury goods will perceive and react to odd and even prices.

Price-quality schema: perceived vs. objective quality relationship to price. Previous research finds that the relationship between price and objective quality across several product categories is very weak: it can be extremely high for certain product categories, but in general it is weak and sometimes negative; moreover, individuals have been found to be bad estimators of price-quality relationships (Lichtenstein & Burton, 1989), because they often infer that higher levels of quality correspond to higher prices, when it is not always the case. In fact, also beyond the luxury sector, the relationship between price and perceived quality is usually statistically significant and positive (Parguel et al., 2016; Rao & Monroe, 1989). For example, past research has determined that price plays a role in the perception of quality and value for wine consumers. All things being equal, a consumer will derive greater enjoyment from a glass of wine if she has been informed that it is more expensive. A study was conducted where consumers were given samples of the same wine with the only variable being their knowledge of the retail price. Consistently, the drinkers exhibited greater enjoyment and preferred the wines that they were told were more expensive even though it was the same wine⁸. This tendency across product categories to believe that the level of the price cue is related positively to the quality level of the product is referred to in the literature

⁸ Wine pricing in the united states warren by Bid Mead in Özer & Phillips, 2012; Plassmann, O'Doherty, Shiv, & Rangel, 2008

as *price-quality schema* (Lichtenstein et al., 1993). Grewal, Krishnan, Baker, & Borin (1998) show how consumers who have had little previous experience with the product associate buying the product with potential risks and uncertainty and may use the price attribute as an external cue to assess its quality, just like they would do with brand name, store, country of origin, etc. Moreover, Miyazaki, Grewal, Goodstein (2005) show that this price-quality schema is even stronger when it is consistent with other extrinsic cues. An extension of the price-quality schema is the *price seeking behavior* (Tellis & Gaeth, 1990), i.e., choosing the highest priced brand to maximize expected quality. Price-seekers are therefore consumers who look for the highest price to pay in order to be reassured about the quality.

Price as an indicator of prestige. Another important way of relating to price is to use it as an indicator of prestige. This is known as *prestige sensitivity* and it is defined as the ensemble of favorable perceptions of the price cue based on feelings of prominence and status that higher prices signal to other people about the purchaser (Lichtenstein et al., 1993). As we have previously seen, this applies perfectly well to all those consumers who buy luxury because it is expensive and because this allows them to impress others and signal status. The literature on money attitudes also confirms the existence of this aspect of the relationship to money, which is referred to as the “power-prestige” or “power-spending” dimension (Baker & Hagedorn, 2008; Furnham, 1984; Yamauchi & Templer, 1982).

Enjoyment in spending money. Before moving on to the negative roles of price, the last positive attitude towards price that I would like to mention is the enjoyment in spending money. Although, to the best of my knowledge, no empirical research has been carried out on this, certain authors mention that a category of consumers better known as “Big Spenders” exist: Tatzel, (2002) for example gives the description of a Big Spender persona as it follows:

“Every day she shops, and everything she buys is full price. She wants the best of everything and the most expensive. Her clothes have to be name brand and she needs lots of them. She has to have a home that looks like something out of a magazine and will not skimp in order to get it. She bought a new bike that she had to have for \$750.00, used it twice, and sold it for \$300 the following year so she could get another new bike that she liked better.”

Big Spenders are likely to be highly materialistic (i.e., they are avid for possession and their desire to consume is strong), exhibitionist, to replace possessions often and to be debt prone

(Tatzel, 2002). Of course, it is likely that enjoyment in spending money would come along with price-quality schema and prestige sensitivity (Medina & Saegert, 1996), but what is specific of this attitude is that high prices are attractive and partying with money is easy. Accordingly, Rubinstein (1980) in order to measure this attitude used the following items: “I really enjoy spending money” and “I almost always buy what I want, regardless of cost”, while Baker & Hagedorn (2008) use the item “I spend money to make myself feel better” which also reflects the intrinsic enjoyment in spending money. When Big Spenders spend money compulsively and uncontrolledly, especially when feeling depressed, they become “Spendthrifts” (Furnham, 1984): Spendthrifts are individuals who equate spending with receiving affection and hence feel more inclined to spend when feeling insecure, unloved or in need of affection. Spending is an instant but short-lived gratification that frequently leads to guilt (Furnham, 1984).

Negative roles of price. We have seen, so far, the positive attitudes individuals might have towards money. The literature reports a list of negative roles of price or of attitudes towards this attribute, that are not strictly relevant to my research because, intuitively, somebody who is price conscious or somebody who constantly screening the market to look for the cheapest price cannot be an assiduous consumer of luxury goods. However, as we have seen that the segment of excursionists is becoming more and more important (Dubois & Laurent, 1996), some of these negative attitudes towards price might still be relevant to describe occasional consumers of luxury goods.

Lichtenstein et al. (1993) identify five negative roles of price:

- Value consciousness, defined as a concern for price paid relative to quality received;
- Price consciousness, defined as the degree to which the consumer focuses exclusively on paying low prices;
- Coupon proneness, defined as an increased propensity to respond to a purchase offer because the coupon form of the purchase offer positively affects purchase evaluations;
- Sale proneness, defined as an increased propensity to respond to a purchase offer because the sale form in which the price is presented positively affects purchase evaluations;
- Price mavenism, defined as the degree to which an individual is a source for price information for many kinds of products and places to shop for the lowest prices,

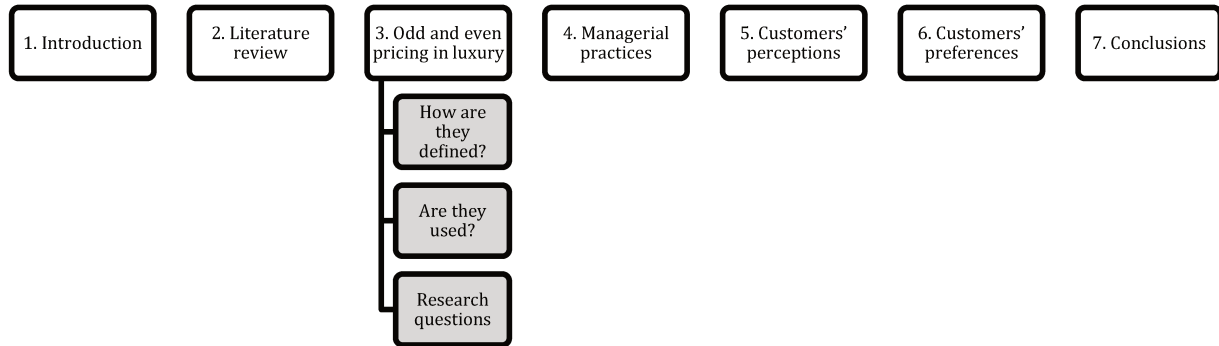
initiates discussions with consumers, and responds to requests from consumers for marketplace information.

Among these five attitudes towards price, sale proneness and coupon proneness are clearly not relevant in the domain of luxury, since luxury brands are not supposed to apply price reductions of any kind at any time (Bastien & Kapferer, 2012).

Value consciousness, also referred to as *best value strategy*, i.e., choosing the brand with the least overall cost in terms of price and expected quality (Tellis & Gaeth, 1990), could be relevant to luxury, since it is possible to imagine that a consumer who spends a considerable amount of money on the purchase of a luxury product might want to be sure that the price is worth the quality of the product. As for price consciousness, intuitively, somebody that is price conscious is unlikely to engage in the purchase of an expensive luxury product, knowing that there are non-luxury and equivalent in functionality items available at lower prices. However, an Excursionist, for example, could be price conscious in her daily life, but become less price conscious for the rare occasion in which she will buy a luxury product, probably without ever becoming a Big Spender. Individuals who are price conscious are said to suffer more than non-price conscious individuals the *pain of paying*, i.e., the disutility derived from parting with money. Prelec & Loewenstein (1998, as cited in Robitaille, 2011) suggested that when making purchase decisions, people experience competition between the anticipated pleasure derived from acquiring and consuming the product and the anticipated losses incurred not only from the money given up in the transaction (product price) and the hassle of executing the payment (transaction cost) but also from the pain of paying. Tellis & Gaeth (1990) define this attitude towards price as *price aversion*, defined as choosing the lowest priced brand to minimize immediate costs. It is possible that because of this price aversion, an individual who is price conscious but occasionally becomes a consumer of luxury goods (i.e., an Excursionist) will still try to minimize the amount of money spent, possibly by choosing accessible luxury products. Interestingly, price consciousness is lower for hedonic purchases than for the purchase of functional products (Wakefield & Inman, 2003).

In my conceptual framework, I will consider enjoyment in spending money and price consciousness/ pain of paying as the extremities of the same continuum: intuitively, the less one enjoys spending money, the more they will make an effort to find lower prices and therefore be price-conscious consumers.

Progress – This chapter will deal with point 3.



3. Odd and even pricing in luxury: the case of luxury handbags

To the best of my knowledge, no research has ever investigated the use of odd and even pricing or any other kind of price endings applied to luxury goods. The product category I have studied is that of women handbags. Given the exploratory nature of this research, focusing on just one product category should already allow us to discover interesting elements about price endings in luxury, although results might not necessarily be generalizable to other product categories.

There are several reasons why I decided to observe prices for women handbags. Firstly, they have already been used in previous studies on pricing of luxury goods: Han, Nunes, & Drèze (2010) explain that they use handbags in their studies because handbags are the engine that drives luxury today. Secondly, it is normally the most extensive product category luxury brands propose: since handbags do not require sizing, as do shoes or prêt-à-porter, normally brands offer a very wide range of options, so collecting handbags' prices allowed me to have many observations, which is important for statistical analysis purposes. Thirdly, handbags' collections never change completely from one season to the next, allowing us to observe both how managers price latest items and how they price carried-over items from previous seasons. Lastly, handbags are a good category to observe because they cover several price ranges, starting from relatively accessible items to extremely expensive ones, allowing us to observe how pricing practices vary across different prices ranges and across the previously-mentioned continuum from accessible to inaccessible luxury.

Before presenting the research questions that I will address in the empirical parts of this thesis, it is essential to establish whether price setters of luxury firms use odd and even prices at all and, if this is the case, how the generic definition of odd and even prices can be adapted

to a luxury context. In this brief chapter, I will therefore present a description of the data I have collected to show that odd and even prices are indeed used by luxury firms, at least in the women handbag product category, and that, since we are dealing with higher prices than those usually investigated in the literature on price endings, I need to adapt the existing definitions of odd pricing.

3.1. Odd and even pricing: how to define them in luxury

The sample I collected is constituted by prices found online on official companies' websites for nine brands (Chanel, Dior, Fendi, Coach, Prada, Lancel, Yves Saint Laurent, Louis Vuitton and Gucci) in Spring 2014 for the women handbag product category. I collected a total of 1041 observations in euro⁹ and 1046 in US dollars for the 9 luxury brands. Most references have been observed in both currencies. Please refer to Table 10 to see the breakdown of how many references were observed for each brand and currency. For Chanel, Dior and Lancel prices in US dollars were not available online and therefore not collected.

Table 10 - Number of observations for all 9 brands in Spring 2014 in euros and in dollars.

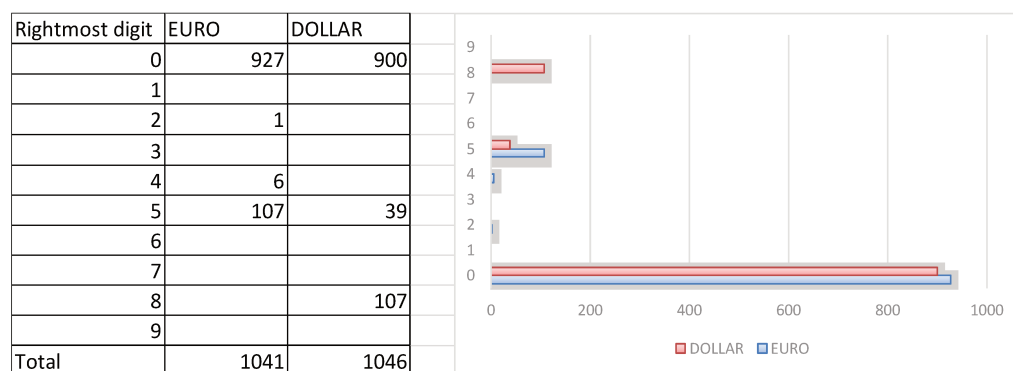
Brand	#observations €	#observations \$
Chanel	59	/
Coach	26	113
Dior	12	/
Fendi	99	97
Gucci	212	286
Lancel	52	/
LV	314	314
Prada	109	90
YSL	158	146
Tot #observations	1041	1046

In general, beyond the luxury sector, odd pricing is defined as “the practice of expressing a price so that its ending (i.e., its rightmost digits) causes it to fall just below a round number” (Schindler & Warren, 1988). To understand what “just below a round number” means we need to look at prices in the marketplace to identify the most common price endings. Just like in the literature on odd pricing most authors have ended up focusing specifically on 9-ending prices, because they are the most common form of odd pricing (Baumgartner & Steiner, 2007), I am not going to specify what “just-below a round number” means, since it clearly is a subjective notion, but I will define the focus of this research and therefore base my definition of odd prices on the observation of the above-mentioned sample.

⁹ Prices were collected on French websites and may vary across the Euro zone.

A first level of analysis shows that observed prices do not have decimal figures, i.e., they are always integers, and that, when we look at the rightmost digit of observed prices, 0 is by far the most common price ending, followed by 5 (in euros) and by 8 and then 5 (in dollars). Please refer to Table 11. All prices ending in 8 are observed for the brand Coach and 8 is basically the only price ending Coach used in Spring 2014 in dollars, since 107 out of 113 observed prices end in -8. If we exclude Coach from this first analysis, we observe that virtually all prices end either in -0 or in -5. So, if odd prices are adopted by luxury brands, they do not come with a 9-ending.

Table 11 - Frequencies of single rightmost digits for all brands in Spring 2014



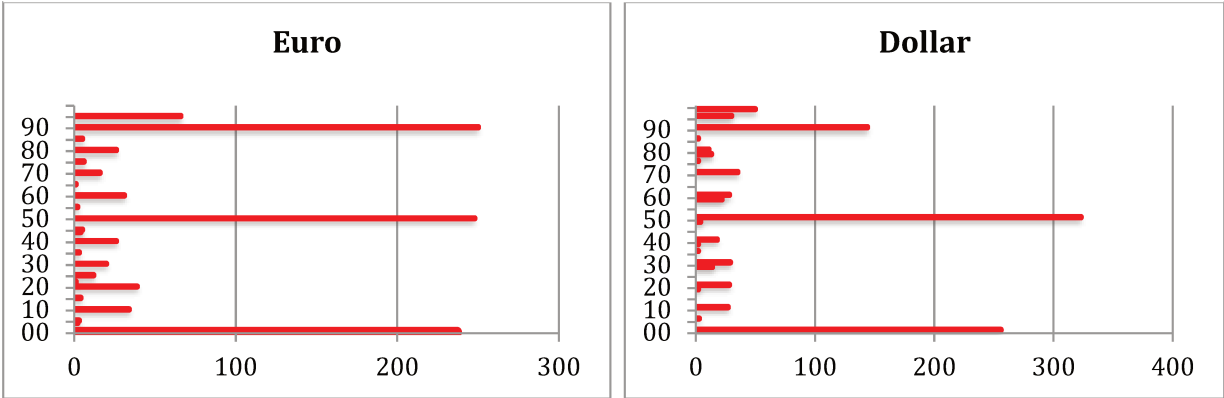
A second level of analysis that looks at the distribution of the two rightmost digits of observed prices for all brands in Spring 2014 shows that there are three clear peaks in the distribution for both price endings observed in euros and in dollars: the first peak is at prices ending in -00, the second for prices ending in -50 and the last for prices ending up to 10 euros below the round hundred. Please refer to Figure 7 below. This means that prices “just below a round number” end in -90 or -95 for the euro sample and in -90, -95 or -98 for the US dollar one. If price endings were determined randomly, we would observe a more homogeneous distribution, rather than these three peaks.

I therefore propose a definition of odd prices in this context on data observation: *odd prices are prices ending up to 10 euros or dollars below the round hundred* (e.g., 1690; 1795; 1898, etc.). “Just-below a round number” means up to 10 euros or dollars below any given hundred (e.g., 890€, 990\$, 1090€, 1195\$, etc.). According to Legohérel et al. (2013) prices ending in “-9_” can indeed be considered odd, since they show a 9 “somewhere in the price”.

Similarly, starting from data observation, I propose a definition of *even prices as ending in -00 and 50-ending prices as prices ending in -50*. 50-ending prices have not received any

attention in the literature on price endings, but given the frequency with which they are observed, at least in these samples, it is felt that it would be interesting to investigate how they are used and whether they have any special connotation. All other prices are considered as belonging to a residual category “other prices”.

Figure 7 - Price endings distributions showing 3 peaks at -00, -50 and -90/-95 for both euros and dollars



3.2. To what extent are odd and even prices used in the luxury women handbag product category?

After proposing a definition of odd prices for both euros and dollars, it is possible to observe how frequent odd and even prices are for the two currencies in the observed samples. Odd prices constitute 30% of the sample in euros and 21% of the sample in dollars, while even prices constitute 23% and 22% of the sample in euros and in dollars respectively. Because of the low price, low quality and low prestige connotations usually attributed to odd prices, I would expect to observe none in a luxury context. On the contrary, given the high price, high quality and high prestige connotations of even prices, I would expect to observe nearly only even prices. However, not only do we observe an extremely high percentage of price endings that are not even, but we also observe a very important percentage of odd prices. Prices ending in -50 and all other prices collectively also represent approximately a quarter of the two samples each. Please refer to Table 12.

As we can see, many of the 9 brands make extensive use of odd pricing in both currencies. Others, such as Dior and Prada seem to avoid this pricing technique and favor even prices and other price endings.

Table 12 – Number and % of odd and even prices observed per brand and per currency

Brand	Euro						Dollar						
	Even (00)	-50	90	95	Other	Total	Even (00)	-50	90	95	98	Other	Total
Chanel	11	7			41	59						0	0
Coach	1			10	15	26	7				50	57	114
Dior	10	2			0	12						0	0
Fendi	9	10	16	1	63	99	29	66				2	97
Gucci	76	79	34	8	15	212	94	75	66	13		37	285
Lancel		8	21	15	8	52						0	0
LV	77	44	99	1	93	314	93	79	14			128	314
Prada	53	44	7		5	109	33	25	8	6		18	90
YSL		54	73	31	0	158	1	78	56	11		0	146
Total	237	248	250	66	240	1041	256	323	144	30	50	242	1046

Brand	Euro					Dollar				
	Even (00)	-50	Odd (90 & 95)	Other	Total	Even (00)	-50	Odd (90, 95 & 98)	Other	Total
Chanel	19%	12%	0%	69%	100%					
Coach	4%	0%	38%	58%	100%	6%	0%	44%	50%	100%
Dior	83%	17%	0%	0%	100%					
Fendi	9%	10%	17%	64%	100%	30%	68%	0%	2%	100%
Gucci	36%	37%	20%	7%	100%	33%	26%	28%	13%	100%
Lancel	0%	15%	69%	15%	100%					
LV	25%	14%	32%	30%	100%	30%	25%	4%	41%	100%
Prada	49%	40%	6%	5%	100%	37%	28%	16%	20%	100%
YSL	0%	34%	66%	0%	100%	1%	53%	46%	0%	100%
Total	23%	24%	30%	23%	100%	24%	31%	21%	23%	100%

3.3. Research questions

Now that I have established that odd and even prices exist in the luxury women handbag product category, that they have a different form from what we would observe in a non-luxury context and that there are some brands that make extensive use of the odd pricing practice, I will present the research questions on managerial practices and customers' perceptions and preferences.

The issues concerning odd and even prices applied to luxury goods seem to be best classified into three categories.

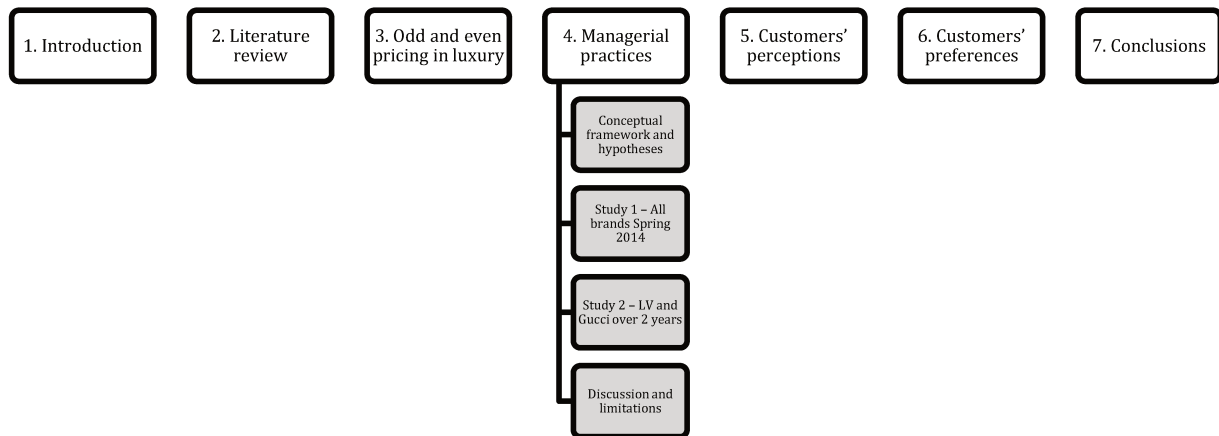
Firstly, it would be useful to investigate what the current practices of pricing managers in the luxury sector are: What are the determinants of the use of different price endings? In other words, when are luxury products more likely to be odd-priced and when are they more likely to be even-priced or carry another price ending?

Secondly, since odd prices are used also for luxury products, it seems necessary to study how consumers of luxury goods perceive them. Do the same connotations of low price, low quality and low prestige apply to luxury goods when they are odd-priced as they would apply to consumer goods? Are there some effects on the other dimensions of luxury, such as perceived uniqueness? Does odd pricing affect overall perceived luxuriousness of a product?

Lastly, I would like to determine customers' preference for different price endings. Do consumers prefer odd to even-priced products? Do all consumers of luxury goods react in the same way to odd and even pricing?

The next sessions are structured as follows: firstly, I will present the conceptual framework for managerial practices followed by the presentation and analysis of two databases of prices. Secondly, I will present the conceptual framework for the customer side, the hypotheses on how customers perceive odd and even pricing followed by the presentation of two experiments that I designed and conducted to test the second conceptual framework. Lastly, I will present hypotheses concerning customers' preferences for odd or even prices and then present the relative study, i.e., a conjoint analysis, to test this last set of hypotheses.

Progress - This chapter will deal with point 4.



4. How do managers use different price endings in the women handbags product category?

In previous chapters we have seen how literature on price endings mostly focuses on odd and even prices in a FMCG context. Also, we have seen how luxury products should be priced following a prestige pricing practice, which, intuitively, should include mostly even prices, and few to none odd prices. In Chapter 3, I presented a sample of prices observed in the luxury women handbag product category and showed that even prices are only used in approximately 25% of cases, while the majority of prices have other endings. In this chapter, I will therefore investigate the determinants of the use of different price endings for luxury handbags.

4.1. Conceptual framework

Odd prices have been found to have several connotations. Firstly, they are known to have low price image effects. More specifically, odd prices are more likely to be judged at a discount (Quigley & Notarantonio, 1992), they are more likely to be judged as the lowest prices available for a given product, as being probably on sale and as unlikely to have been increased (Schindler, 1984, 2001). Moreover, Naipaul & Parsa (2001) and Schindler (2006) find evidence of the intention by price setters to use odd prices as a low price appeal. Secondly, it has been shown that odd prices have low-quality connotations. This is possibly due to the “good deal” connotation, so that consumers believe that they are applied to outdated goods of which the retailer wants to get rid of because they will soon expire (Schindler, 1991). Schindler & Kibarian (2001) find that this negative effect on quality

perceptions is even stronger if the quality of the odd-priced product is high to begin with, which is supposedly the case for luxury products. The only known effect of odd pricing that could play in favor of this practice being used for luxury goods is that odd prices seem to reduce the guilt that is often attached to the purchase of an unnecessary hedonic product, through an odd-ending justification effect that operates at an unconscious level (Choi & al., 2014). Being hedonism one of the main components of luxury consumption, (Berthon et al., 2009; Hagtvedt & Patrick, 2009; Vigneron & Johnson, 1999, 2004; Wiedmann et al., 2009), one could argue that guilt-reduction is a good enough reason for luxury brands to use odd prices for their products, especially since some consumers might be likely to experience guilt when engaging in self-gift purchases (Dubois & Laurent, 1996). However, the negative price and quality image effects typical of odd prices could be a strong-enough argument against them in a luxury context.

Naipaul & Parsa (2001) find that, when menus show even prices, consumers believe that the restaurant will offer high overall quality, and this could apply also outside the hospitality industry. Schindler et al. (2011) find that many managers who use round prices do so because they believe consumers will perceive higher quality and because they find them to be more honest. Lastly, it has been suggested several times, but never tested empirically, that even prices are perceived as high, full, regular prices and that they tend to create a prestige effect because they imply that customers are “above thinking about pennies” (Georgoff, 1972; Schindler, 1991); in this sense, all prices that are not round could be perceived as “not classy” because they might imply that customers do care about small amounts of money. Similarly, Stiving (2000) observed that “classy” retailers tend to use even prices, while odd prices are more typical of retailers usually considered as “not classy”.

Facets of luxury. Expensiveness, quality and prestige are three important dimensions for luxury products and brands. A luxury product is expected to be expensive (Bastien & Kapferer, 2012) and its high price is often seen as an intrinsic characteristic, which becomes acceptable because of its superior quality (Nwankwo et al., 2014). A high price can even generate a feeling of comfort, well-being and security (Dubois et al., 2001). Furthermore, prestige has been long considered the most important quality of luxury and the main reason why consumers would engage in luxury consumption (Veblen, 1899). Although nowadays the focus is shifting towards more personal oriented motivations to buy and consume luxury products, such as hedonism (Atwal & Williams, 2009), perceived prestige remains an

essential dimension luxury brands should master, at least for some of their consumers (Sung et al., 2015).

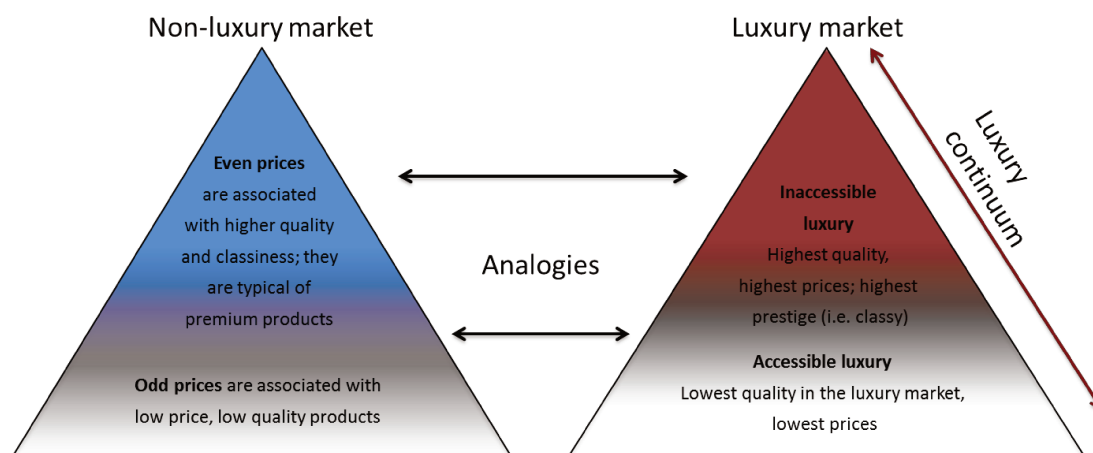
Prestige pricing. Prestige pricing itself is defined as “setting a rather high price to suggest high quality or high status” (Perreault & McCarthy, 1999). For those brands that want to follow the anti-laws of marketing of the Luxury Strategy recommended by Bastien & Kapferer (2012), prices should be increased over time to drive the demand and “the presumed price should always seem higher than the actual price”. Moreover, higher prices are known to be correlated with higher levels of perceived quality and prestige (Lichtenstein et al., 1993; Rao & Monroe, 1989).

Based on the above, there seems to be no reason why luxury firms should ever set odd prices, given that their effect is that prices and quality are perceived as lower. Moreover, consumers of luxury goods gladly accept to pay more and they infer higher quality from higher prices. Why would a pricing manager, whose objective is to make sure her brand is perceived as expensive, of superior quality and prestigious, ever adopt the odd pricing technique that supposedly reduces perceived expensiveness, perceived quality and perceived prestige?

Odd prices are used in luxury, too. As I have previously shown (section 3.2) and as you can see from Appendix 1, odd endings are also applied to luxury goods and services (e.g., Appendix 1 shows an F-type Jaguar with a starting price of 65 890 € and all the rooms offered by the Four Seasons in Las Vegas for a night in June 2017 with 9-ending prices), and even prices (e.g., €4,500 or €5,000) are less common than one would expect in these categories. If this comes as a surprise for all the above-mentioned reasons, it is, however, coherent with the paradox illustrated by Kapferer, Klippert, & Leproux (2013): although luxury needs to be expensive, it has become increasingly accessible to a growing public by using masstige strategies (i.e., mass + prestige, applying a mix of elements of prestige and FMCG strategies to super premium products that are sold to large audiences). This might illustrate luxury brands' intention to reach out to the masses. Masstige luxuries constitute the lower tier in a three-level luxury pyramid where accessible luxury products at the bottom tend to gradually look like the rest of the non-luxury market (Kastanakis & Balabanis, 2012). The other two, higher tiers of this pyramid are constituted by intermediate and inaccessible luxuries and all three level of luxury can be observed within one product category by one brand. Please refer to section 2.2.6. for further details on the distinction between the three levels of luxury.

Reasoning by analogy. Often times, managers reason by analogy, i.e., they transpose their knowledge of simple cases to more complex, possibly unknown cases (Laroche & Nioche, 2006) and they think back to some similar situation they have experienced in the past, draw lessons from it and apply them to the current situation (Gavetti et al., 2005). Pricing managers might therefore find some analogies between the luxury products they have to price and the rest of the non-luxury market. For example, because of the low-price, low-quality, low-prestige connotations of odd prices, pricing managers might assume that they are appropriate to the lower tier of the luxury pyramid, i.e., to accessible luxuries, which would therefore be priced like non-premium products in a non-luxury market. On the contrary, as they go up on the continuum of luxury and have to set prices for intermediate and inaccessible luxuries, they realise that even prices, which are more typical of premium products in the non-luxury market, would be more appropriate. Since the transition from accessible to inaccessible is progressive rather than sharp, it is reasonable to think that other price endings such as -50 or “other” price endings could fill in this transition from one end of the luxury continuum to the other. In short, if pricing managers transpose price-ending practices they have observed in a non-luxury context to a luxury context, they can easily find some parallelisms between the two markets, as shown below in Figure 8.

Figure 8 - Analogies between the non-luxury and the luxury market



General propositions. If prices were determined following similar patterns to those observed in the non-luxury market, then we should observe more odd prices applied to luxury products that are considered accessible and less odd prices among the inaccessible luxury goods. Also, we should observe less even prices among accessible luxuries and more among inaccessible luxuries. Because the three levels of luxury are placed on a continuum, i.e., the transition from

accessible to intermediate to inaccessible is progressive, also the transition from an odd price prevalence to an even price prevalence should be progressive and possibly accompanied by the use of other price endings (-50 and “other”).

My generic propositions, later declined as hypotheses in the following paragraphs are:

- Proposition₁: Odd prices are more commonly applied to accessible luxury goods.
- Proposition₂: Even prices are more commonly applied to inaccessible luxury goods.
- Proposition₃: There is a progressive transition in the use of odd prices and even prices from accessible to inaccessible products, filled in by other price endings.

“Accessible” means lower price and lower quality. Drawing from the literature, we know that inaccessible luxuries are by definition rare, made of the noblest materials and extremely expensive, while accessible luxuries, also called mass-production luxuries by Kapferer, (*The two business cultures of luxury brands* in Schroeder et al., 2006) are products whose price-quality ratio is meticulously defined since they are addressed to less wealthy consumers (Alleres, 1991; Castarède, 2014). Accessible and inaccessible are two extremities of the same “luxury continuum” (Alleres, 1991), therefore given a product category we can consider inaccessible the items at the highest end of this continuum, even if in absolute terms these items might still be somehow accessible. The entire range from accessible to inaccessible luxury can be found within the same product category of the same brand, and not only among different brands. For example, in the women handbag product category for which I have observed prices over four seasons, a handbag at 6 000 € made of fine exotic leather (e.g., python or ostrich), not to mention a 24 000 € handbag in crocodile, can be considered as inaccessible compared to an entry level canvas handbag priced at around 700 €, although some, very wealthy individuals, might argue that a 6 000 € handbag is not really inaccessible luxury.

Since I expect to observe more odd prices among accessible luxury products and I know from the literature that accessible luxury products are of lower quality and less expensive than inaccessible luxuries, I expect to find more odd prices among relatively cheaper and lower quality handbags.

- Hp_{1a}: Odd prices are more commonly applied to lower-quality luxury goods (vs. higher quality goods).

- Hp_{1b}: Odd prices are more commonly applied to luxury goods that are cheaper (vs. other more expensive products in the product range).

Accessible luxury is prominent. Han et al. (2010) show how luxury goods that are more conspicuous tend to be cheaper than more discreet luxury products. For example, a centimeter more in the size of the logo for a Mercedes, corresponds to 5 000 dollars less in price. As far as Gucci handbags are concerned, one centimeter more in the logo corresponds to 122 dollars less in the price. This means that accessible luxury, which is the least expensive level of luxury, should show prominent brand logos. Since I am expecting odd prices to be more common among accessible luxury products, I am expecting also to observe more odd prices in correspondence of loud, prominent products that show the brand logo.

- Hp_{1c}: Odd prices are more commonly applied to luxury goods on which the logo is visible (vs. products on which the logo is not visible).

“Inaccessible” means higher price and higher quality. Since I expect to observe more even prices among inaccessible luxury products and I know from the literature that inaccessible luxury products are of higher quality and the most expensive kind of luxury and given also the higher quality (Stiving, 2000) and the higher, full price connotations (Schindler, 1991) of even prices, I expect to find more even prices among luxury products that of higher quality and that are more expensive.

- Hp_{2a}: Even prices are more commonly applied to higher-quality luxury goods (vs. lower-quality goods).
- Hp_{2b}: Even prices are more commonly applied to luxury goods that are more expensive (vs. cheaper luxury goods).

Inaccessible luxury is discreet. Han et al. (2010) show how luxury goods that are more discreet, i.e., have very low brand prominence, are usually more expensive and are targeted to more refined customers who can detect subtle signals. This means that inaccessible luxury, which is the most expensive, should be discreet in showing brand logos or not showing them at all. Since I am expecting even prices to be more common among inaccessible luxury products, I am expecting also to observe more even prices in correspondence of discreet products that do not show the brand logo.

- Hp_{2c}: Even prices are more commonly applied to more discrete luxury goods (vs. more prominent goods).

Odd prices are less likely to be perceived as recently increased. By keeping track of prices over time of certain luxury brands in the handbag category, I have observed that it is frequent for them to increase prices from one season to the next. For example, a Louis Vuitton Speedy 25 that cost 580€ for the Autumn Winter (AW) collection in 2013, then cost 600 € in Spring Summer (SS) 2014, 625 € in AW14, 645 € in SS15 and 745 € in AW15. All product features kept equal, the price was increased every season over the two years. Schindler (1984) shows that when prices have odd endings individuals are less likely to notice that the price has been increased than when the prices have even endings. Since luxury brands are increasing prices twice a year without improving the product, they might find it convenient to “hide” this price increase. Odd prices could be the means to do so. I am therefore expecting to observe more odd prices applied to references that are carried over from one season to the next and whose price has been increased, because consumers should be less likely to notice the price increase.

- Hp₃: Odd prices are more commonly applied to references that are carried over from one season to the next and whose price has been increased (compared to references that are either newly introduced or whose price has not been increased).

Please find below in Table 13, a summary of the hypotheses.

Table 13 - Summary of hypotheses on managerial practices

	Expected relationship ¹⁰	
	Odd prices	Even prices
Price	-	+
Quality	-	+
Brand prominence	+	-
Price increase from previous season	+	/

At this stage, it is not possible to formulate hypotheses on the use of -50 and “other” price endings, because they have never been investigated in the literature. The part of this chapter that is dedicated to identifying the determinants of the use of these price endings is therefore more exploratory than confirmatory.

¹⁰ A minus indicates an expected negative relationship between the variable listed on the left and the probability of observing a price ending. A plus indicates an expected positive relationship.

4.2. Longitudinal and cross sectional price surveys – Study 1 and 2

I will test all the hypotheses on managerial practices and their determinants analyzing two types of samples: in the first, which I have already partially described in Chapter 3, data have been collected for the women handbag product category as a cross-section for nine luxury brands in Spring Summer (SS) 2014. In the second sample, data have been collected for two of the nine brands in the same product category for four seasons starting in Autumn Winter (AW) 2013 and finishing in SS2015 to have longitudinal observations. With the first sample, it has been possible to test hypotheses whose results should be generalizable to other luxury brands, while with the longitudinal observation it has been possible to confirm that pricing practices are consistent over time (i.e. cross-sectional results are not significant by chance), even though the percentage of odd and even prices might vary for each brand from one observation to the other.

4.2.1. Methodology

To investigate managerial practices regarding odd prices, I collected prices online for nine brands in the women handbag product category in euros and in US dollars, when available. For two of the nine brands, Gucci and Louis Vuitton, prices were also observed longitudinally, starting in summer 2013 for the Spring Summer collection (SS) 2013, then for the Autumn Winter collection (AW) in December 2013, for SS in Mars 2014 and finally for AW in December 2014, for a total of four complete observations. For the other seven brands, Chanel, Dior, Fendi, Coach, Prada, Lancel, Yves Saint Laurent, prices were observed *una tantum* in Spring 2014. For each brand different the following variables were observed: reference ID, volume (when available), price, quality of material and visibility of logo on the handbag.

Why I observed prices online. The reason why I decided to observe prices online rather than in brick and mortar stores is twofold: first, prices online within one country are normally the same as the prices one would find in stores of a brand, as also Han, Nunes, & Drèze (2010) report. Secondly, by observing prices online, I created a thorough database, which would have not been possible had I decided to go to stores physically and asked shop assistants to help me compile a database on the whole product range.

Why Louis Vuitton and Gucci? I chose Louis Vuitton and Gucci as the core of my longitudinal study because they have already been used in the literature (Han et al., 2010) and

because they are two of the three most valued luxury brands in the Interbrand Best brands ranking 2015 and 2014 (<http://interbrand.com/best-brands/>), the third being Hermès, for which prices were not observed, since they are not available online.

4.2.2. Type of analysis and model specification

The purpose of this study is to identify the determinants of the use of various price endings in the women handbag product category. I want to test whether the quality of the material, the visibility of the logo, the price level and the fact that the price has been increased have an impact on the probability that a pricing manager will set an odd, an even a -50 or another kind of price ending. To do this, logistic regression (logit) seems to be the most appropriate analysis as it is a kind of multiple regression with an outcome variable that is a categorical variable (i.e., odd, even, -50 or “other” ending) and predictor variables that are continuous or categorical (i.e., material, logo visibility, price, price increase, etc.) (Field, 2013).

The general base model that I want to test is the one showed in Equation 1.

Equation 1

$$Price\ ending_i = \alpha_0 + \alpha_1 Price + \alpha_2 Material + \alpha_3 Logo\ Visibility + \varepsilon_1$$

Next, I want to test price increase as an additional predictor, as showed in Equation 2.

Equation 2

$$Price\ ending_i = \alpha_0 + \alpha_1 Price + \alpha_2 Material + \alpha_3 Logo\ Visibility + \alpha_4 Price\ increase + \varepsilon_2$$

It is possible to either run a multinomial logit with a unique dependent multi-categorical variable with four modalities (i.e., 1=Even price ending, 2=50-ending, 3=odd price ending and 4=other price ending) and then interpret results compared to a baseline modality of the dependent variable (in this case I will choose to interpret results compared to an even-price baseline) or to run several logistic regressions with a dichotomous dependent variable, which takes value 1 for a specific type of price ending, 0 otherwise. While from a methodological perspective, the multinomial logit is probably a better choice, because it calculates all coefficients simultaneously, it gives less information concerning the baseline category and it does not allow to interpret coefficients within each value of the dependent variable, unless it is compared to the baseline. To provide a richer understanding of price-ending practices and their determinants I therefore present here the results of individual logistic regressions, one

for each price ending as a dummy dependent variable, but I also provide results of multinomial logits in Appendix 2.1, where we can see that main results are validated by this slightly different type of analysis.

4.2.3. Variable operationalization

For the logistic regressions, variables have been operationalized in two ways. In a first attempt, I operationalized material as a categorical ordinal variable “Material” (Canvas = 1; Leather = 2; Exotic Leather = 3). Logo visibility (i.e., is the logo visible on the handbag? Yes or no), and the various price endings have been operationalized as dummy variables. Please refer to Table 16 below for a complete list of all variables and their operationalization.

Because of the high correlations between, on the one hand, the quality of the material (when operationalized as Canvas = 1; Leather = 2; Exotic Leather = 3) and the price both in euros and in dollars and, on the other hand, the quality of the material and the logo visibility of the handbag (as shown in Table 14 below, in the cells highlighted in yellow), I regressed prices in euros and in dollars and the logo visibility dummy variable on the code for quality of the material as shown in Equation 3, Equation 4 and Equation 5 and then I only included the residuals of price (ε_3 and ε_4 , which I named Euro1 and Dollar1 respectively) and logo visibility (ε_5 , which I named Logo visibility1) not explained by the material in the regression to test all variables together, so to avoid any multicollinearity problems.

Table 14 – Pearson Pairwise correlations between variables; in yellow the correlations that might cause multicollinearity problems in the complete models.

	Material	Logo visibility	Volume	Euro	Dollar	Odd €	Even €	Odd \$	Even \$
Material	1								
Logo visibility	-,412***	1							
Volume	-,122***	,095***	1						
Euro	,375***	-,137***	0,048	1					
Dollar	,411***	-,162***	,079**	,997***	1				
Odd €	-,225***	,133***	,090***	-,180***	-,145***	1			
Even €	,257***	-,117***	,075**	,342***	,338***	-,358***	1		
Odd \$	0,009	-,110***	-,084***	-,137***	-,173***	,183***	-,173***	1	
Even \$,189***	-,137***	,088***	,292***	,370***	-,091**	,311***	-,275***	1

*** p<0.01, ** p<0.05, * p<0.1

Equation 3

$$Euro = \beta_0 + \beta_1 Material + \varepsilon_3$$

Equation 4

$$Dollar = \gamma_0 + \gamma_1 Material + \varepsilon_4$$

Equation 5

$$Logo\ visibility = \delta_0 + \delta_1 Material + \varepsilon_5$$

Using the residuals of Equations 3 and 4 gives equivalent results to using an alternative operationalization for price, which corresponds to variables calculated as prices in euros and in dollars minus the average price for the material category (Canvas, Leather and Exotic Leather) as shown in Equation 6 and 7. I call these variables *Alternative_{Euro}* and *Alternative_{Dollar}*. Similarly, using the residuals of Equation 5, gives equivalent results to using *Alternative_{Logo Visibility}*, calculated as shown in Equation 8.

Equation 6

$$Alternative_{Euro} = Euro - Average\ Euro_{Material}^{11}$$

Equation 7

$$Alternative_{Dollar} = Dollar - Average\ Dollar_{Material}^{12}$$

Equation 8

$$Alternative_{Logo\ Visibility} = Logo\ visibility - Average\ Logo\ Visibility_{Material}^{13}$$

In fact, the residuals of Equation 3 ($Euro_1 = \varepsilon_3$) are highly correlated with *Alternative_{Euro}* and the same is true for the residuals of Equation 4 ($Dollar_1 = \varepsilon_4$) with the *Alternative_{Dollar}*, as shown in Table 15, below. Similarly, the residuals of Equation 5 ($Logo\ Visibility_1 = \varepsilon_5$), are highly correlated with *Alternative_{Logo Visibility}*.

¹¹ Average price in euros for each material category.

¹² Average price in dollars for each material category.

¹³ Average of the dummy variable indicating whether the logo is visible or not for each material category.

Table 15 – Pairwise correlations between different operationalizations of variables

	Euro1	Dollar1	Logo Visibility1
Euro1	1		
Dollar1	0,991***	1	
Logo Visibility1	0,055*	0,0579*	1
<i>Alternative_{Euro}</i>	0,898***	0,844***	-0,013**
<i>Alternative_{Dollar}</i>	0,814***	0,873***	-0,021
<i>Alternative_{Logo Visibility}</i>	-0,0163	-0,0256	0,985***

*** p<0.01, ** p<0.05, * p<0.1

Given that coding materials from canvas to exotic leather as a categorical ordinal variable implies a strong assumption about the linearity of the increase in quality from one material to the other, in a second attempt to make my results more robust, I operationalized the materials and the logo visibility variables as five dummies as shown in Table 16 (last five rows of the table).

With the same intent to make my results more robust, I also ran the logistic regressions with the residuals of price in euros and in dollars on material, logo visibility, and volume¹⁴ (ε_6 and ε_7 from Equation 9 and Equation 10 respectively which I named Euro2 and Dollar2). This sometimes reduced the sample size, because handbags' volumes were not always available on brands' websites.

Equation 9

$$Euro = \zeta_0 + \zeta_1 Material + \zeta_2 Logo\ visibility + \zeta_3 Volume + \varepsilon_6$$

Equation 10

$$Dollar = \eta_0 + \eta_1 Material + \eta_2 Logo\ visibility + \eta_3 Volume + \varepsilon_7$$

¹⁴ For the dollar sample, price is slightly positively correlated to volume, the bigger the handbag, the bigger the quantity of raw material used, the higher the price.

4.2.4. List of all variables used in the regressions and their operationalization

For the remaining of Chapter 4, please refer to Table 16 for the complete list of variables and their respective operationalization.

Table 16 - List of all variables used in the regressions and their operationalization

Variable	Description	Operationalisation
Odd €	dummy odd euro	1 if odd, 0 otherwise
Odd \$	dummy odd dollar	1 if odd, 0 otherwise
Even €	dummy even euro	1 if even, 0 otherwise
Even \$	dummy even dollar	1 if even, 0 otherwise
50-end €	dummy 50 ending euro	1 if pendingeuro=50, 0 otherwise
50-end \$	dummy 50 ending dollar	1 if pendingdollar=50, 0 otherwise
Other end €	dummy all other endings euro	1 if pendingeuro !=even, odd, 50, 0 otherwise
Other end \$	dummy all other endings dollar	1 if pendingdollar !=odd, even, 50, 0 otherwise
Material	What is the handbag made of?	1=canvas; 2=leather; 3=exotic
Logo Visibility	Is the logo visible	1 if visible, 0 otherwise
pendingeuro	Price ending euro	last two digits of the price
pendingdollar	Price ending dollar	last two digits of the price
Lagged odd €	dummy lagged odd in euro	1 if price ending was odd in previous period; 0 otherwise
Lagged even €	dummy lagged even in euro	1 if price ending was even in previous period; 0 otherwise
Lagged 50 €	dummy lagged 50 in euro	1 if price ending was = 50 in previous period; 0 otherwise
Lagged other €	dummy lagged other endings in euro	1 if price ending was !=odd, even, 50 in previous period; 0 otherwise
Lagged odd \$	dummy lagged odd in dollar	1 if price ending was odd in previous period; 0 otherwise
Lagged even \$	dummy lagged even in dollar	1 if price ending was even in previous period; 0 otherwise
Lagged 50 \$	dummy lagged 50 in dollar	1 if price ending was = 50 in previous period; 0 otherwise
Lagged other \$	dummy lagged other endings in dollar	1 if price ending was !=odd, even, 50 in previous period; 0 otherwise
Price increase €	dummy price increase in euro	1 if price is increased from previous period; 0 otherwise
Price increase \$	dummy price increase in dollar	1 if price is increased from previous period; 0 otherwise
Euro1	residuals ϵ_3 of	$Euro = \beta_0 + \beta_1 Material + \epsilon_3$
Dollar1	residuals ϵ_4 of	$Dollar = \gamma_0 + \gamma_1 Material + \epsilon_4$
Euro2	residuals ϵ_6 of	$Euro = \zeta_0 + \zeta_1 Material + \zeta_2 Logo\ Visibility + \zeta_3 Volume + \epsilon_6$
Dollar2	residuals ϵ_7 of	$Dollar = \eta_0 + \eta_1 Material + \eta_2 Logo\ Visibility + \eta_3 Volume + \epsilon_7$
Logo visibility1	residuals ϵ_5 of	$Logo\ visibility = \delta_0 + \delta_1 Material + \epsilon_5$
<i>Alternative_{Euro}</i>	Price in Euro minus average price per material	$Alternative_{Euro} = Euro - Average\ Euro_{Material}$
<i>Alternative_{Dollar}</i>	Price in Dollar minus average price per material	$Alternative_{Dollar} = Dollar - Average\ Dollar_{Material}$
<i>Alternative_{Logo Visibility}</i>	Logo visibility minus average logo visibility per material	$Alternative_{Logo\ Visibility} = Logo\ Visibility - Average\ Logo\ Visibility_{Material}$
Canvas / Visible Logo	dummy Material 1 and Logo visible	1= Material 1 AND Logo visible; 0 = Otherwise
Canvas / Invisible Logo	dummy Material 1 and Logo not visible	1= Material 1 AND Logo not visible; 0 = Otherwise
Leather / Visible Logo	dummy Material 2 and Logo visible	1= Material 2 AND Logo visible; 0 = Otherwise
Leather / Invisible Logo	dummy Material 2 and Logo not visible	1= Material 2 AND Logo not visible; 0 = Otherwise
Exotic leather / Visible Logo	dummy Material 3 and Logo visible	1= Material 3 AND Logo visible; 0 = Otherwise

4.2.5. Data description – All brands Spring 2014 (cross section)

Observing prices for nine brands in Spring 2014 allowed me to have a total of 1041 observations in euros (France) and 1046 in US dollars. Most references have been observed in both currencies. As a reminder of how many prices were collected for each brand, please refer to Table 10, p. 98).

Descriptive statistics. Please refer to Table 17 for some descriptive statistics: we see how in US dollar prices are on average higher than euro prices, which can be explained by both the lower value of the US dollar currency compared to the euro and by the import taxes European brands pay to sell their goods in the USA. The only brand for which this case does not apply

is Coach, which on the contrary is subject to paying import taxes in Europe, being the company incorporated in the USA.

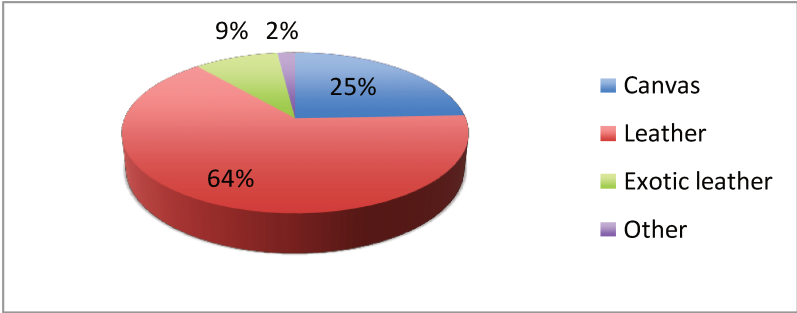
Table 17- Descriptive statistics for all brands in Spring 2014

Cross Section	Euro	Dollar
N	1041	1046
Mean price	1884,87	2690,41
Median	1450	1890
Std. Deviation	2340,912	3585,579
Minimum price	195	138
Maximum price	28500	32500
Percentile 25	950	1250
Percentile 50	1450	1890
Percentile 75	1970	2750

As I have shown in Chapter 3, odd prices are used by luxury brands, and the odd prices we observe in this sample end in -90, -95 and -98. Please refer to Table 12 (p. 101) for the percentages of use of the four types of price endings used by each of the nine brands in Spring 2014.

Lastly, please refer to Figure 9 to see the composition of the sample in terms of the materials the observed handbags are made of. As seen in the graph below, leather handbags are by far the most common, followed by canvas and exotic leather. I consider “exotic leather” python, ostrich and crocodile. If a handbag is made mainly of canvas and its details are in leather or exotic leather, I classify it under the main material, i.e., canvas. Under the “other” category, I classified all handbags made of, for example, Plexiglas, Swarovski, etc., which clearly cannot be considered as canvas or leather of any kind and for which it is also difficult to establish their preciousness and quality. For example, in a non-luxury context, Plexiglas would not normally be considered a precious material, however a Plexiglas hand clutch costs around 1000€. In my analysis, I excluded by default all items made of “other” materials, which reduces the sample size by only very units.

Figure 9 - Composition of the sample in terms of handbag material



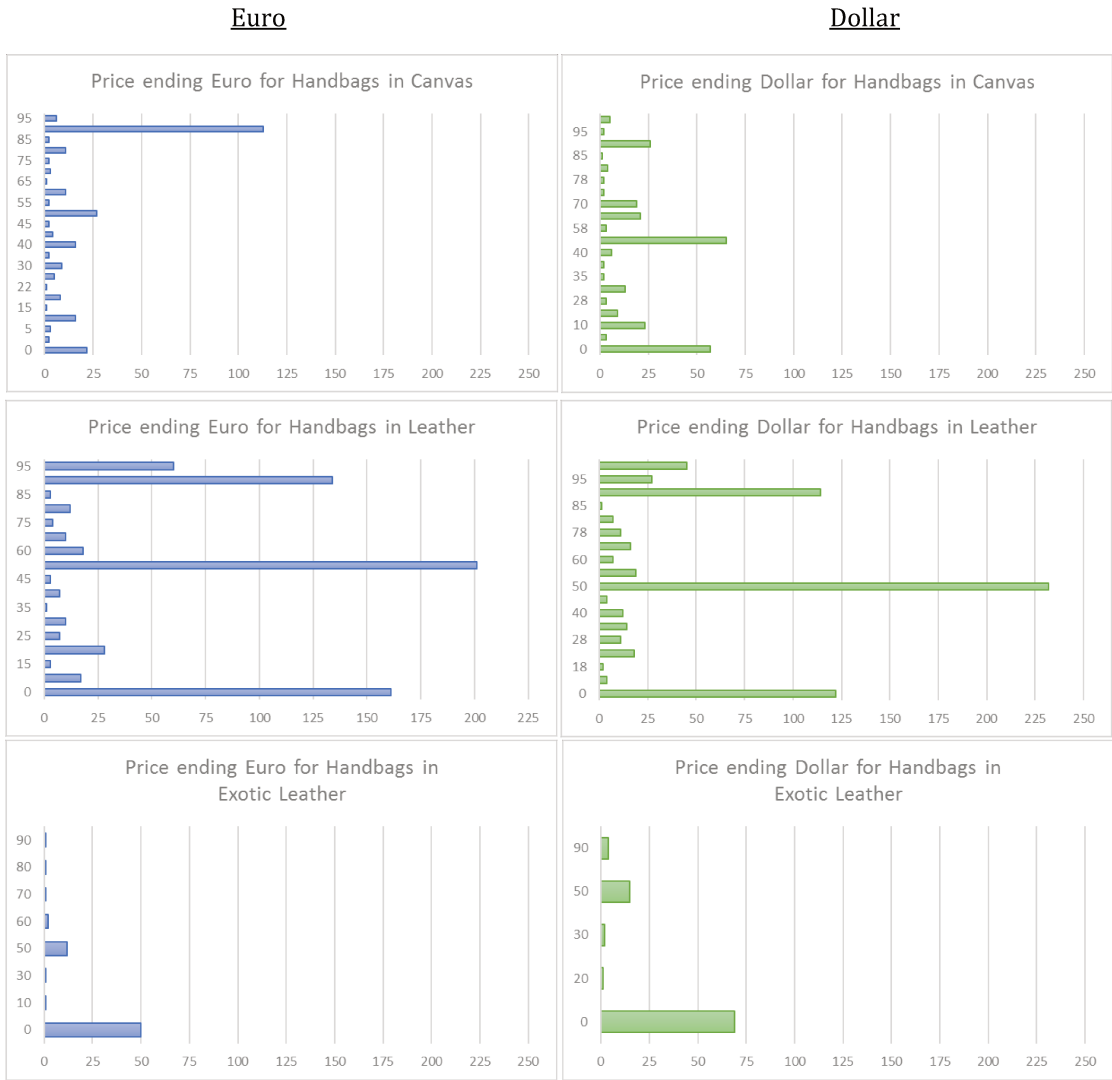
4.2.6. Data analysis – All brands Spring 2014 (cross section)

Before reporting the results of the logistic regressions, I report the distributions of price endings per material (Figure 10), which already show, both in euros and in dollars, how the material and its quality are linked to the use of price endings.

Observing price ending distributions in the first column of Figure 10 for prices in euros, there is a clear change from one material to the other: in canvas, there is a sharp prevalence of prices ending in -90; in leather, prices in -90/-95, in -50 and in -00 are all overrepresented with respect to “other” price endings, and finally, for products in exotic leather, prices ending in -00 constitute nearly the totality of observations.

In the second column of graphs, we observe price ending distributions for the dollar sample. Contrary to expectations, handbags in canvas are not mainly odd-priced, as it was the case for the euro sample, where Louis Vuitton, Gucci, Lancel and YSL were responsible for the peak of observations of 90-ending prices. In the dollar sample, Louis Vuitton does not use odd prices, while dollar prices for Lancel could not be collected, since they were not available online, which explains why we do not observe as many odd prices for canvas handbags in the dollar sample. Gucci and YSL maintain the same intense odd pricing practice as they do in the euro sample. Moving on to prices collected for leather and exotic leather handbags, we observe the same pattern as to those we observe for the euro sample: in leather, odd prices in -90/-95/-98 (-98 is solely observed for the brand Coach), in -50 and in -00 are all overrepresented with respect to “other” price endings, and finally, for products in exotic leather, prices ending in -00 are nearly the totality of observations. To sum up, even at a descriptive level price endings seem to be linked to the material of the handbag, both in euros and in dollars.

Figure 10 – Price ending distribution for each material (from top to bottom: Canvas, Leather, Exotic Leather)



Next, I show the price endings distribution per material and per price range. In each graph, we can observe three price ranges (for both samples in euros and in dollars, I created a first price range for prices going from 0 to 999\$/€, which is shown in yellow; a second price range for prices going from 1000 to 1999\$/€, which is shown in blue; a third price range for prices equal or greater than 2000\$/€, shown in red). Please refer to Figure 11 and 12.

Figure 11 – Price ending distribution per price range for each material – Euro sample¹⁵

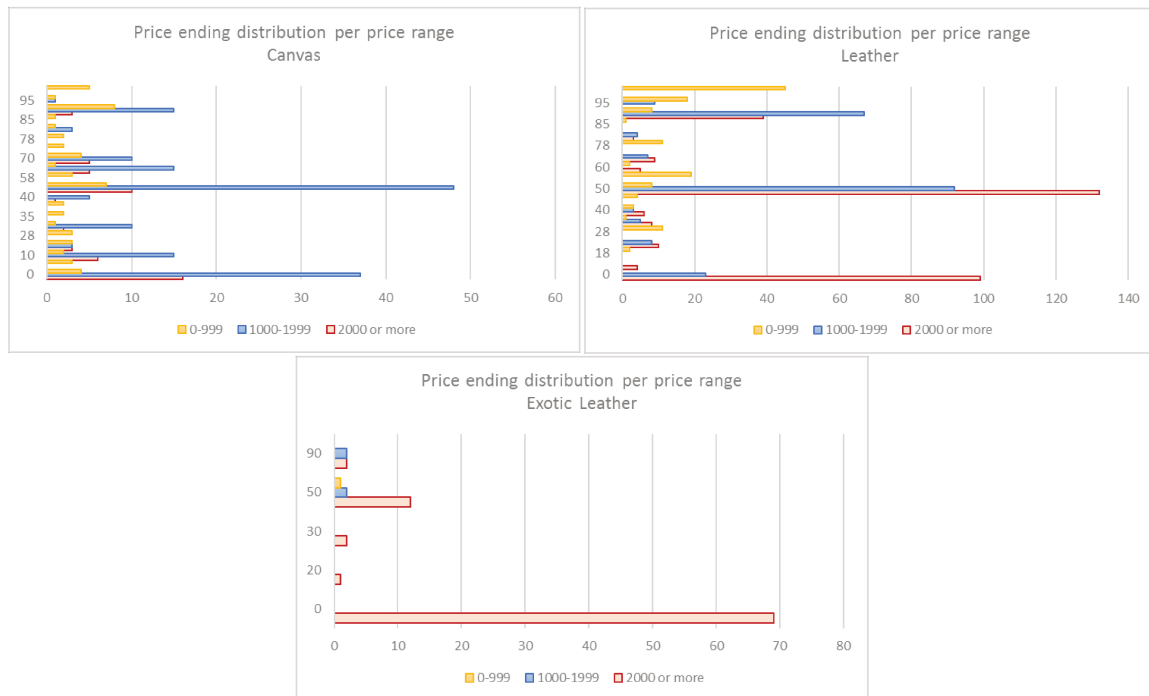


For handbags in canvas, prices ending in -90 are by far the most frequent, regardless of the price range (for both low and medium prices there are 53 prices ending in -90, 106 in total for the two price ranges, while handbags in canvas are rarely priced more than 2000 euros, given the lower quality of the material compared to leather and exotic leather). For bags in leather, we see that the distribution of price endings changes according to the price range: for lower prices (up to 1000) we observe mainly odd prices, for medium prices (between 1000 and 2000) we observe mainly prices ending in -50, but also several prices in -90 and in -00, while for higher prices (above 2000 euros) we observe a prevalence of even prices, i.e., prices ending in -00. For handbags made of exotic leather, even prices are by far the most common ones (handbags made of exotic leather are never priced less than 1000 euros in the observed sample).

From the observation of the previous sets of graphs we understand that material is a primary factor that could explain price ending distribution, while price might be secondary in that its level might be more relevant within products in leather than in handbags of other materials and in that an important part of price is explained by the material itself, as we have previously seen.

¹⁵ For price ending distributions in Euros – Canvas, the number of 90-ending prices in the 0-999 € and in the 1000-1999€ ranges is the same (53 obs*2): the two bars (yellow and blue) overlap in the graph.

Figure 12 – Price ending distribution per price range for each material – Dollar sample



Most dollar prices for canvas handbags belong to the medium price range (1000 to 1999\$), while the corresponding references mainly belong to the low-price range (0 to 999€) for the euro sample: this is mainly due to the lower currency value of dollars and to import taxes. For example, in April 2017, a Louis Vuitton Speedy Bandoulière 25 (product reference: M43501) in France costs 1780€. If we convert this price at the current exchange rate of 1,074865\$ = 1 euro (on April 20th, 2017), the same handbag in the US should be priced at 1912\$. The price we observe on the same date is 2550\$¹⁶.

Most medium-priced canvas handbags either have a price ending in -50 or in -00. Other price endings for canvas handbags seem to be evenly represented, regardless of the price level. Leather handbags that cost less than 1000\$ are more likely to be odd-priced, those whose price is between 1000 and 1999\$ are slightly more likely to have a 50-ending than being odd-priced, while those that cost more than 2000\$ are most likely to have a price that either ends in -50 or -00.

¹⁶ Sources:

<http://fr.louisvuitton.com/fra-fr/produits/speedy-bandouliere-25-monogram-empreinte-013672>
<http://us.louisvuitton.com/eng-us/products/speedy-bandouliere-25-monogram-empreinte-013672>
<http://www.x-rates.com/calculator/?from=EUR&to=USD&amount=1>

The logistic regressions in the following sections will allow us to determine which predictors are the most important in determining the likelihood of a price carrying a price ending or another. For further details, please also refer to Appendix 2.2, where I report logistic regressions for the cross-sectional data for each material separately.

4.2.6.1. Logistic regression analysis - Euros

Odd prices in Euros. In Table 18 below, I report 6 logistic regressions for prices observed in euros. The outcome variable is the probability of observing an odd ending. In the first three models (1 to 3), I ran the regressions with one predictor at a time (Euro, Material and Logo visibility); in model 4, I ran the regression with all variables together, including price as Euro1 (residuals of Equation 3), in model 5 including price as Euro 2 (residuals of Equation 9) and in model 6 including price as $Alternative_{Euro}$ (i.e., as the price minus the average price of the material category, as calculated in Equation 6). I include brand fixed effects to control for any difference at the brand level. In all 6 models, all variables are significant predictors, confirming my hypotheses: the higher the price and the higher the quality, the lower the probability of observing an odd price. Moreover, when the logo is visible, we have a higher probability of observing an odd price. Hypotheses 1_a; 1_b and 1_c are confirmed in the cross-section sample for prices in euros. Calculating the likelihood ratio¹⁷ for model 4, 5 and 6 compared to models 1 to 3, shows that the three models with three predictors are all significantly better than the three models with just one predictor (sig. 0,000). Also, comparing models 4, 5 and 6, we observe that model 5 has the smallest absolute value among the three, which means that including price as a residual of material, logo visibility and volume, gives an overall better model than including price simply as a residual of material. For all six models, the null hypothesis is that all coefficients except that of the intercept are equal to zero. Since the $Prob > \chi^2$ of the likelihood ratio test (performed by Stata automatically compared to a model with no parameters) is equal to zero, the hypothesis that all coefficients are equal to zero can be rejected at the 1 percent significance level. Therefore, the variables of the restricted models are statistically significant predictors of the probability of observing an odd price. Given that the value of coefficients for Material in models 4, 5 and 6 is much

¹⁷ Likelihood ratio = $(-2 * \log\text{-likelihood}_{\text{baseline model}}) - (-2 * \log\text{-likelihood}_{\text{new model}})$

The likelihood ratio follows a χ^2 distribution with degrees of freedom equal to the number of parameters in the new model minus the number of parameters in the baseline model (Field, 2013).. Model 4, 5 and 6 having the same number of parameters, I would obtain a likelihood ratio with 0 degrees of freedom, which is not admissible. I cannot therefore compare the model fit of models that have the same number of parameters.

bigger than the value of coefficients for the price variables, Material plays a bigger role in determining whether a price will be odd than price does, as we also observed in Figure 11.

Table 18 - Models 1 to 3 show regressions with one predictor at a time; model 4, 5 and 6 show regressions with all predictors with the three kinds of operationalization of Price (Euro1, Euro2 and AlternativeEuro respectively); Odd price in Euro is the dependent variable.

VARIABLES	(1) Odd €	(2) Odd €	(3) Odd €	(4) Odd €	(5) Odd €	(6) Odd €
Euro	-0.597*** (0.115)					
Material		-1.604*** (0.191)		-1.951*** (0.240)	-2.617*** (0.296)	-1.819*** (0.205)
Logo Visibility			1.587*** (0.211)			
Euro1				-0.260** (0.125)		
Logo Visibility1				1.004*** (0.231)	0.810*** (0.248)	
Euro2					-0.485*** (0.164)	
AlternativeEuro						-0.174* (0.102)
AlternativeLogo Visibility						1.040*** (0.231)
Constant	-15.39 (622.8)	-13.37 (364.4)	-0.0818 (0.193)	4.214*** (0.478)	5.416*** (0.571)	4.061*** (0.452)
Observations	1,029	1,005	936	916	783	916
Brand effects	YES	YES	YES	YES	YES	YES
Log Likelihood	-501.9	-473.4	-475.4	-443.8	-360.5	-444.5
Likelihood Ratio	265.5	301.5	211.1	256.1	242.4	254.6
Prob < χ^2	0	0	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Even price in Euros. The same process was adopted to run logistic regressions with the probability of observing an even price as outcome. The first three models in Table 19 show that price in euro, material and logo visibility, taken one at a time, are all significant predictors of the probability of observing an even price. Price and quality have a positive main effect, while, as expected, logo visibility has a negative main effect on the probability of observing an even ending. However, when the three variables are taken all together, the effect of logo visibility becomes non-significant. Model 4, 5 and 6 are significantly better than the first three models with just one predictor and model 5 is better than model 4 and 6, given its log likelihood closer to zero. Using Euro1 or the price of the handbag minus the average price for the material category yields equivalent results. Once again, coefficients for Material are greater than coefficients for price variables, so Material plays a bigger role in determining the probability of observing an even price than price does. Although the main effect of logo

visibility is not observed in the complete model, there is evidence that logo visibility is at least highly correlated with the likelihood of observing an even price in model 3. Hypotheses 2_a, 2_b and 2_c are confirmed in the cross-section sample for prices in euros.

Table 19 - Models 1 to 3 show regressions with one predictor; model 4, 5, 6 show regressions with all predictors; Even price in Euro is the dependent variable.

VARIABLES	(1) Even €	(2) Even €	(3) Even €	(4) Even €	(5) Even €	(6) Even €
Euro	0.847*** (0.0962)					
Material		1.738*** (0.185)		2.183*** (0.242)	2.209*** (0.249)	2.283*** (0.255)
Logo Visibility			-0.895*** (0.180)			
Euro1				0.749*** (0.119)		
Logo Visibility1				-0.0368 (0.216)	0.135 (0.223)	
Euro2					0.777*** (0.130)	
Alternative _{Euro}						0.548*** (0.0882)
Alternative _{Logo Visibility}						-0.0426 (0.208)
Constant	-3.978*** (0.460)	-4.737*** (0.519)	0.479** (0.224)	-3.950*** (0.482)	-4.051*** (0.497)	-4.457*** (0.542)
Observations	831	807	758	738	657	738
Brand effects	YES	YES	YES	YES	YES	YES
Log Likelihood	-381.5	-388.3	-408.3	-325.5	-313.6	-329.3
Likelihood Ratio	230.5	193.4	100.2	244.8	199.1	237.1
Prob < χ^2	0	0	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

50-ending and “Other” prices in Euros. Tables 20 and 21 show the logistic regressions with predictors that determine the likelihood of observing a price ending in -50 or with “other” endings respectively¹⁸. In the literature, no attention has been given to studying the determinants of the use of price endings other than odd or even. It is therefore not possible to formulate hypotheses on whether product quality, price and logo visibility might be predictors, and if so, on the direction of their effects on the likelihood of observing a price ending or another. As a result, this part of the research is more exploratory than confirmatory. From the two following tables, we observe that the three above-mentioned variables seem to also be significant predictors for 50-endings and “other” endings.

¹⁸ “Other” here means not odd, not even, not ending in -50, as previously specified.

The material quality has a positive impact on the probability of observing a 50-ending price, and this is mainly driven by the sharp increase in the use of this price ending when passing from the canvas category to the leather category: we observe approximately 25 canvas handbags with a price ending in -50, while there are nearly 200 leather handbags with this price ending, which then practically disappears in the exotic leather category (please refer to Figure 10). When looking at Figure 11, we see that 50-endings are mainly used in the leather category, and more specifically mostly for prices in the medium range from 1000 to 1999€. They are much less used in the leather category for prices greater than 2000 euros and in the exotic leather category, which is on average more expensive. This explains the negative effect of price on the probability of observing a 50-ending price. Moreover, logo visibility has a significant negative effect on the use of 50-ending prices. Overall, 50-endings seem to be used for handbags that are made of leather, that are priced between 1000 and 1999€ and that are rather discreet. If even prices are mostly observed for “inaccessible” handbags and odd prices for “accessible” ones, 50 seems to be the chosen price ending to communicate that the handbag is positioned in the middle of the product range: pricey, but not inaccessible; of good quality, but not exotic; on average discreet enough to be considered a “quiet” luxury product. In practice, 50-endings are applied mostly to handbags that can be defined as “intermediate luxury”, and they therefore constitute the transition from “accessible – odd” to “inaccessible – even” put forward in Proposition₃.

Models 4, 5 and 6 have all a significantly better fit than the first three models: the likelihood ratio tests are always significant at 0,01 level. Moreover, model 5, where price is included as a residual of material, ostentation and volume is better than the two other models, where price is introduced as a residual of material only. In model 6, the effect of price ($Alternative_{Euro}$) is lost, which is reflected in the greater absolute value of the log likelihood.

Table 20 - Models 1 to 3 show regressions with one predictor at a time; model 4, 5 and 6 show regressions with all predictors with Euro 1, Euro 2, Alternative_{Euro} respectively; The probability of observing a price ending in -50 in Euro is the dependent variable.

VARIABLES	(1) 50-end €	(2) 50-end €	(3) 50-end €	(4) 50-end €	(5) 50-end €	(6) 50-end €
Euro	-0.0351 (0.0446)					
Material		0.342** (0.159)		0.409** (0.175)	0.378** (0.181)	0.382** (0.164)
Logo Visibility			-0.652*** (0.169)			
Euro1				-0.135* (0.0726)		
Logo Visibility1				-0.608*** (0.184)	-0.640*** (0.190)	
Euro2					-0.142* (0.0827)	
Alternative _{Euro}						-0.00507 (0.0426)
Alternative _{Logo Visibility}						-0.467** (0.186)
Constant	-1.908*** (0.421)	-2.740*** (0.524)	-0.185 (0.186)	-1.379*** (0.392)	-1.306*** (0.403)	-1.186*** (0.372)
Observations	1,015	991	924	904	771	904
Brand effects	YES	YES	YES	YES	YES	YES
Log Likelihood	-523.5	-505.5	-481.3	-465.2	-419.9	-469.8
Likelihood Ratio	81.77	86.26	95.84	101.5	78.52	92.25
Prob < χ^2	0	0	0	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Other prices. As shown, in Table 21, material quality and price both have a significant negative impact on the probability of observing an “other” price. In general, it seems that this residual category of price endings is mostly used for accessible handbags, both in terms of quality and in terms of price. A possible explanation for this is that as the price increases, managers focus less on the rightmost digits, because of the increased value of the leftmost digits. This is why, overall, when prices increase we observe less odd, less 50-ending, less “other” prices and more even prices. As they increase, prices seem to be determined in a less precise way, as if the currency unit became bigger; instead of determining prices to the tens (e.g., 1410, 1420, 1430, 1440, etc.) they are determined to the hundreds (e.g. 2400, 2500, 2600, etc.). Logo visibility has no impact on the likelihood of observing a price with “other” endings. “Other” prices are used mostly like odd prices, except that their use is not influenced by logo visibility, while the use of odd prices is.

All three types of operationalization of the price variable (Euro 1, Euro 2, Alternative_{Euro}) give comparable results, with Euro2 being the variable that results in the lowest log likelihood among models 4, 5 and 6, and therefore the best model fit.

Table 21 - The probability of observing an “other” price ending in Euro is the dependent variable.

VARIABLES	(1) Other end €	(2) Other end €	(3) Other end €	(4) Other end €	(5) Other end €	(6) Other end €
Euro	-0.781*** (0.125)					
Material		-0.709*** (0.169)		-1.592*** (0.291)	-1.373*** (0.312)	-0.744*** (0.193)
Logo Visibility			0.220 (0.219)			
Euro1				-1.083*** (0.182)		
Logo Visibility1				-0.319 (0.284)	-0.392 (0.313)	
Euro2					-1.188*** (0.229)	
AlternativeEuro						-0.554*** (0.104)
AlternativeLogo Visibility						-0.282 (0.284)
Constant	3.066*** (0.471)	2.114*** (0.431)	-3.171*** (0.479)	-0.529 (0.661)	-0.899 (0.694)	-1.665*** (0.572)
Observations	871	847	801	781	648	781
Brand effects	YES	YES	YES	YES	YES	YES
Log Likelihood	-372.5	-382.4	-362.7	-314.5	-251	-325.6
Likelihood Ratio	280.5	225.8	154.6	223.9	127.8	201.5
Prob < χ^2	0	0	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Another operationalization of variables. I also ran the models with Material and Logo visibility operationalized as dummy variables (Table 22). Since the five dummies already account for the variance explained by material and logo visibility, I use Euro2, i.e., the residual of the regression of price on material and logo visibility, to orthogonalize the variables. The baseline category for the five dummy variables, against which results must be interpreted, is Canvas / Visible Logo.

Euro2 is a significant predictor of the likelihood of observing an odd, an even and an “other” ending. For a 50-ending, price was marginally significant in the previous models (please refer to Table 20, model 4). As expected, as the price increases it is less likely to observe an odd or an “other” ending, while it becomes more likely to observe an even price. The five dummies accounting for the combined effect of material and logo visibility show that as quality increases the probability of observing an even or a 50-ending price increases, while the probability of observing an odd or an “other” ending decreases compared to the no-logo canvas baseline. Odd prices are “reserved” for canvas handbags showing their logos, and their use is determined by logo visibility, too: keeping the material constant, when the logo is not visible it is slightly less likely to observe an odd price.

Table 22 - Models with all predictors with a different operationalization of material and logo visibility and prices in Euro introduced as residuals of Equations 4; please also refer to Table 16.

VARIABLES	(1) Odd €	(2) Even €	(3) 50-end €	(4) Other end €
Euro2	-0.444*** (0.164)	0.842*** (0.133)	-0.0759 (0.0810)	-1.191*** (0.233)
Canvas/ Invisible Logo		0.398 (0.795)	2.587*** (0.701)	0.583 (1.163)
Leather/ Visible Logo	-2.415*** (0.332)	2.923*** (0.380)	1.073*** (0.316)	-1.465*** (0.380)
Leather/ Invisible Logo	-3.094*** (0.337)	2.658*** (0.354)	1.484*** (0.302)	-1.130*** (0.345)
Exotic leather / Visible Logo		4.456*** (0.876)	0.783 (0.727)	
Exotic leather / Invisible Logo	-4.555*** (1.074)	4.077*** (0.542)	0.599 (0.475)	-2.802** (1.122)
Constant	2.992*** (0.329)	-2.353*** (0.371)	-1.788*** (0.336)	-2.377*** (0.515)
Observations ¹⁹	759	657	771	635
Brand effects	YES	YES	YES	YES
Log Likelihood	-356.6	-309.7	-409.5	-250.6
Likelihood Ratio	232.5	207	99.30	123.2
Prob < χ^2	0	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.2.6.2. Logistic regression analysis - Dollars

Odd price in Dollars. Table 23 below shows results of logistic regressions with the probability of observing an odd price in dollar as an outcome. Price in dollars, quality of the material, logo visibility are all significant predictors when taken individually ($p<0.01$) and they all confirm the hypotheses: the higher the price and the quality of the handbag, the less likely it is to observe an odd price. Moreover, when the logo is visible, it is more likely that the item will be odd-priced. However, when taken all together, in models 4, 5 and 6, the effect of logo visibility becomes non-significant. This is because the effect of logo visibility is already explained by material, given that the two variables are quite strongly correlated, so that, when I include Logo Visibility1 as a residual of the regression on Material, the variable does not explain the dependent variable anymore. Model 4, 5 and 6 are all significantly better than models 1 to 3. Model 4 with a higher log likelihood is better than model 5 and 6. Although there is weak evidence for the logo visibility variable in the global models, overall hypotheses 1_a; 1_b and 1_c are confirmed in the cross-section sample for prices in dollars.

¹⁹ Number of observations varies across the 4 models because some dummies have been dropped because they predicted perfect failure for the specific dependent variable.

Table 23 - Models 1 to 3 show regressions with one predictor at a time; model 4, 5 and 6 show regressions with all predictors with the different kinds of operationalization of Price (Dollar1, Dollar2 and Alternative_{Dollar} respectively); Odd price in Dollar is the dependent variable.

VARIABLES	(1) Odd \$	(2) Odd \$	(3) Odd \$	(4) Odd \$	(5) Odd \$	(6) Odd \$
Dollar	-0.662*** (0.121)					
Material		-0.632*** (0.184)		-2.027*** (0.374)	-1.859*** (0.372)	-0.749*** (0.202)
Logo visibility			0.491** (0.191)			
Dollar1				-0.839*** (0.148)		
Logo visibility1				0.0418 (0.218)	-0.211 (0.235)	
Dollar2					-0.742*** (0.151)	
Alternative _{Dollar}						-0.111** (0.0544)
Alternative _{Logo Visibility}						0.354* (0.211)
Constant	1.166*** (0.296)	1.095*** (0.403)	-0.279 (0.193)	3.031*** (0.645)	2.893*** (0.652)	1.394*** (0.440)
Observations	948	941	906	899	899	899
Brand effects	YES	YES	YES	YES	YES	YES
Log Likelihood	-415.3	-434.4	-410.1	-379.2	-384.8	-400.7
Likelihood Ratio	206	161.8	148.8	204.4	193.4	161.4
Prob < χ^2	0	0	0	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Even price in Dollars. In Table 24, we observe the results of the logistic regressions with the probability of observing an even price as outcome for the dollar sample. Price in dollars, the quality of the material and the logo visibility are significant predictors of the probability of observing an even price: the higher the price and the quality, the more likely we are to observe an even price, and when the logo is visible, it is less likely to observe an even price. This is true both when the predictors are taken individually and when they are taken together in model 4 and 6. However, logo visibility becomes non-significant in model 5. We have in this case partial, but strong, evidence that logo visibility is a significant predictor. Models 4 to 6 are significantly better than model 1 to 3 according to the likelihood ratio test ($\chi^2 = 0,000$). Even model 6, whose log likelihood is only slightly closer to zero than that of model 1 (-452.3 vs. -456.2), passes the likelihood ratio test compared to model 1 with a $\chi^2(7,8; 2df)$ which yields a p-value of 0,02. All six models are significantly better than a baseline model in which only the constant is introduced as a predictor. Overall, hypotheses 2_a; 2_b and 2_c are also confirmed in the cross-section sample for prices in dollars.

Table 24 - Models 1 to 3 show regressions with one predictor at a time; model 4, 5 and 6 show regressions with all predictors with the different kinds of operationalization of Price (Dollar1, Dollar2 and Alternative_{Dollar} respectively); Even price in Dollar is the dependent variable.

VARIABLES	(1) Even \$	(2) Even \$	(3) Even \$	(4) Even \$	(5) Even \$	(6) Even \$
Dollar	0.385*** (0.0501)					
Material		1.119*** (0.148)		1.238*** (0.171)	1.298*** (0.176)	1.164*** (0.157)
Logo visibility			-0.968*** (0.175)			
Dollar1				0.326*** (0.0583)		
Logo visibility1				-0.412** (0.203)	-0.330 (0.212)	
Dollar2					0.264*** (0.0574)	
Alternative _{Dollar}						0.117*** (0.0336)
Alternative _{Logo Visibility}						-0.597*** (0.199)
Constant	-5.788*** -1.010	-7.210*** -1.046	-4.564*** -1.005	-7.017*** -1.058	-7.215*** -1.061	-7.194*** -1.053
Observations	1,045	1,025	1	980	899	980
Brand effects	YES	YES	YES	YES	YES	YES
Log Likelihood	-456.2	-473.1	-495.5	-434.1	-393.9	-452.3
Likelihood Ratio	251.2	188.1	138	231.8	219.3	195.4
Prob < χ^2	0	0	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

50-ending and “Other” prices in Dollars. Tables 25 and 26 show the logistic regressions with predictors that determine the likelihood of observing a price ending in -50 or with “other” endings respectively for the sample of prices in dollars. As for the analysis of the euro sample, this part of the research is more exploratory than confirmatory, given the lack of attention given to price endings other than even and odd in the literature.

While for the sample in euros, the three variables that predict the use of odd and even prices are also predictors for 50-endings and “other” endings, for the sample in dollars, this is not always the case.

In Table 25, we observe how only price is a significant predictor of the likelihood of observing a 50-ending price: the higher the price, the lower the probability of having a price ending in -50, although the estimated coefficients are very small, which can be interpreted as a very weak effect, despite the high level of significance.

Table 25 - Models 1 to 3 show regressions with one predictor at a time; model 4, 5 and 6 show regressions with all predictors with the different kinds of operationalization of Price (Dollar1, Dollar2 and adj_Dollar respectively); Likelihood of observing a price ending in -50 in Dollar is the dependent variable.

VARIABLES	(1) 50-end \$	(2) 50-end \$	(3) 50-end \$	(4) 50-end \$	(5) 50-end \$	(6) 50-end \$
Dollar	-0.0777*** (0.0301)					
Material		-0.0114 (0.141)		0.0364 (0.150)	0.0263 (0.156)	0.0178 (0.144)
Logo visibility			-0.0394 (0.164)			
Dollar1				-0.101*** (0.0371)		
Logo visibility1				-0.0781 (0.180)	-0.0501 (0.187)	
Dollar2					-0.0765** (0.0367)	
Alternative _{Dollar}						-0.0324 (0.0293)
Alternative _{Logo Visibility}						0.0482 (0.181)
Constant	0.294* (0.177)	0.160 (0.327)	0.0782 (0.189)	-0.123 (0.348)	-0.0641 (0.359)	0.0265 (0.337)
Observations	932	912	909	889	808	889
Brand effects	YES	YES	YES	YES	YES	YES
Log Likelihood	-551.7	-542.1	-539	-519.8	-473.7	-524.2
Likelihood Ratio	99.40	87.50	88.55	95.81	37.37	87.02
Prob < ^2	0	0	0	0	1.49e-06	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

If we go back to Figure 10 and 12, where the distributions of price endings per material and per price range were showed, we see that 50-endings are only used when handbags are made of canvas or of leather and mostly for prices that are either medium (between 1000 and 2000) or high (higher than 2000).

I therefore run a logistic regression substituting the Dollar and Material variables of Table 25 with dummy variables, as explained in footnote 12, to obtain the results shown in Table 25b. Being in the medium or high price range (i.e., having a price equal or greater than 1000) significantly increases the likelihood of having a price ending in -50 (the baseline here is the lowest price range, up to 999 dollars) and so does the fact that the handbag is made of leather compared to handbags made of exotic leather. Being made of canvas does not have a positive impact on the probability of having a 50-ending price, despite observing numerous 50-endings in this material category.

Table 25b²⁰ - Alternative operationalization of price and material variables to predict the likelihood of observing a price ending in -50 in dollars.

VARIABLES	(1) 50-end \$
Price 1000\$-1999\$	1.310*** (0.329)
Price > 2000\$	1.262*** (0.337)
Canvas	0.595 (0.382)
Leather	1.012*** (0.328)
Logo Visibility1	0.105 (0.184)
Constant	-2.082*** (0.482)
Observations	889
Brand effects	YES
Log Likelihood	-507.9
Likelihood Ratio	119.6
Prob < χ^2	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Other prices in Dollars. In Table 26 below, we observe the results of the logistic regressions with the probability of observing a price ending other than odd, even and 50 as the dependent variable. Similarly to what we observe for the sample in euros, also here price and material are significant predictors. In particular, the higher the price and the higher the quality, the more it is unlikely to observe a price that has an “other” ending. Logo visibility is not a significant predictor, except when taken individually, as it was not a significant predictor for other price endings in euros. In this respect, prices seem to be determined with a similar rationale to that used by pricing managers for prices observed in euros, in that as prices increase, rightmost digits become less important and leftmost digits carry most of the value. This is why we tend to observe more prices in -00 than prices with any other ten (-10, -20, -20, ..., -90). The only exception is -50, which is more likely to be used as prices go up, possibly because it constitutes a compromise, a middle-ground of detail between the tens and the hundreds. Also, we must notice that “medium” luxury handbags are more expensive in dollars than in euros.

²⁰ Price 1000\$-1999\$: dummy=1 if price in dollar is >999 and <2000; 0 otherwise.
 Price > 2000\$: dummy=1 if price in dollar is >=2000; 0 otherwise.
 Canvas: dummy=1 if Material is canvas; 0 otherwise.
 Leather: dummy=1 if Material is leather; 0 otherwise.

Table 26 - Models 1 to 3 show regressions with one predictor at a time; model 4, 5 and 6 show regressions with all predictors with the different kinds of operationalization of Price (Dollar1, Dollar2 and Alternative_{Dollar} respectively); Likelihood of observing a price with “other” endings in Dollar is the dependent variable.

VARIABLES	(1) Other end \$	(2) Other end \$	(3) Other end \$	(4) Other end \$	(5) Other end \$	(6) Other end \$
Dollar	-0.394*** (0.0777)					
Material		-0.939*** (0.168)		-1.265*** (0.224)	-1.209*** (0.220)	-0.947*** (0.170)
Logo visibility			0.757*** (0.209)			
Dollar1				-0.277*** (0.0836)		
Logo visibility1				0.101 (0.244)	-0.0309 (0.252)	
Dollar2					-0.242*** (0.0820)	
Alternative _{Dollar}						-0.143*** (0.0546)
Alternative _{Logo Visibility}						0.174 (0.245)
Constant	-0.473 (0.315)	0.366 (0.406)	-1.936*** (0.311)	0.830* (0.474)	0.740 (0.469)	0.362 (0.409)
Observations	899	879	874	854	773	854
Brand effects	YES	YES	YES	YES	YES	YES
Log Likelihood	-376.6	-380.7	-389.5	-368	-360.6	-372.3
Likelihood Ratio	380.4	356.1	303.3	331.2	277.8	322.7
Prob < χ^2	0	0	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Another operationalization of variables. What we observe for this alternative operationalization of material and logo visibility is similar to what we have seen for the euro sample. Price as Dollar2 is a significant predictor for all price endings except 50-endings and it has a positive impact on the probability of observing an even price, but a negative one on the probability of observing an odd price or an “other” price. Once again, the role of logo visibility in determining the likelihood of observing one kind of price ending or another is not clear, as in certain cases it increases it, in others it decreases within the same material category. What is clear is that, compared to handbags made of canvas with a visible logo, all other handbags are less likely to be odd-priced or to have a price ending that is “other” and more likely to be even-priced. The use of 50-endings in the dollar sample also seems to be reserved for intermediate luxury handbags in that they are used especially for leather handbags regardless of the logo visibility, and they are also less likely to be used for discreet exotic-leather handbags, i.e., for more inaccessible handbags. Please refer to Table 27.

Table 27 - Models with all predictors with a different operationalization of material and logo visibility and prices in Dollar introduced as residuals of Equations 5; please refer to Table 16.

VARIABLES	(1) Odd \$	(2) Even \$	(3) 50-end \$	(4) Other end \$
Dollar2	-0.682*** (0.157)	0.212*** (0.0620)	-0.0225 (0.0400)	-0.225*** (0.0858)
Canvas/ Invisible Logo	1.098 (0.686)	0.362 (0.655)	0.187 (0.698)	-0.413 (0.775)
Leather/ Visible Logo	-1.346*** (0.499)	0.586** (0.291)	0.480* (0.253)	-1.207*** (0.298)
Leather/ Invisible Logo	-1.287*** (0.412)	0.967*** (0.259)	0.508** (0.241)	-1.134*** (0.268)
Exotic leather / Visible Logo	-3.400*** (1.117)	1.633*** (0.574)	0.692 (0.545)	-2.432** (1.065)
Exotic leather / Invisible Logo	-4.213*** (0.937)	3.352*** (0.433)	-0.796* (0.468)	-2.686*** (0.765)
Constant	0.558 (0.377)	-5.477*** (1.030)	-0.452 (0.282)	-0.468 (0.330)
Observations	899	899	808	773
Brand effects	YES	YES	YES	YES
Log Likelihood	-381.8	-385.9	-466.9	-360.3
Likelihood Ratio	199.2	235.4	50.95	278.4
Prob < ^2	0	0	7.13e-08	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.2.7. Data description – Gucci and Louis Vuitton over 4 seasons

For Louis Vuitton and Gucci, I collected prices over two years, which allowed me to monitor the evolution of prices over time (Louis Vuitton and Gucci usually increase prices twice a year, i.e., every time they also present and introduce a new collection).

Eighty percent of the prices range between 660 euros (983 dollars) and 3435 euros (4700 dollars) for Louis Vuitton handbags, whereas 80% of the prices range between 791 euros (1100 dollars) and 2790 euros (5900 dollars) for Gucci bags. The average price observed for Louis Vuitton over the 4 seasons is 2040,90 euros (2853,63 dollars) and for Gucci 1809,55 euros (3444,60 dollars). For season-specific descriptive statistics, please refer to Table 28 and Table 29. On average, Louis Vuitton handbags are more expensive than Gucci handbags.

Table 28 - Descriptive statistics for observed prices for Louis Vuitton

LV - Euro	Season 1	Season 2	Season 3	Season 4
N	318	337	314	283
Mean	1556,52	1999,98	2266,36	2383,75
Median	1210	1250	1295	1330
Std. Deviation	1075,88	2482,003	3486,688	3897,431
Minimum	200	200	204	210
Maximum	7450	23000	28500	35500
Percentile 25	863,75	945	940	970
Percentile 50	1210	1250	1295	1330
Percentile 75	1942,5	2270	2222,5	2150

LV - Dollar	Season 1	Season 2	Season 3	Season 4
N	292	323	314	296
Mean	2084,62	2920,4	3106,39	3271,27
Median	1710	1840	1960	2010
Std. Deviation	1239,305	3654,769	3820,869	4112,399
Minimum	110	295	310	310
Maximum	8250	31500	32500	32500
Percentile 25	1270	1340	1410	1430
Percentile 50	1710	1840	1960	2010
Percentile 75	2722,5	3000	3175	3287,5

Table 29 - Descriptive statistics for observed prices for Gucci

GUCCI - Euro	Season 1	Season 2	Season 3	Season 4
N	184	217	212	168
Mean	1782,31	1786,36	1750,47	1943,87
Median	1415	1400	1450	1570
Std. Deviation	2497,725	2100,513	1787,371	1991,974
Minimum	265	420	420	450
Maximum	26000	24000	24000	24000
Percentile 25	1045	992,5	995	1062,5
Percentile 50	1415	1400	1450	1570
Percentile 75	1830	1850	1950	2300

GUCCI - Dollar	Season 1	Season 2	Season 3	Season 4
N	269	279	285	184
Mean	3762,88	3115,56	3470,47	3438,13
Median	2050	1950	1950	2100
Std. Deviation	5775,523	4227,738	4921,334	5343,777
Minimum	395	495	495	520
Maximum	37400	32500	32500	41500
Percentile 25	1390	1450	1450	1392,5
Percentile 50	2050	1950	1950	2100
Percentile 75	3190	2990	2995	3100

As we can see in Table 28 and Table 29, the average price for Louis Vuitton (euros and dollars) and Gucci (euros) tend to increase over the four observed seasons. This is coherent with what suggested by Bastien & Kapferer (2012) who recommend that luxury firms always increase the average price of their offer. The only exception is Gucci (dollars), for which the average price decreases from Season 1 to Season 4. Since prices of carried-over items were always increased except from season 2 to season 3 for Gucci (both euros and dollars, for which prices were kept equal), for the other seasons this means that while the maintained items' prices were increased, new lower-priced references were added each season to the product range, which goes against what Bastien & Kapferer (2012) suggest doing.

Frequency of price endings for LV and Gucci. In Table 30 and Table 31, I report the percentages of each type of price endings (odd, even, -50 and “other”) for Louis Vuitton and Gucci season by season in euros and dollars. We can observe that Louis Vuitton usually has a very low percentage of odd prices (less than 10%) in both euros and in dollars (except for season 3 in euros where odd prices constitute 32% of observations), while for Gucci they are quite common during the first 3 seasons (from around 20% to 35% in euros and in dollars) while they decrease drastically in the last season, where we only observe 8% of odd prices in euros and 13% in dollars. If price endings had been randomly determined, then we would observe approximately 1% of prices ending in -00, 1% of prices ending in -90 and 1% of prices ending in -95. As for even endings, we see that both brands consistently use more even endings than we would expect to observe if price endings were randomly determined.

Because of the limited use of odd endings in certain cases, it might be difficult to confirm hypotheses concerning odd pricing determinants due to the scarce number of observations. It should be easier, in general, to confirm hypotheses regarding the determinants of even endings, because the number of observations is higher for all seasons and for both brands.

As for the use of 50-ending and “other” prices, they constitute an important part of the sample for both currencies. Together with what has been observed for the cross-sectional data, this suggests that more attention should be paid to price endings that have traditionally been ignored, since, when taken together, they constitute on average at least 43% of the sample for Louis Vuitton (dollar) and 66% of the sample for Gucci (euros).

Table 30 - Types of price endings observed for Louis Vuitton, in euros (on top) and in dollars (at the bottom), in absolute values on the left and in percentages on the right.

Louis Vuitton						
Euro	-00	-50	-90	-95	Other	Total
Season 1	55	37	20	3	203	318
Season 2	97	91	16	2	131	337
Season 3	77	44	99	1	93	314
Season 4	49	28	9		197	283
Total	278	200	144	6	624	1252

Euro	Even (-00)	-50	Odd (-90&-95)	Other	Total
Season 1	17%	12%	7%	64%	100%
Season 2	29%	27%	5%	39%	100%
Season 3	25%	14%	32%	30%	100%
Season 4	17%	10%	3%	70%	100%
Total	22%	16%	12%	50%	100%

Dollar	-00	-50	-90	-95	Other	Total
Season 1	42	48	18	4	180	292
Season 2	67	52	12	2	190	323
Season 3	93	79	14		128	314
Season 4	84	73	14		125	296
Total	286	252	58	6	623	1225

Dollar	Even (-00)	-50	Odd (-90&-95)	Other	Total
Season 1	14%	16%	8%	62%	100%
Season 2	21%	16%	4%	59%	100%
Season 3	30%	25%	4%	41%	100%
Season 4	28%	25%	5%	42%	100%
Total	23%	21%	5%	51%	100%

Table 31 – Types of price endings observed for Gucci, in euros (on top) and in dollars (at the bottom), in absolute values on the left and in percentages on the right.

Gucci						
Euro	-00	-50	-90	-95	Other	Total
Season 1	38	43	33	23	47	184
Season 2	83	73	32	9	20	217
Season 3	76	79	34	8	15	212
Season 4	70	71	12	2	13	168
Total	267	266	111	42	95	781

Euro	Even (-00)	-50	Odd (-90&-95)	Other	Total
Season 1	21%	23%	30%	26%	100%
Season 2	38%	34%	19%	9%	100%
Season 3	36%	37%	20%	7%	100%
Season 4	42%	42%	8%	8%	100%
Total	34%	34%	20%	12%	100%

Dollar	-00	-50	-90	-95	Other	Total
Season 1	67	61	70	25	46	269
Season 2	84	64	58	12	61	279
Season 3	94	75	66	13	37	285
Season 4	74	72	21	2	15	184
Total	319	272	215	52	159	1017

Dollar	Even (-00)	-50	Odd (-90&-95)	Other	Total
Season 1	25%	23%	35%	17%	100%
Season 2	30%	23%	25%	22%	100%
Season 3	33%	26%	28%	13%	100%
Season 4	40%	39%	13%	8%	100%
Total	31%	27%	26%	16%	100%

In the following pages (Figures 13 and 14), please find the price endings distributions (two rightmost digits) for both brands, in euros and in dollars, season by season. As we can see, Gucci reproduces the same distribution of price endings previously observed for the cross-section data, with three very clear peaks at price endings -00, -50 and -90/-95 for the four seasons in both euros and in dollars. Please refer to Figure 13 below.

On the contrary, when we look at LV’s’s price endings’ distribution for the four seasons in euros and in dollars, we see that the patterns are less defined, as described in Table 32.

Table 32 – Description of price ending distributions for Louis Vuitton season by season

	Euros	Dollars
Season 1	No clear peak in the distribution.	More observations of -00, -50 and -80 endings, but the peaks are not clearly defined.
Season 2	Two peaks at -00 and at -50 but not at -90/-95.	Two peaks at -50 and at -00 but not at -80. The peaks are not standing out, as there are other price endings that are quite common like prices ending in -10.
Season 3	Odd prices are by far the most common, and there are two smaller peaks at -00 and at -50.	In season 3 and season 4 there are two very clear peaks in the distribution at -00 and at -50.
Season 4	The only peak is at -00, while the other price endings seem to be more homogeneously distributed.	

In general, we can say that whoever sets the prices for Louis Vuitton tries to cover all prices between one hundred and another, setting prices at -10, -20, -30, etc. By doing so they also happen to have prices ending in -90, but there seems to be a less clear intention to set prices at -90 to stay below a given threshold. On the contrary, when we observe price endings distributions of Gucci, it seems clear that whoever is setting prices is intentionally skipping price endings that are not -00, -50, -90/-95, which suggests that they are concerned about price thresholds.

Sample composition by material. Lastly, please refer to Figure 15 below to see the composition of the samples in terms of the materials the observed handbags are made of. As seen in the two graphs below, leather handbags are by far the most common for Gucci, followed by exotic leather and canvas. For Louis Vuitton, the sample is instead constituted mostly by leather and canvas handbags (both represent 43% of observations each), while exotic leather handbags only represent 13% of the sample. Like for the cross-section, I consider “exotic leather” python, ostrich and crocodile. If a handbag is made mainly of canvas and its details are in leather or exotic leather, I classify it under the main material, i.e., canvas. Under the “other” category, I classified all handbags made of, for example, Plexiglas, Swarovski, etc., In my analysis, I excluded by default all items made of “other” materials, which reduces the sample size by only very few units.

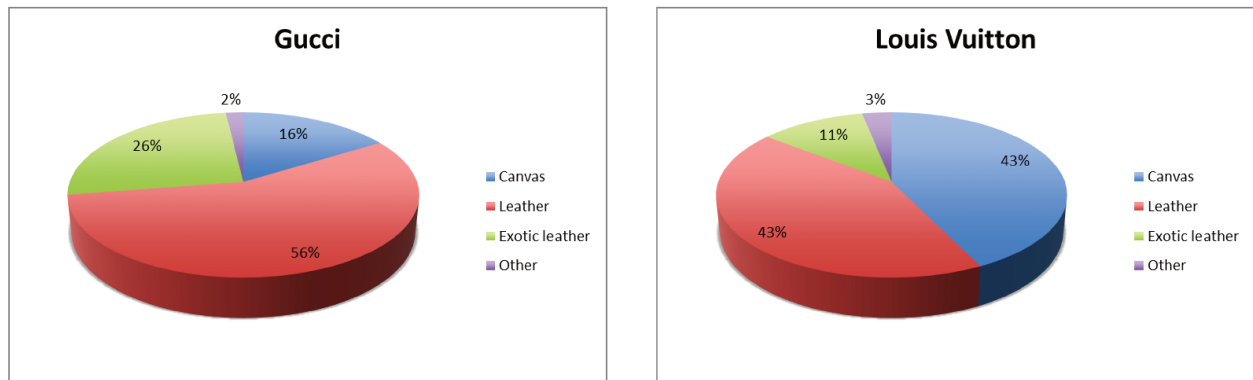
Figure 13 - Price ending distribution for Gucci Season 1 to 4 – Euro (on the left) and Dollars (on the right)



Figure 14 - Price ending distribution for LV Season 1 to 4 – Euro (on the left) and Dollars (on the right)



Figure 15 - Composition of the samples in terms of handbag material



4.2.8. Data analysis – longitudinal data over 4 seasons (2 years)

For both brands, I operationalized independent and dependent variables like I did for the cross-section. Please refer to Table 16, on page 104 . In a first step of my analysis, I first ran the logistic regressions treating each season in the panel as a cross-section. Please refer to Appendix 2.3 to see the details of these analyses. The second step was to analyze the data as longitudinal data for Louis Vuitton and Gucci separately controlling for season effects and then for the two brands together, controlling for both season and brands effects.

4.2.8.1. Louis Vuitton

Analysis of longitudinal data. After analyzing the data as if each season were a cross section (Appendix 2.3.1), I ran a regression treating the data as a panel, including season effects to control for differences at the season level. All seasons together, the hypotheses that a higher quality material will have a negative effect on the probability of observing an odd price and a positive one on the probability of observing an even price are confirmed at 1% significance level, in euros and dollars. Logo visibility has a positive effect on the probability of observing an odd price and a negative effect on the probability of observing an even price, as expected, at 1% significance level for euros only. Surprisingly, while logo visibility does not impact the decision of setting an even ending in dollars, it has a significant negative effect on the probability of observing an odd price, which limitedly disconfirms the hypothesis that when the logo is visible I should more easily observe an odd price. Prices in both euros and in dollars have the expected significant effects (except for Euro1 which is a non-significant predictor of the use of odd-endings): higher prices come with an even ending and lower prices come with an odd ending. Please refer to Table 33. The results are practically identical Euro1 with is replaced with Euro2 and Dollar1 with Dollar2.

Table 33 – Analysis of longitudinal data for LV; dependent variables are odd endings in euros and in dollars, then even endings.

VARIABLES	(1) Odd €	(2) Odd \$	(3) Even €	(4) Even \$
Material	-1.399*** (0.201)	-1.754*** (0.443)	1.714*** (0.132)	0.944*** (0.117)
Logo visibility1	1.704*** (0.468)	-0.886** (0.415)	-0.906*** (0.180)	-0.164 (0.192)
Euro1	0.00364 (0.0796)		0.653*** (0.0798)	
Dollar1		-0.728*** (0.168)		0.390*** (0.0547)
Constant	-0.801** (0.318)	-0.534 (0.549)	-4.315*** (0.279)	-3.074*** (0.243)
Observations	1,252	1,225	1,252	1,225
Season effects	YES	YES	YES	YES
Log Likelihood	-343.4	-232.6	-490.9	-575.5
Likelihood Ratio	231	37.21	344	180.5
Prob < χ^2	0	1.61e-06	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In Table 34 below, we observe the highly significant effect of Material on the probability of observing a price ending in -50 or with an “other” price ending: the better the quality of the material the handbag is made of, the more likely we are to observe a price ending in -50 and the less we are likely to observe a price that is not odd, even or ending in -50, both for prices in euros and in dollars. The same results were found for the cross-section, so it seems that the use of these previously uninvestigated price endings is established.

Table 34 – Analysis of longitudinal data for LV; dependent variables are 50-endings in euros then in dollars, then “other” endings.

VARIABLES	(1) 50 end €	(2) 50 end \$	(3) Other end €	(4) Other end \$
Material	0.394*** (0.0972)	0.558*** (0.0942)	-1.954*** (0.161)	-2.470*** (0.188)
Logo visibility1	0.0675 (0.198)	0.0838 (0.185)	0.131 (0.186)	0.126 (0.194)
Euro1	-0.0751* (0.0399)		-0.979*** (0.0988)	
Dollar1		-0.0188 (0.0228)		-0.892*** (0.0764)
Constant	-2.706*** (0.242)	-2.467*** (0.217)	3.288*** (0.258)	3.725*** (0.282)
Observations	1,252	1,225	1,252	1,225
Season effects	YES	YES	YES	YES
Log Likelihood	-517.5	-597.7	-658.9	-661.7
Likelihood Ratio	64.91	49.73	417.8	374.4
Prob < χ^2	0	5.32e-09	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Logo visibility does not play any role in determining the use of 50- or of “other” endings in either samples. Price is only marginally significant with a negative effect on the probability of observing a 50-ending price in Model 1 and is not a significant predictor in Model 2. On the contrary, price both in euros and in dollars is a highly significant negative predictor of the use of “other” endings, as previously observed for cross-sectional data.

Are increased prices more likely to be odd? Given that odd prices have a connotation such that consumers are less likely to notice that an odd price has been increased compared to even prices (Schindler, 1984), I hypothesized that odd prices might be used by luxury brands to “hide” or dissimulate a price increase from the previous season. I was not able to confirm the hypothesis that when a price for a given product is increased from one season to the next it is more likely that the resulting price will be odd. The coefficients for the dummy variable accounting for price increase are not significantly different from zero in either currency, as we can observe in Table 35: a price increase from the previous season does not have any effect on the likelihood of observing an odd price.

Table 35 – Logistic regressions with odd prices in euros (1) and in dollars (2) as dependent variables with dummy variables that account for price increase from previous season as (non-significant) predictors.

VARIABLES	(1) Odd €	(2) Odd \$
Price increased from previous period (Euro) ²¹	0.635 (0.404)	
Material	-1.645*** (0.253)	-1.981*** (0.599)
Logo Visibility1	1.661*** (0.592)	-0.970* (0.536)
Euro1	0.109 (0.0855)	
Price increased from previous period (Dollar) ²¹		-0.604 (0.683)
Dollar1		-0.871*** (0.228)
Constant	-2.268*** (0.667)	-0.530 (0.742)
Observations	806	801
Season effects	YES	YES
Log Likelihood	-232.6	-139.7
Likelihood Ratio	209.5	26.34
Prob < ^2	0	0.000192

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

²¹ Dummy variable = 1 if price has been increased from previous period, 0 otherwise.

4.2.8.2. Gucci

As for Louis Vuitton, data were first analyzed as cross sections (please refer to Appendix 2.3.2), then analyzed as a panel with season-fixed effects to control for any difference at the season level.

Analysis of longitudinal data. All seasons together, the hypotheses that a higher quality material will have a negative effect on the probability of observing an odd price and a positive one on the probability of observing an even price are confirmed at 1% significance level for both currencies. When using Euro1 and Dollar1, the effect of logo visibility on the probability of observing an odd or an even ending is lost. However, these effects are significant when including price as Euro2 and Dollar2, as reported in Table 36. The effects of Material and Price remain unchanged in both regressions. As expected, in euros, logo visibility has a positive effect on the probability of observing an odd price and a negative one on the probability of observing an even price. In dollars, logo visibility does not have any significant effect on the probability of observing an odd price, although we observe a highly significant and negative effect on the probability of observing an even price. As predicted, a discreet handbag is more likely to be even-priced than a prominent handbag. The expected effect of price both in euros and in dollars is confirmed at 1% significance level. Since the Prob > chi2 is equal to zero, the hypothesis that all coefficients are equal to zero can be rejected at the 1% significance level. The proposed models are better than corresponding models with just the constants as predictors.

Table 36 - Analysis of longitudinal data for Gucci; dependent variables are odd endings in euros and in dollars, then even endings.

VARIABLES	(1) Odd €	(2) Odd \$	(3) Even €	(4) Even \$
Material	-1.531*** (0.278)	-1.042*** (0.178)	2.512*** (0.236)	2.295*** (0.165)
Logo visibility1	0.420** (0.211)	0.140 (0.167)	-0.415** (0.188)	-0.746*** (0.188)
Euro2	-1.005*** (0.219)		1.083*** (0.179)	
Dollar2		-0.159*** (0.0507)		0.103*** (0.0290)
Constant	1.816*** (0.499)	1.411*** (0.350)	-6.272*** (0.519)	-6.329*** (0.431)
Observations	763	1,002	763	1,002
Season effects	YES	YES	YES	YES
Log Likelihood	-343.7	-526.7	-381.8	-460
Likelihood Ratio	74.60	91.84	218	330.8
Prob < ^2	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 36 above shows the effects of Material, Logo visibility and Price (both in euros and in dollars) on the likelihood of observing a price ending in -50 and with an “other” ending. Interestingly, while Material had a positive and significant effect on the likelihood of observing a price ending in -50 (both in euros and in dollars) for Louis Vuitton, for Gucci it has a negative and significant effect (in euros, but non-significant in dollars). However, if we look at how 50-ending prices are distributed regardless of season between the three classes of material (Table 37 below), we see that Leather is for both brands and for both currencies the material with the highest number of prices ending in -50. It seems therefore that, despite the coefficient sign we observe in Model 1 for Euro2 in Table 36, this price ending is often associated with intermediate quality handbags.

Table 37 – Distribution of 50-endings across type of handbag material.

		Euro		Dollar	
		Gucci	Louis Vuitton	Gucci	Louis Vuitton
Canvas	-50	31	75	47	86
Leather	-50	204	89	193	129
Exotic Leather	-50	17	24	19	30

The effect of material on the likelihood of observing “other” price endings is instead consistent with what we observed for Louis Vuitton and for all brands in the cross-sectional data of Spring 2014, i.e., it is negative and highly significant.

Logo visibility has no effect on the probability of observing a 50- or “other” ending for Louis Vuitton, and it only had a negative and significant effect on the probability of observing a 50-ending in euros (but not in dollars) for cross-sectional data. For Gucci, we observe the same negative effect and a positive significant effect on the probability of observing “other” price endings in dollars, but not in euros.

Lastly, price, both in euros and in dollars, has a negative and significant effect on the probability of observing 50- and “other” endings, as it did for Louis Vuitton and for the cross-sectional data.

Table 38 - Analysis of longitudinal data for Gucci; dependent variables are 50-endings in euros then in dollars, then “other” endings.

VARIABLES	(1) 50-end \$	(2) 50-end \$	(3) Other end €	(4) Other end \$
Material	-0.454*** (0.165)	-0.782*** (0.159)	-4.447*** (0.570)	-0.930*** (0.154)
Logo visibility1	-0.354** (0.180)	-0.179 (0.165)	-0.0490 (0.299)	0.637*** (0.199)
Euro1	-0.336*** (0.122)		-2.169*** (0.377)	
Dollar1		-0.130*** (0.0428)		-0.0160 (0.0311)
Constant	-0.408 (0.351)	0.282 (0.326)	6.483*** (0.934)	0.234 (0.331)
Observations	763	1,002	763	1,002
Season effects	YES	YES	YES	YES
Log Likelihood	-468.7	-550.3	-207.9	-401.9
Likelihood Ratio	33.49	61.16	157.8	72.88
Prob < χ^2	8.42e-06	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Are increased prices more likely to be odd? The last hypothesis to test is whether a price that has been increased is more likely to result in an odd price, because odd prices have been known to dissimulate price increases (Schindler, 1984). In Table 39 below, I show that, while Price increase was not a significant predictor for the probability of observing an odd price for Louis Vuitton in euros and in dollars, Price increase is a significant predictor for the use of odd prices in both euros and dollars for Gucci. The effect is unexpectedly negative: when the price increases from the previous season, the resulting price is less likely to be odd.

Although this is surprising with respect to the hypothesis drawn from the literature (of which managers might not even be aware), it can be explained logically: since we have found that the higher the price, the less likely it is to observe an odd price, it makes sense that when the price increases, the resulting price will be less likely to be odd, simply because it is a higher price.

Table 39 - Logistic regressions with odd price in euros (1) and in dollars (2) as dependent variables with dummy variables that account for price increase from previous season as predictors.

VARIABLES	(1) Odd €	(2) Odd \$
Price increased from previous period (Euro) ²²	-1.235*** (0.411)	
Material	-2.783*** (0.539)	-2.097*** (0.499)
Logo Visibility ¹	-0.314 (0.341)	-0.0241 (0.259)
Euro1	-1.699*** (0.373)	
Price increased from previous period (Dollar) ²²		-1.261*** (0.323)
Dollar1		-0.530*** (0.147)
Constant	3.529*** (1.003)	2.816*** (0.933)
Observations	415	507
Season effects	YES	YES
Log Likelihood	-154.2	-237.6
Likelihood Ratio	65.01	67.66
Prob < χ^2	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

4.2.8.3. Louis Vuitton and Gucci together as panel data

The last step of my analysis was to analyze prices collected of both Louis Vuitton and Gucci over the four seasons together and control for both time and brand effects.

Odd and even prices. Please refer to Table 40 and 41 to observe the effects of Material, Logo Visibility and Price on the likelihood of observing each price ending in euro and in dollars in individual logistic regressions (logit). Results of multinomial logistic regressions are shown in Appendix 2.5.

All hypotheses are confirmed for odd and even prices in both currencies, except for Logo Visibility that has no significant effect on the probability of observing an odd price in dollars. All other effects confirm the hypotheses: the higher the material and the price, the more it is likely to observe an even price and the less it is likely to observe an odd price, and when the logo is visible it is more likely to observe an odd price, at least in euros, and it is less likely to observe an even price for both currencies.

²² Dummy variable = 1 if price has been increased from previous period, 0 otherwise.

As stated before, given the lack of literature on other price endings, I was not able to formulate hypotheses on the expected effect of Material, Logo Visibility and Price on the likelihood of observing a price ending in -50 or with an “other” ending. Therefore, I will observe whatever significant effect I find in the data and leave it to further research to confirm these first findings.

50-ending prices. Previously, we have observed that material can have a positive effect on the likelihood of observing a price ending in -50 (i.e., for all brands in the Spring 2014 cross-section in euros and for both currencies for the Louis Vuitton panel) or a negative effect on it (i.e., for the Gucci panel). When observing the two brands together, the effect of material is positive for prices observed in euros and non-significant for prices observed in dollars. Results concerning the role of material in determining the likelihood of observing a 50-ending price are therefore inconclusive at an aggregated level.

Logo visibility is a non-significant predictor for prices ending in -50 for both euro and dollar samples. What we observed before in the other samples is that logo visibility either has a non-significant effect or a negative significant one (i.e., for the cross-section in Spring 2014 and for the panel data of Gucci handbags). Results concerning the role of logo visibility are therefore inconclusive, but seem to point towards a negative effect on the probability of observing a price ending in -50 when the logo is visible. Similarly, from what we have observed so far, price either has a significant negative effect (this is always the case for prices observed in euros and mostly the case for prices observed in dollars) or a non-significant effect on the likelihood of observing a 50-ending price (i.e., only for Louis Vuitton in dollars). In Table 40 and 41, we observe that for both brands combined, a longitudinal analysis shows that, as price increases, it becomes less likely to observe a 50-ending price for both currencies.

“Other” endings. As observed for all other samples, Price and Material have a negative and significant effect on the likelihood of observing a price with an ending other than odd, even or -50, both in euros and in dollars. Lastly, logo visibility does not have a significant effect on the probability of observing an “other” price in euros, but it has a positive and significant one in the dollar sample.

The only established determinants concerning these uninvestigated practices seem to be the price and material when analyzing their impact on the use of “other” price endings: both variables always have a significant negative effect on the likelihood of observing a price that

has “other” endings. No results can be considered conclusive regarding prices ending in -50 (although overall we observe evidence that 50-ending prices are mostly used for intermediate luxury handbags) or regarding the role of Logo visibility in determining “other” prices, as they are either contradictory or non-significant, depending on the sample we analyze.

Table 40 - Analysis of both Louis Vuitton and Gucci together as panel data over the four seasons in euros.

VARIABLES	(1) Odd €	(2) Even €	(3) 50 end €	(4) Other end €
Material	-1.258*** (0.161)	1.840*** (0.110)	0.187** (0.0817)	-1.954*** (0.140)
Logo Visibility1	0.444** (0.180)	-0.487*** (0.131)	-0.102 (0.129)	0.175 (0.151)
Euro1	-0.334*** (0.113)	0.735*** (0.0718)	-0.113*** (0.0398)	-1.001*** (0.0945)
Constant	0.819*** (0.290)	-4.366*** (0.254)	-1.598*** (0.210)	1.579*** (0.253)
Observations	2,011	2,011	2,011	2,011
Season effects	YES	YES	YES	YES
Brand effects	YES	YES	YES	YES
Log Likelihood	-733.7	-885.1	-1010	-900
Likelihood Ratio	230.6	569.7	125.8	820
Prob < ^2	0	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 41 - Analysis of both Louis Vuitton and Gucci together as panel data over the four seasons in dollars.

VARIABLES	(1) Odd \$	(2) Even \$	(3) 50 end \$	(4) Other end \$
Material	-1.389*** (0.202)	1.339*** (0.0906)	0.0948 (0.0755)	-1.761*** (0.140)
Logo Visibility 1	-0.254 (0.160)	-0.300** (0.124)	-0.0175 (0.124)	0.235* (0.133)
Dollar1	-0.447*** (0.0770)	0.241*** (0.0317)	-0.0579*** (0.0175)	-0.462*** (0.0544)
Constant	1.498*** (0.323)	-3.847*** (0.225)	-1.481*** (0.194)	1.319*** (0.235)
Observations	2,223	2,223	2,223	2,223
Season effects	YES	YES	YES	YES
Brand effects	YES	YES	YES	YES
Log Likelihood	-757.1	-1072	-1181	-1112
Likelihood Ratio	328.6	451.1	54.30	656.5
Prob < ^2	0	0	2.05e-09	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Are increased prices more likely to be odd? The role of price increase in determining the use of odd prices was not significant for Louis Vuitton and significant and negative for Gucci. When both brands are observed together, a price increase in euros does not have a significant

effect on the probability of observing an odd price, but a price increase in dollars does. As previously observed, this effect is negative.

Table 42 - Logistic regressions with odd price in euros (1) and in dollars (2) as dependent variables with dummy variables that account for price increase from previous season as predictors.

VARIABLES	(1) Odd €	(2) Odd \$
Price increased from previous period (Euro)	0.400 (0.248)	
Material	-1.481*** (0.206)	-1.747*** (0.331)
Logo Visibility1	0.674*** (0.260)	-0.250 (0.232)
Euro1	-0.184 (0.138)	
Price increased from previous period (Dollar)		-0.872*** (0.217)
Dollar1		-0.649*** (0.125)
Constant	-0.619 (0.464)	1.285** (0.532)
Observations	1,218	1,305
Season effects	YES	YES
Brand effects	YES	YES
Log Likelihood	-422.9	-382.1
Likelihood Ratio	198.7	179
Prob < ^2	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

4.2.9. How do price endings evolve over time?

Given that prices are increased twice a year by both Louis Vuitton and Gucci, if price ending practices were established or if they followed precise rules, we would observe the same type of price ending for the same handbag from one season to the other. Let's see an example: we have seen how lower-quality, lower-price handbags with visible logos are more likely to be odd-priced. The same handbag is carried over from season 1 to season 2, to season 3, etc. Assuming that the price increase will not make the handbag shift in another price range (e.g., let's say that both the initial and the increased price in season n+1 and n+2 are below 1000€) and given that Material and Logo Visibility are kept constant, when its price increases from season n to season n+1, its ending could and should still be the same. In other words, if a handbag is odd-priced in season 1, given that its material, logo visibility and the price range will be the same, the handbag should be odd-priced in season 2 and in season 3, too. So, its price could go from 790 euros to 890, to 990, for example. If, however, the handbags, whose price increases over time, change price ending from one season to the next, then we can conclude that price endings practices are not solidly established or do not follow precise rules.

To analyze the evolution of price endings I conducted several types of analysis: firstly, I observed how Louis Vuitton and Gucci changed their sample composition in terms of price endings season by season and by how much prices were increased for each type of price ending transition (e.g., do prices that go from having an even ending to an odd ending have a greater price increase than prices that go from being odd to being even?); this first step is purely descriptive. Secondly, I created transition matrices for each brand individually and for both brands jointly on panel data; thirdly, I ran logistic regressions with dummy variables which account for lagged endings (i.e., price endings for a given reference in the previous season) to see what impact they might have on the likelihood of observing a price ending or the other in the following season. Lastly, I created a categorical variable for each type of price ending transition and ran one-way ANOVAs of price increases to see which kind of price ending transition is most likely to carry the greatest price increase.

4.2.9.1. Description of price endings transitions and price increases

In Tables 43 and 44 (for Louis Vuitton) and in Tables 46 and 47 (for Gucci) we observe the details of price endings transitions from one season to the next in Euros and in Dollars. The matrices that I report are structured as common transition matrices, where the variables in the first column are the state of the variable at *time n* and the first row shows the state to which the observations transition to at *time n+1*. To give an example of how these tables should be read, I will illustrate a part of the first transition matrix in Table 43 (i.e., Louis Vuitton price endings transition from Season 1 to Season 2).

First, in Table 43, we see that for Louis Vuitton 201 references were carried over from Season 1 to Season 2 in Euros and had their price increased and 22 of these references were even-priced (i.e., had prices ending in -00) in Season 1. Of these 22 originally even-priced references, 8 had their price increased and had once again an even price in Season 2 (36%), 5 had their price increased and had a 50-ending price in Season 2 (23%), none were increased to have an odd price and the remaining 9 references (41%) had their price increased with an “other” price ending as a result in Season 2. In Table 45, we observe that those 8 references that had an even price both in Season 1 and in Season 2 had an average price increase of 125 euros, i.e., of 3% on their initial price. 46 references were dropped after Season 1, 65 were introduced in Season 2, only 1 reference had its price decreased (by 10 euros, going from a 50-ending price to a 40-ending price) and 70 references kept the same price as in Season 1. For these 70 references, I did not observe the price ending evolution, since, obviously, their

price endings were maintained unchanged. For Louis Vuitton, average price increases per price ending transition for the euro sample are reported in Table 45 at the top, while for the dollar sample in Table 45 at the bottom. Similarly, for Gucci, please refer to Table 48 (euros at the top and dollars at the bottom).

While I will not describe each and every price ending transition for the two brands, season by season and its corresponding average price increase, I will focus on the most important observations I drew from this description which led to the following analyses.

Firstly, we see how most prices were usually increased from one season to the next for both Louis Vuitton and Gucci. There are few exceptions: prices were not increased for Louis Vuitton from Season 3 to Season 4 for the dollar sample and for Gucci from Season 2 to Season 3 for both the euro and the dollar samples. It is interesting to see how prices can be increased, while the products are not improved. As we see in Table 45, on average from season to season for Louis Vuitton prices are increased by 3 to 4% for prices in euros, and by 4 to 6% for prices in dollars. As we see in Table 48, for Gucci prices are increased by 5 to 8% for prices in euros and by 6 to 7% for prices in dollars. These averages are calculated on all references, also those whose price was not increased.

Secondly, price endings are rarely the same when the price is increased from one season to the next. For example, for Louis Vuitton we observe that:

- Euro
 - Season 1 to 2: of 12 odd endings, 1 becomes even and 11 become “other”;
 - Season 2 to 3: of 14 odd endings, only 4 are still odd in Season 2;
 - Season 3 to 4: of 77 odd endings, 72 become “other”.
- Dollar
 - Season 1 to 2: of 17 odd endings, 13 become “other”;
 - Season 2 to 3: of 14 odd endings, 8 become “other”.

In general, it does not seem that price endings are fixed. Although quality of the material, price and logo visibility are stable predictors of the use of one price ending or the other, there seems to be no fixed rules for pricing managers to maintain a specific price ending for a given type of handbag. Possibly, pricing managers are not aware of the connotations that price endings carry or there might be other variables that explain how price endings are set, some of which might be lagged price endings, as I will later investigate. Indeed, whenever a price

ending is particularly overrepresented in one sample, it is interesting to observe lagged endings. For example, in the euro sample for Louis Vuitton, in Season 3, there are 99 prices that end in -90 or -95. 95 of these 99 prices are carried over from the previous season and increased, the remaining four are newly introduced. What we observe in this transition is that of these 99 prices that in Season 3 are odd, 46 used to have a 50-ending in Season 2. So, on top of material quality, price and logo visibility, we could assume that a lagged 50-ending price might also be a significant predictor of prices becoming odd. I will test this assumption, together with the impact of other lagged price endings on the current ones in the following sections.

Thirdly, there seems to be a prevalence of even prices among references that are newly introduced: for example, for Louis Vuitton in euros, 54% of 65 new references introduced in Season 2 are even-priced, 43% of 16 in Season 3, etc. Is a new handbag more likely to be even-priced when it is first marketed?

Fourthly, we saw how a price increase does not have a positive impact on the probability of observing an odd price. In fact, in further analyses I observed that prices are odd-priced two seasons in a row only when price is not increased. Particularly for Gucci, it seems that an important percentage of prices of carried-over references that are not increased are odd-priced. Are odd prices less likely to be increased?

Lastly, when observing Tables 45 and 48, we see that some price ending transitions come with a greater price increase than others. For example, when looking at the average percentage price increase for Gucci in euros from Season 1 to Season 2, for endings going from -00 to -50, we observe +283€ (+16%), while for endings going from -50 to -90, the average price increase is 40€ (+5%). Is there a correlation between the type of price ending transition and the magnitude of price increase from one season to the next?

In the following sections I will consolidate these first observations, first through transition matrices which were computed in Stata for both brands separately and then jointly and then I will present a series of logistic regressions that should answer, at least partially, all the above-raised questions.

Table 43 – Louis Vuitton price ending transition from one season to the next in Euros. In the two tables, you observe on the left the initial price ending and the headings of the columns are the resulting price endings in season n+1.

Euro 1 to Euro 2						Euro 2 to Euro 3						Euro 3 to Euro 4																							
201 references were carried over and had their price increased						246 references were carried over and had their price increased						237 references were carried over and had their price increased																							
	00	50	90/95	OTHER	TOT		00	50	90/95	OTHER	TOT		00	50	90/95	OTHER	TOT																		
00	8	5	/	9	22	00	21	14	1	21	57	00	23	9	1	19	52																		
	36%	23%	/	41%	100%		37%	25%	2%	37%	100%		44%	17%	2%	37%	100%																		
50	7	5	/	3	15	50	12	9	46	4	71	50	13	2	4	17	36																		
	47%	33%	/	20%	100%		17%	13%	65%	6%	100%		36%	6%	11%	47%	100%																		
90/95	1	/	/	11	12	90/95	1	2	4	7	14	90/95	1	4	/	72	77																		
	8%	/	/	92%	100%		7%	14%	29%	50%	100%		1%	5%	/	94%	100%																		
OTHER	28	59	9	56	152	OTHER	6	5	44	49	104	OTHER	3	6	1	62	72																		
	18%	39%	6%	37%	100%		6%	5%	42%	47%	100%		4%	8%	1%	86%	100%																		
TOT	44	69	9	79	201	TOT	40	30	95	81	246	TOT	40	21	6	170	237																		
	22%	34%	4%	39%	100%		16%	12%	39%	33%	100%		17%	9%	3%	72%	100%																		
<p>46 references dropped from Season 1 to Season 2 in Euro 15 references were even-priced 11 reference had a 50-ending 3 references were odd-priced 17 Other price endings</p> <p>65 references were introduced from Season 1 to Season 2 in Euro 35 references were introduced as even-priced 12 references were introduced with a 50-ending 1 references were introduced as odd-priced 17 Other price endings</p> <p>1 reference was carried over and had its price decreased Price was decreased by 10 Euros and price ending went from -50 to -40</p> <p>70 references were carried over with the same price 18 even priced 10 with a 50-ending 8 odd priced 34 other price endings</p>						<p>39 references dropped from Season 2 to Season 3 in Euro 10 references were even-priced 9 reference had a 50-ending 3 references were odd-priced 17 Other price endings</p> <p>16 references were introduced from Season 2 to Season 3 in Euro 7 references were introduced as even-priced 3 references were introduced with a 50-ending 4 references were introduced as odd-priced 2 Other price endings</p> <p>0 references were carried over and had their price decreased</p> <p>52 references were carried over with the same price 30 even priced 11 with a 50-ending 1 odd priced 10 other price endings</p> <p>99 prices end in -90 in Season 3 - Euro, of which 95 are carried over Δ from S2</p> <table border="0"> <tr> <td>11 ended in</td> <td>30</td> <td>60 €</td> </tr> <tr> <td>14 ended in</td> <td>40</td> <td>50 €</td> </tr> <tr> <td>46 ended in</td> <td>50</td> <td>40 €</td> </tr> <tr> <td>11 ended in</td> <td>60</td> <td>30 €</td> </tr> <tr> <td>7 ended in</td> <td>80</td> <td>110 €</td> </tr> <tr> <td>4 ended in</td> <td>90</td> <td>100 €</td> </tr> </table>						11 ended in	30	60 €	14 ended in	40	50 €	46 ended in	50	40 €	11 ended in	60	30 €	7 ended in	80	110 €	4 ended in	90	100 €	<p>77 references dropped from Season 3 to Season 4 in Euro 25 references were even-priced 8 reference had a 50-ending 23 references were odd-priced 21 Other price endings</p> <p>46 references were introduced from Season 3 to Season 4 in Euro 9 references were introduced as even-priced 7 references were introduced with a 50-ending 3 references were introduced as odd-priced 27 Other price endings</p> <p>0 references were carried over and had their price decreased</p>					
11 ended in	30	60 €																																	
14 ended in	40	50 €																																	
46 ended in	50	40 €																																	
11 ended in	60	30 €																																	
7 ended in	80	110 €																																	
4 ended in	90	100 €																																	

Table 44 – Louis Vuitton price ending transition from one season to the next in Dollar. In the two tables, you observe on the left the initial price ending and the headings of the columns are the resulting price endings in season n+1.

Dollar 1 to Dollar 2						Dollar 2 to Dollar 3						Dollar 3 to Dollar 4					
232 references were carried over and had their price increased						223 references were carried over and had their price increased						7 references were carried over and had their price increased					
	00	50	90/95	OTHER	TOT		00	50	90/95	OTHER	TOT		00	50	90/95	OTHER	TOT
00	4	11	2	14	31	00	15	4	1	15	35	00	/	/	/	2	2
	13%	35%	6%	45%	100%		43%	11%	3%	43%	100%		/	/	/	100%	100%
50	17	5	/	13	35	50	/	5	1	9	15	50	/	1	/	1	2
	49%	14%	/	37%	100%		/	33%	7%	60%	100%		/	50%	/	50%	100%
90/95	3	/	1	13	17	90/95	/	5	1	8	14	90/95	/	/	/	/	0
	18%	/	6%	76%	100%		/	36%	7%	57%	100%		/	/	/	/	0%
OTHER	15	11	6	117	149	OTHER	40	31	11	77	159	OTHER	/	/	/	3	3
	10%	7%	4%	79%	100%		25%	19%	7%	48%	100%		/	/	/	100%	100%
TOT	39	27	9	157	232	TOT	55	45	14	109	223	TOT	/	1	/	6	7
	17%	12%	4%	68%	100%		25%	20%	6%	49%	100%		/	14%	/	86%	100%
<p>45 references dropped from Season 1 to Season 2 in Dollar</p> <ul style="list-style-type: none"> 8 references were even-priced 9 reference had a 50-ending 3 references were odd-priced 25 Other price endings <p>76 references were introduced from Season 1 to Season 2 in Dollar</p> <ul style="list-style-type: none"> 25 references were introduced as even-priced 20 references were introduced with a 50-ending 3 references were introduced as odd-priced 28 Other price endings <p>2 references were carried over and had their price decreased</p> <ul style="list-style-type: none"> 1 Price was decreased by 250\$ and price ending went from -00 to -50 1 Price was decreased by 20€ and price ending went from -20 to -00 <p>14 references were carried over with the same price</p> <ul style="list-style-type: none"> 2 even priced 4 with a 50-ending 2 odd priced 6 other price endings 						<p>17 references dropped from Season 2 to Season 3 in Dollar</p> <ul style="list-style-type: none"> 3 references were even-priced 3 reference had a 50-ending 0 references were odd-priced 11 Other price endings <p>8 references were introduced from Season 2 to Season 3 in Dollar</p> <ul style="list-style-type: none"> 2 references were introduced as even-priced 1 references were introduced with a 50-ending 5 references were introduced as odd-priced 0 Other price endings <p>0 references were carried over and had their price decreased</p> <p>20 references were carried over with the same price</p> <ul style="list-style-type: none"> 9 even priced 4 with a 50-ending 0 odd priced 7 other price endings 						<p>64 references dropped from Season 3 to Season 4 in Dollar</p> <ul style="list-style-type: none"> 20 references were even-priced 15 reference had a 50-ending 1 references were odd-priced 28 Other price endings <p>46 references were introduced from Season 3 to Season 4 in Dollar</p> <ul style="list-style-type: none"> 13 references were introduced as even-priced 10 references were introduced with a 50-ending 1 references were introduced as odd-priced 22 Other price endings <p>0 references were carried over and had their price decreased</p> <p>243 references were carried over with the same price</p> <ul style="list-style-type: none"> 71 even priced 62 with a 50-ending 13 odd priced 97 other price endings 					

Table 45 – Louis Vuitton price increase from one season to the next for each possible price ending transition

		Euro 1 to Euro 2		Euro 2 to Euro 3		Euro 3 to Euro 4		
Price endings going from		Absolute Δ	%	Absolute Δ	%	Absolute Δ	%	
00	to	00	125	3%	210	4,6%	165	3%
		50	90	3%	300	7,0%	128	3%
		90	/	/	90	4,5%	90	3%
		All	89	3%	173	5,0%	118	3%
50	to	00	121	3%	233	5,7%	119	3%
		50	120	7%	111	6,0%	150	3%
		90	/	/	40	4,3%	40	3%
		All	101	4%	84	5,0%	76	3%
90	to	00	110	7%	10	2,6%	10	3%
		50	/	/	60	3,3%	60	3%
		90	/	/	100	4,0%	/	/
		All	36	4%	51	4,0%	40	3%
Average increase		All references	40	3%	72	3,6%	61	3%
		Only price increase	55	4%	87	4,0%	61	3%

		Dollar 1 to Dollar 2		Dollar 2 to Dollar 3		Dollar 3 to Dollar 4		
Price endings going from		Absolute Δ	%	Absolute Δ	%	Absolute Δ	%	
00	to	00	225	5%	482	6%	/	/
		50	114	3%	244	6%	/	/
		90	90	3%	90	6%	/	/
		All	112	4%	290	6%	210	20%
50	to	00	97	4%	324	6%	/	/
		50	180	4%	529	8%	200	6%
		90	/	/	140	6%	/	/
		All	92	4%	327	7%	205	13%
90	to	00	10	1%	/	/	/	/
		50	/	/	60	4%	/	/
		90	100	5%	100	7%	/	/
		All	62	4%	69	5%	/	/
Average increase		All references	70	4%	160	6%	3,6	0%
		Only price increase	76	4%	171	6%	129	11%

Table 46 – Gucci price ending transition from one season to the next in Euros. In the two tables, you observe on the left the initial price ending and the headings of the columns are the resulting price endings in season n+1.

Euro 1 to Euro 2						Euro 2 to Euro 3						Euro 3 to Euro 4					
118 references were carried over and had their price increased						161 references were carried over from Season 2 to Season 3; all prices were kept equal.						77 references were carried over and had their price increased					
	00	50	90/95	OTHER	TOT								00	50	90/95	OTHER	TOT
00	17	6	0	0	23	62 even priced				39%		00	11	9	2	0	22
	74%	26%	0%	0%	100%	53 with a 50-ending				33%			50%	41%	9%	0%	100%
50	15	9	2	0	26	33 odd priced				20%		50	12	12	3	4	31
	58%	35%	8%	0%	100%	13 other price endings				8%			39%	39%	10%	13%	100%
90/95	16	17	0	4	37							90/95	5	11	0	1	17
	43%	46%	0%	11%	100%								29%	65%	0%	6%	100%
OTHER	13	11	8	0	32							OTHER	0	4	2	1	7
	41%	34%	25%	0%	100%								0%	57%	29%	14%	100%
TOT	61	43	10	4	118							TOT	28	36	7	6	77
	52%	36%	8%	3%	100%								36%	47%	9%	8%	100%
15 references dropped from Season 1 to Season 2 in Euro						56 references were dropped from Season 2 to Season 3						115 references dropped from Season 3 to Season 4 in Euro					
9 references were even-priced 60%						21 were even priced 38%						43 references were even-priced 37%					
1 reference had a 50-ending 7%						20 were introduced with a 50-ending 36%						42 reference had a 50-ending 37%					
2 references were odd-priced 13%						8 were odd priced 14%						23 references were odd-priced 20%					
Other price endings 20%						Other price endings 13%						Other price endings 6%					
48 references were introduced from Season 1 to Season 2 in Euro						51 referenced were introduced from Season 2 to Season 3						71 references were introduced from Season 3 to Season 4 in Euro					
16 references were introduced as even-priced 33%						14 were even priced 27%						31 references were introduced as even-priced 44%					
16 references were introduced with a 50-ending 33%						26 were introduced with a 50-ending 51%						29 references were introduced with a 50-ending 41%					
12 references were introduced as odd-priced 25%						9 were odd priced 18%						5 references were introduced as odd-priced 7%					
Other price endings 8%						Othe price endings 4%						Other price endings 8%					
2 references were carried over and had their price decreased												20 references were carried over with the same price					
Price was decreased by 160 euro and price ending went from -50 to -90												11 even priced 55%					
49 references were carried over with the same price												6 with a 50-ending 30%					
6 even priced 12%												2 odd priced 10%					
14 with a 50-ending 29%												1 other price ending 5%					
17 odd priced 35%																	
12 other price endings 24%																	

Table 47 - Gucci price ending transition from one season to the next in Dollars. In the two tables, you observe on the left the initial price ending and the headings of the columns are the resulting price endings in season n+1.

Dollar 1 to Dollar 2						Dollar 2 to Dollar 3						Dollar 3 to Dollar 4					
149 references were carried over and had their price increased						190 references were carried over from Season 2 to Season 3 with the same price.						96 references were carried over and had their price increased					
	00	50	90/95	OTHER	TOT								00	50	90/95	OTHER	TOT
00	17	2	3	8	30	52	even priced					00	16	5	1	2	24
	57%	7%	10%	27%	100%	52	with a 50-ending						67%	21%	4%	8%	100%
50	7	7	12	15	41	54	odd priced					50	11	9	4	2	26
	17%	17%	29%	37%	100%	32	other price endings						42%	35%	15%	8%	100%
90/95	17	14	10	10	51							90/95	9	17	3	4	33
	33%	27%	20%	20%	100%	3	references were carried over and had their price increased						27%	52%	9%	12%	100%
OTHER	9	8	2	8	27	1	From -00 to -00					OTHER	2	5	3	3	13
	33%	30%	7%	30%	100%	1	From -00 to Other						15%	38%	23%	23%	100%
TOT	50	31	27	41	149	1	From Other to Other					TOT	38	36	11	11	96
	34%	21%	18%	28%	100%								40%	38%	11%	11%	100%
68 references dropped from Season 1 to Season 2 in Dollar 26 references were even-priced 10 reference had a 50-ending 21 references were odd-priced 11 Other price endings						86 references dropped from Season 2 to Season 3 in Dollar 30 references were even-priced 12 reference had a 50-ending 16 references were odd-priced 28 Other price endings						94 references dropped from Season 3 to Season 4 in Dollar 54 references were even-priced 31 reference had a 50-ending 7 references were odd-priced 2 Other price endings					
78 references were introduced from Season 1 to Season 2 in Dollar 23 references were introduced as even-priced 23 references were introduced with a 50-ending 20 references were introduced as odd-priced 12 Other price endings						92 references were introduced from Season 2 to Season 3 in Dollar 41 references were introduced as even-priced 23 references were introduced with a 50-ending 25 references were introduced as odd-priced 3 Other price endings						59 references were introduced from Season 3 to Season 4 in Dollar 19 references were introduced as even-priced 31 references were introduced with a 50-ending 7 references were introduced as odd-priced 2 Other price endings					
0 references were carried over and had their price decreased						0 references were carried over and had their price decreased						2 references were carried over and had their price decreased 1 Price was decreased by 10 Dollars and price ending went from 60 to 50 1 Price was decreased by 250 Dollars and price ending went from 50 to -00					
52 references were carried over with the same price 11 even priced 10 with a 50-ending 23 odd priced 8 other price endings												26 references were carried over with the same price 16 even priced 4 with a 50-ending 5 odd priced 1 other price endings					
												1 bag went from 32000\$ to 41500\$ (+9500\$) 2 bags went from 19500\$ to 27500 (+8000\$)					

Table 48 – Gucci price increase from one season to the next for each possible price ending transition

		Euro 1 to Euro 2		Euro 2 to Euro 3		Euro 3 to Euro 4		
Price endings going from		Absolute Δ	%	Absolute Δ	%	Absolute Δ	%	
00	to	00	383	13%	/	/	245	9%
		50	283	16%	/	/	61	5%
		90	/	/	/	/	90	5%
		All	357	14%	/	/	156	7%
50	to	00	130	8%	/	/	133	6%
		50	222	13%	/	/	100	7%
		90	40	5%	/	/	40	5%
		All	155	9%	/	/	101	7%
90	to	00	177	12%	/	/	108	8%
		50	199	13%	/	/	58	6%
		90	/	/	/	/	/	/
		All	171	12%	/	/	72	7%
Average increase		All references	130	8%	/	/	83	5%
		Only price increase	173	11%	/	/	105	7%

		Dollar 1 to Dollar 2		Dollar 2 to Dollar 3		Dollar 3 to Dollar 4		
Price endings going from		Absolute Δ	%	Absolute Δ	%	Absolute Δ	%	
00	to	00	641	12%	3700	23%	1994	13%
		50	300	10%	/	/	130	8%
		90	357	14%	/	/	90	6%
		All	481	11%	2565	15%	1435	11%
50	to	00	193	9%	/	/	150	8%
		50	300	10%	/	/	133	9%
		90	132	7%	/	/	140	7%
		All	212	8%	/	/	138	8%
90	to	00	367	11%	/	/	188	9%
		50	180	8%	/	/	118	8%
		90	159	8%	/	/	97	7%
		All	206	9%	/	/	128	8%
Average increase		All references	184	7%	26	0%	348	6%
		Only price increase	248	9%	1723	10%	452	9%

4.2.9.2. Transition matrices on panel data

In the previous tables (43 to 48), I described price ending transitions and average price increases for each transition. The analysis was conducted season by season and for the two brands individually. I subsequently conducted a similar analysis, but with panel data using Stata, which calculates transition probabilities of going from one price ending to another with the command *xttrans*. I report brand-individual transition matrices for Gucci and Louis Vuitton in Appendix 2.7, and I report in Tables 49 (Euros) and 50 (Dollars) the transition matrices for both brands jointly using longitudinal data over the four seasons. In both tables, we observe four transition matrices:

1. Top left matrix: all prices endings are considered, for both prices that have been kept constant from one season to the next and prices that have been increased. Moreover, all references that were missing at season n or that are dropped at season $n+1$ are accounted for, i.e. probabilities of being introduced with a certain price ending and probabilities of being dropped given a certain price ending in the previous season are also computed;
2. Top right matrix: missing values are also considered, but the sample is limited to references whose price has been increased, to eliminate any inertia in price ending transitions of prices that have not been increased (if a price has not been increased, then, given that prices were never decreased, its price ending must be the same as the previous season). this is important when observing price ending transitions, because, clearly, if the price has been kept the same, then so has the price ending;
3. Bottom left matrix: no missing references are considered, only references that were carried over from season 1 to season 4 are analyzed. Both prices that have been increased and that have been kept constant are included in the matrix;
4. Bottom right matrix: no missing references and only prices that have had their priced increased each season are considered, which explains the extremely limited size of the sample compared to the matrix at the top right.

In light yellow, I highlight the highest probability per row, to show what is the most likely transition given a price ending at season n .

Table 49 – Both brands Euro

All references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Missing	Total
Even	206	4	43	49	121	423
%	48,7	0,95	10,17	11,58	28,61	100
Odd	24	65	33	94	62	278
%	8,63	23,38	11,87	33,81	22,3	100
-50	58	56	124	29	89	356
%	16,29	15,73	34,83	8,15	25	100
Other	50	64	84	238	72	508
%	9,84	12,6	16,54	46,85	14,17	100
Missing	109	34	91	58	1,641	1,933
%	5,64	1,76	4,71	3	84,89	100
Total	447	223	375	468	1,985	3,498
%	12,78	6,38	10,72	13,38	56,75	100

All references, If price increase > 0

	Even	Odd	-50	Other	Missing	Total
Even	63	1	34	40	65	203
%	31,03	0,49	16,75	19,7	32,02	100
Odd	19	1	24	93	35	172
%	11,05	0,58	13,95	54,07	20,35	100
-50	48	51	30	20	54	203
%	23,65	25,12	14,78	9,85	26,6	100
Other	48	49	82	149	49	377
%	12,73	13	21,75	39,52	13	100
Missing	109	34	91	58	1,641	1,933
%	5,64	1,76	4,71	3	84,89	100
Total	287	136	261	360	1,844	2,888
%	9,94	4,71	9,04	12,47	63,85	100

No missing references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Total
Even	206	4	43	49	302
%	68,21	1,32	14,24	16,23	100
Odd	24	65	33	94	216
%	11,11	30,09	15,28	43,52	100
-50	58	56	124	29	267
%	21,72	20,97	46,44	10,86	100
Other	50	64	84	238	436
%	11,47	14,68	19,27	54,59	100
Total	338	189	284	410	1,221
%	27,68	15,48	23,26	33,58	100

No missing references, if price increase > 0

	Even	Odd	-50	Other	Total
Even	63	1	34	40	138
%	45,65	0,72	24,64	28,99	100
Odd	19	1	24	93	137
%	13,87	0,73	17,52	67,88	100
-50	48	51	30	20	149
%	32,21	34,23	20,13	13,42	100
Other	48	49	82	149	328
%	14,63	14,94	25	45,43	100
Total	178	102	170	302	752
%	23,67	13,56	22,61	40,16	100

Table 50 – Both brands Dollar

All references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Missing	Total
Even	220	7	35	43	141	446
%	49,33	1,57	7,85	9,64	31,61	100
Odd	29	108	36	35	77	285
%	10,18	37,89	12,63	12,28	27,02	100
-50	53	16	170	42	93	374
%	14,17	4,28	45,45	11,23	24,87	100
Other	67	22	64	362	123	638
%	10,5	3,45	10,03	56,74	19,28	100
Missing	123	55	106	73	1,398	1,755
%	7,01	3,13	6,04	4,16	79,66	100
Total	492	208	411	555	1,832	3,498
%	14,07	5,95	11,75	15,87	52,37	100

All references, If price increase > 0

	Even	Odd	-50	Other	Missing	Total
Even	52	6	33	40	101	232
%	22,41	2,59	14,22	17,24	43,53	100
Odd	24	12	29	29	47	141
%	17,02	8,51	20,57	20,57	33,33	100
-50	47	14	26	41	53	181
%	25,97	7,73	14,36	22,65	29,28	100
Other	65	18	59	205	99	446
%	14,57	4,04	13,23	45,96	22,2	100
Missing	123	55	106	73	1,398	1,755
%	7,01	3,13	6,04	4,16	79,66	100
Total	311	105	253	388	1,698	2,755
%	11,29	3,81	9,18	14,08	61,63	100

No missing references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Total
Even	220	7	35	43	305
%	72,13	2,3	11,48	14,1	100
Odd	29	108	36	35	208
%	13,94	51,92	17,31	16,83	100
-50	53	16	170	42	281
%	18,86	5,69	60,5	14,95	100
Other	67	22	64	362	515
%	13,01	4,27	12,43	70,29	100
Total	369	153	305	482	1,309
%	28,19	11,69	23,3	36,82	100

No missing references, if price increase > 0

	Even	Odd	-50	Other	Total
Even	52	6	33	40	131
%	39,69	4,58	25,19	30,53	100
Odd	24	12	29	29	94
%	25,53	12,77	30,85	30,85	100
-50	47	14	26	41	128
%	36,72	10,94	20,31	32,03	100
Other	65	18	59	205	347
%	18,73	5,19	17	59,08	100
Total	188	50	147	315	700
%	26,86	7,14	21	45	100

In general, when looking at tables excluding prices that have been kept constant (i.e. transition matrices on the right), what we observe is that for prices in euros:

- Even and “other” prices have a high probability of having the same type of price ending²³ in the following season;
- Odd prices are likely to evolve into “other” prices;
- 50-ending prices are likely to evolve into either even or odd prices;
- Missing references are most likely to be missing also in the following seasons or alternatively to be introduced as even or 50-ending prices.

For prices observed in dollars:

- Even prices are most likely to become missing references, the second most likely state is to be again even in season n+1;
- Similarly, odd prices are most likely to be missing in the following season, otherwise the two second most likely options are to become 50-ending or “other”, but not to be again odd;
- 50-ending prices are likely to evolve into even or “other” prices;
- “other” prices are most likely to be again “other” in the following season.²³

Even pricing and the use of “other” endings seem to be quite stable for both the euro and the dollar samples, while the use of odd and 50-endings is not. The following step is to analyze with logistic regressions whether lagged endings are significant predictors of future endings.

4.2.9.3. Impact of price ending in previous period on price endings and price increase in the following season

In the following pages, I show the regressions that test the impact of price endings observed at season n-1 in euros on season n price endings and on price increase.

The samples of references analyzed in the following tables are restricted to items whose price has been increased compared to the previous season to isolate any inertia that might be caused by prices that are kept constant. All coefficients of dummy variables accounting for lagged

²³ Here I mean that a price with an “other” ending is most likely to have again an “other” ending in the next season, e.g., a price ending in -10 in S1 could end in -10, -20, -30, -40, -60, -70 or -80 in S2; I am not implying that a price ending in -10 in S1 will again necessarily end in -10 the following season.

price endings should be interpreted compared to the baseline “other” lagged ending.

4.2.9.3.1. *Louis Vuitton*

Firstly, we observe that an odd-priced handbag in season n, is less likely to be odd-priced or to have a 50-ending price in season n+1, while it is more likely to have a price ending that belongs to the category “other”. Secondly, a handbag that is even-priced in season n is unlikely to be odd-priced in season n+1, but it is more likely to either be again even-priced or to have an “other” price ending. Thirdly, prices that end in -50 in season n, are more likely to be odd-priced or even-priced in season n+1, but less likely to have an “other” price ending. In general, an item that has been carried over from a previous season, is more likely to be odd-priced if it previously had a price ending in -50.

Table 51 – Logistic regressions showing impact of lagged price endings; Baseline: lagged “other” ending in Euro; Sample restricted to references whose price has been increased compared to previous season.

VARIABLES	(1) Odd €	(2) Even €	(3) 50-end €	(4) Other-end €
Lagged odd €	-1.138* (0.594)	-0.799 (0.642)	-0.820* (0.469)	1.494*** (0.382)
Lagged even €	-2.116** (0.845)	0.587* (0.341)	0.279 (0.318)	0.794** (0.333)
Lagged 50 €	1.701*** (0.381)	0.693* (0.354)	-0.229 (0.346)	-1.626*** (0.313)
Material	-1.804*** (0.334)	1.474*** (0.200)	0.279* (0.153)	-2.169*** (0.291)
Logo Visibility1	1.147* (0.666)	-1.273*** (0.268)	0.314 (0.281)	0.316 (0.292)
Euro1	0.260*** (0.0876)	0.546*** (0.115)	0.00287 (0.0471)	-1.524*** (0.175)
Constant	-1.201** (0.592)	-4.613*** (0.447)	-2.673*** (0.362)	4.022*** (0.463)
Observations	683	683	683	683
Season effects	YES	YES	YES	YES
Log Likelihood	-165.1	-229.1	-284.2	-316.4
Likelihood Ratio	272.8	188.9	66.59	313.2
Prob < χ^2	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Overall it seems that price endings practices do not follow strict guidelines for Louis Vuitton, since the same price ending is rarely observed on the same handbag two seasons in a row, as we have previously seen in the transition matrices, shown above.

Most interestingly, price becomes a positive and significant predictor for the use of odd prices (it was non-significant in a previous model where I only ran the logistic regression with

Material, Price and Logo Visibility as independent variables). This could seem surprising, as it seems to disconfirm my hypothesis that odd prices should be more likely to be observed among lower-price, more accessible handbags and since it is the opposite of what I have observed so far. However, the coefficient has to be interpreted compared to the baseline of “other” lagged price endings, so what we see in Model 1 of Table 51 is that, as price goes up, it is more likely to observe an odd price than an “other” price.

In Table 52, the same analysis is shown for prices observed in dollars. I do not find the same results as I did for the euro sample, in that lagged price endings for the dollar sample do not seem to predict next-season price endings at all. The only two exceptions are those of prices ending in -50 or in -00 in season n, which are more likely to be even-priced or to end in -50 in season n+1 respectively.

Table 52 – Logistic regressions showing impact of lagged price endings; Baseline: lagged “other” ending Dollar; Sample restricted to references whose price has been increased compared to previous season.

VARIABLES	(1) Odd \$	(2) Even \$	(3) 50-end \$	(4) Other-end \$
Lagged odd \$	0.0273 (0.791)	-0.683 (0.630)	0.110 (0.522)	0.296 (0.436)
Lagged even \$	-0.00144 (0.683)	0.0400 (0.334)	0.623** (0.312)	0.148 (0.323)
Lagged -50 \$	-0.874 (1.063)	0.812** (0.323)	0.310 (0.338)	-0.382 (0.348)
Material	-1.270 (0.779)	0.684*** (0.226)	0.358* (0.187)	-2.380*** (0.337)
Logo Visibility1	-1.028 (0.648)	-0.302 (0.309)	0.252 (0.311)	0.159 (0.316)
Dollar1	-0.652** (0.289)	0.296*** (0.0960)	0.0367 (0.0525)	-0.897*** (0.133)
Constant	-1.457 (0.954)	-2.125*** (0.343)	-2.479** (1.106)	4.683*** (1.285)
Observations	518	518	525	525
Season effects	YES	YES	YES	YES
Log Likelihood	-87.33	-252.4	-242.9	-285.1
Likelihood Ratio	13.56	58.39	31.29	155.5
Prob < ^2	0.0595	3.16e-10	0.000125	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

4.2.9.3.2. Gucci

Please refer to Table 53 and 54 on the next page. For Gucci, lagged price endings do not have any impact on next price endings for prices observed in euros. The only marginally significant results we observe are those of the impact of a lagged odd price and of a lagged 50-ending on the likelihood of observing an “other” price ending in season n+1. In practice, having an odd

or a 50-ending is a marginally significantly positive predictor of having an “other” price ending in the following season.

Table 53 - Logistic regressions showing impact of lagged price endings; Baseline: lagged “other” ending in Euro; Sample restricted to references whose price has been increased compared to previous season.

VARIABLES	(1) Odd €	(2) Even €	(3) 50-end €	(4) Other-end €
Lagged odd €	24	-0.0242 (0.490)	0.543 (0.445)	0.260* (1.447)
Lagged even €	0.0164 (1.053)	0.0111 (0.595)	0.141 (0.548)	
Lagged 50 €	-0.224 (0.739)	0.0160 (0.525)	-0.0158 (0.480)	2.374* (1.408)
Material	-4.827*** (1.483)	2.603*** (0.567)	-0.681* (0.404)	-2.22** (0.830)
Logo Visibility1	-0.0979 (0.755)	-0.0314 (0.370)	0.0497 (0.343)	-3.044* (1.733)
Euro1	-2.012** (0.949)	1.104*** (0.350)	-0.433 (0.272)	-12.16*** (4.714)
Constant	6.069*** (2.151)	-5.458*** (1.037)	0.915 (0.737)	25.27** (11.00)
Observations	139	192	192	147
Season effects	YES	YES	YES	YES
Log Likelihood	-35.81	-107.4	-123.5	-16.47
Likelihood Ratio	31.66	50.04	11.65	40.11
Prob < ^2	1.90e-05	1.42e-08	0.113	4.33e-07

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 54 – Logistic regressions showing impact of lagged price endings; Baseline: lagged “other” ending Dollar; Sample restricted to references whose price has been increased compared to previous season.

VARIABLES	(1) Odd \$	(2) Even \$	(3) 50-end \$	(4) Other-end \$
Lagged odd \$	0.355 (0.601)	-0.305 (0.461)	0.367 (0.447)	-0.418 (0.490)
Lagged even \$	0.152 (0.849)	0.109 (0.575)	-0.494 (0.645)	0.0600 (0.631)
Lagged 50 \$	0.997* (0.596)	-0.588 (0.490)	-0.248 (0.480)	0.160 (0.486)
Material	-1.070 (0.819)	1.190*** (0.337)	-0.929** (0.427)	-0.490 (0.346)
Logo Visibility1	0.356 (0.426)	-0.410 (0.347)	-0.160 (0.352)	0.138 (0.380)
Dollar1	-0.348 (0.230)	0.0720 (0.0504)	-0.102 (0.103)	-0.0202 (0.0480)
Constant	-0.788 (1.418)	-2.658*** (0.681)	1.383* (0.789)	-0.997 (0.697)
Observations	242	245	242	245
Season effects	YES	YES	YES	YES
Log Likelihood	-96.55	-140	-128.7	-120.6
Likelihood Ratio	13.90	38.78	28.16	17.27
Prob < ^2	0.0529	5.41e-06	0.000205	0.0274

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

²⁴ No odd price in euros was kept and increased to be again odd-priced in the next season for Gucci, so the coefficient was not calculated by Stata.

Contrary to what we observed for the same analysis conducted for Louis Vuitton and consistently with what we would expect given previous finding in the literature and the hypotheses previously formulated, here price has a negative and significant impact on the likelihood of observing an odd price, at least for the sample in euros. Similarly, for prices observed in dollars in Table 54, lagged endings are not significant predictors of price endings used in the following season. Only a lagged 50-ending has a marginally significant and positive effect on the likelihood of observing an odd price in the following season.

In general, for Gucci lagged endings do not seem to be predictors of future price endings, except few exception that are however, only marginally significant.

4.2.9.3.3. Both brands

In the following tables, I show the same analyses I conducted on Louis Vuitton and Gucci, this time at an aggregated level for the two brands. In the regressions, I therefore control for both time and brand effects. Because Louis Vuitton has a much greater number of observations whose price has increased over the four seasons compared to Gucci (around 700 vs. less than 200 in euros and around 500 vs. around 250 in dollars), the results of the two aggregated brands reproduce approximately the same results that were identified for Louis Vuitton alone, i.e. results are more driven by Louis Vuitton because of the greater weight of its observations. If anything, given that Gucci hardly had any significant results in this part of the study, joining the two panels sometimes reduces the significance level of some coefficients that were otherwise significant for Louis Vuitton.

In Table 55 we see that a lagged odd ending has a highly significant and negative effect on the likelihood of observing an odd price in the next season. This effect was only marginally significant for Louis Vuitton and not observable for Gucci, since there was no case of a price that was odd one season after the other. The rest of the table shows that adding data for Gucci does not impact the results of the previous logistic regressions run for Louis Vuitton alone.

Two interesting findings are that for prices observed in dollars 5 (Table 56), a lagged odd price has a significant positive effect on the likelihood of observing a price ending in -50 in the following season and that a lagged 50-ending price has a negative and significant effect on the likelihood of observing an “other” price in the next season. These effects were not significant for neither brand taken individually.

Table 55 - Logistic regressions showing impact of lagged price endings; Baseline: lagged “other” ending in Euro; Sample restricted to references whose price has been increased compared to previous season.

VARIABLES	(1) Odd €	(2) Even €	(3) 50-end €	(4) Other-end €
Lagged odd €	-1.677*** (0.561)	-0.190 (0.327)	-0.264 (0.262)	1.405*** (0.336)
Lagged even €	-1.533** (0.604)	0.507* (0.291)	0.0372 (0.268)	0.763** (0.318)
Lagged 50 €	1.174*** (0.321)	0.484* (0.289)	-0.237 (0.264)	-1.318*** (0.294)
Material	-1.955*** (0.292)	1.531*** (0.172)	0.160 (0.134)	-1.906*** (0.255)
Logo Visibility1	0.835* (0.474)	-0.909*** (0.205)	0.327 (0.212)	0.213 (0.270)
Euro1	0.203** (0.0808)	0.520*** (0.100)	-0.0378 (0.0485)	-1.510*** (0.170)
Constant	0.985* (0.585)	-3.629*** (0.413)	-1.070*** (0.340)	-0.351 (0.548)
Observations	872	872	872	872
Season effects	YES	YES	YES	YES
Brand effects	YES	YES	YES	YES
Log Likelihood	-212.2	-343.5	-428	-352.6
Likelihood Ratio	295.9	280.3	73.38	459.3
Prob < ^2	0	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 56 - Logistic regressions showing impact of lagged price endings; Baseline: lagged “other” ending in Dollars; Sample restricted to references whose price has been increased compared to previous season.

VARIABLES	(1) Odd \$	(2) Even \$	(3) 50-end \$	(4) Other-end \$
Lagged odd \$	-0.0112 (0.424)	-0.0120 (0.294)	0.683** (0.287)	-0.426 (0.274)
Lagged even \$	-0.0628 (0.516)	0.315 (0.266)	0.350 (0.280)	-0.199 (0.262)
Lagged 50 \$	0.382 (0.406)	0.386 (0.248)	0.399 (0.261)	-0.513** (0.250)
Material	-1.076** (0.476)	0.795*** (0.164)	-0.0430 (0.156)	-1.132*** (0.233)
Logo Visibility1	-0.176 (0.347)	-0.160 (0.214)	0.197 (0.232)	-0.0428 (0.223)
Euro1	-0.543*** (0.174)	0.139*** (0.0496)	-0.0321 (0.0314)	-0.279*** (0.0873)
Constant	-0.852 (0.757)	-2.260*** (0.380)	-0.872** (0.377)	0.356 (0.432)
Observations	768	768	768	768
Season effects	YES	YES	YES	YES
Brand effects	YES	YES	YES	YES
Log Likelihood	-188	-404.4	-385.5	-438.5
Likelihood Ratio	45.17	86.29	38.34	173.5
Prob < ^2	8.58e-07	0	1.52e-05	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Hypothesis 3 argued that because consumers that are exposed to odd prices are less likely to notice that there has been a price increase if there has been one, luxury brands might use odd prices to hide the fact that they increase their prices twice a year without improving the corresponding products. Therefore, it might seem reasonable to expect more odd prices among those that have been increased. If this were the case than a dummy variable accounting for a price increase should have a positive and significant effect on the likelihood of observing an odd price. However, we saw back in Table 35 that is not the case. Another way to look at odd prices is to see them as a way for managers to stay within a given price range, i.e., a way not to exceed a given threshold. If this connotation were true and known to pricing managers we could alternatively expect that when a reference is odd-priced, it is less likely that its price will be increased, because increasing it will automatically imply exceeding said threshold. Moreover, although we observed this more for Gucci than for Louis Vuitton in the above-described samples and transition matrices, the only case where prices are odd two seasons in a row is when the price has not been increased. This might lead us to believe that lagged odd prices are less likely to be increased. In Table 57, I show the impact of a lagged odd price on the likelihood of the price being increased. Neither a lagged odd ending in euros nor in dollars have a significant effect on the likelihood of having a price increase in the next season.

Table 57 – Logistic regressions showing the impact of lagged odd prices on the likelihood of observing a price increase over the following season

VARIABLES	(1) Price increase € (Yes or no)	(2) Price increase \$ (Yes or no)
Lagged Odd €	0.177 (0.218)	
Lagged Odd \$		0.0516 (0.194)
Constant	1.682*** (0.255)	-1.904*** (0.176)
Observations	1,217	1,304
Brand and Season effects	YES	YES
Log Likelihood	-533.7	-692.7
Likelihood Ratio	383.7	380.8
Prob < χ^2	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Having an odd price will not reduce the probability that the manager will increase the price for the odd-priced reference. However, given the decision that the price for that reference will be increased, the fact that the lagged price was odd or that the new price will be odd, will have a significant negative effect on the magnitude of the price increase, both in euros and in dollars. This means that indeed managers make an attempt to keep a relatively low price for odd prices and they try not to go beyond a certain price threshold when using this pricing technique. Please refer to Table 58.

Table 58 – Linear regression showing the impact of current and lagged odd endings on the absolute magnitude of price increase (observed only on prices that have been increased).

VARIABLES	(1) Price increase € (Absolute Δ)	(2) Price increase \$ (Absolute Δ)
Odd €	-0.0683*** (0.0120)	
Lagged Odd €	-0.0261** (0.0104)	
Odd \$		-0.146* (0.0778)
Lagged Odd \$		-0.209*** (0.0620)
Constant	0.159*** (0.0106)	0.500*** (0.0695)
Observations	872	768
R-squared	0.142	0.064
Brand and Season effects	YES	YES
Adj. R-squared	0.137	0.0580
VIF	1.165	1.069

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Lastly, I previously observed that numerous newly introduced references are even-priced. This observation raised the question of whether luxury handbags are more likely to be even-priced when they are marketed for the first time. In Table 59 below, I show that the impact of a dummy variable indicating that the reference is new does not have significant effect on the likelihood of observing an even price, for either currency.

Table 59 – Logistic regressions showing the impact of being new on the likelihood of being even-priced.

VARIABLES	(1) Even €	(2) Even \$
Item newly introduced - Euro ²⁵	-0.00474 (0.168)	
Material	1.841*** (0.110)	1.345*** (0.0915)
Logo Visibility1	-0.487*** (0.131)	-0.299** (0.124)
Euro1	0.735*** (0.0718)	
Item newly introduced – Dollar ²⁵		-0.0723 (0.147)
Dollar1		0.241*** (0.0317)
Constant	-4.362*** (0.301)	-3.783*** (0.260)
Observations	2,011	2,223
Brand effects	YES	YES
Season effects	YES	YES
Log Likelihood	-885.1	-1072
Likelihood Ratio	569.7	451.4
Prob < χ^2	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.2.9.4. Is there a relationship between price ending transitions and price increase?

I conducted some additional analyses to understand whether certain price ending transitions from one season to the next are linked to greater or smaller price increases. To identify these relationships, I conducted one-way ANOVAs with post-hoc Games-Howell tests to identify any significant differences for multiple pairwise comparisons. The reason why I chose this specific post-hoc contrast is that it is robust enough to account for heteroscedasticity, which could be an issue here since Levene’s tests are highly significant and it also accounts for different samples sizes of the groups whose means are being compared (Field, 2013). I here report descriptive statistics, heteroscedasticity tests, ANOVAs F tests for price increases per price ending transition, but leave the multiple comparisons contrasts (Games-Howell tests) for Appendix 2.8.2.

²⁵ Dummy variable = 1 if the item is newly introduced, 0 otherwise, both in euros and in dollars.

4.2.9.4.1. ANOVAs

I created a new categorical variable with 16 modalities, each one representing a possible price ending transition from season n to season n+1. Please refer to Table 60 below to see how this variable was coded.

Table 60 – Values of the categorical variables used in one-way ANOVA’s and corresponding price ending transitions from season n to season n+1

Categorical variable Values	Transition		Categorical variable Values	Transition	
	From	To		From	To
0	Other	Other	8	50	Other
1	Even	Even	9	Odd	Even
2	Even	50	10	Odd	50
3	Even	Odd	11	Odd	Odd
4	Even	Other	12	Odd	Other
5	50	Even	13	Other	Even
6	50	50	14	Other	50
7	50	Odd	15	Other	Odd

Table 61 – Price ending transitions’ frequency and probability - Euros; I compare price ending increases only between price ending transitions that occur at least 5% of the time (i.e., 85,3% of observations; in yellow).

Variable's Values	Transition		Frequency	Percent
	From	To		
0	Other	Other	93	10,7
1	Even	Even	80	9,2
2	Even	50	43	4,9
3	Even	Odd	4	,5
4	Even	Other	49	5,6
5	50	Even	58	6,6
6	50	50	36	4,1
7	50	Odd	54	6,2
8	50	Other	27	3,1
9	Odd	Even	24	2,7
10	Odd	50	33	3,8
11	Odd	Odd	4	,5
12	Odd	Other	169	19,4
13	Other	Even	50	5,7
14	Other	50	84	9,6
15	Other	Odd	65	7,4
Total			873	100,0

In the following ANOVAs, I only interpret pairwise comparisons for the most-commonly-observed price ending transitions (i.e., in at least 5% of the cases, highlighted in Tables 61 and 62) and whose mean is significantly different. Please refer to Appendix 2.8.2. for the full Games-Howell post-hoc tests.

Table 62 – Price ending transitions’ frequency and probability - Dollar; I compare price ending increases only between price ending transitions that occur at least 5% of the time (i.e., 70% of observations; in yellow).

Variable's Values	Transition		Frequency	Percent
	From	To		
0	Other	Other	35	4,6
1	Even	Even	61	7,9
2	Even	50	34	4,4
3	Even	Odd	7	,9
4	Even	Other	43	5,6
5	50	Even	52	6,8
6	50	50	36	4,7
7	50	Odd	16	2,1
8	50	Other	42	5,5
9	Odd	Even	28	3,6
10	Odd	50	36	4,7
11	Odd	Odd	15	2,0
12	Odd	Other	212	27,6
13	Other	Even	66	8,6
14	Other	50	63	8,2
15	Other	Odd	22	2,9
Total			768	100,0

The categorical variable with the 16 price-ending transition modalities was used as a fixed factor in the one-way ANOVA’s with Percentage Price increase in Euros and Percentage Price increase in Dollars as dependent variables.

As we can see from Tables 63a and 63b, Levene’s tests are significant. Normally, when running ANOVAs, we would hope that this test is non-significant, because this would mean that the residuals for each modality of the fixed factor have similar variances. In this case, Levene’s test is significant. Field (2013) however warns us that when sample size is very large, Levene’s test is more easily significant, and it should therefore not be problematic, if we account for it with robust methods of mean comparison, which I did with the Games-Howell tests for multiple comparisons.

Table 63a - Test of Homogeneity of Variances, Levene’s test is significant. Dependent Variable: Percentage Price increase in Euros.

Levene Statistic	df1	df2	Sig.
15,564	15	857	,000

Table 63b- Test of Homogeneity of Variances, Levene’s test is significant. Dependent Variable: Percentage Price increase in Dollars.

Levene Statistic	df1	df2	Sig.
8,463	15	752	,000

The ANOVAs shown in Table 64a and 64b are both highly significant, which means that some price ending transitions are linked to greater price increases than others.

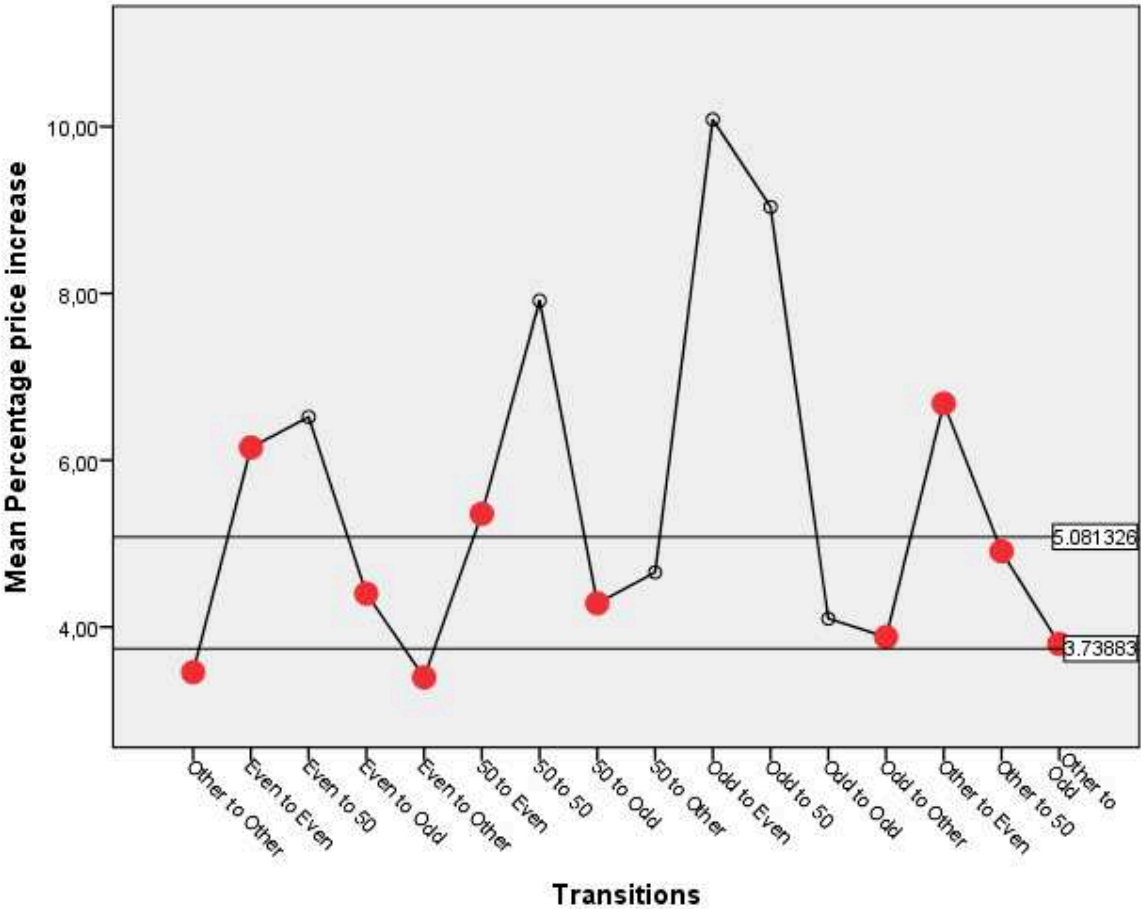
Table 64 – ANOVA of Percentage price increase in Euros (64a) and in dollars (64b) by type of price ending transition; the F statistics indicates that, overall, the difference in means between groups is significant. However, given the heteroscedasticity issues, we should look at post-hoc contrasts adjusted for heteroscedasticity and unequal group sizes.

64a - Euros	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2502,402	15	166,827	12,739	,000
Within Groups	11223,020	857	13,096		
Total	13725,422	872			

64b - Dollars	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1414,067	15	94,271	5,518	,000
Within Groups	12847,600	752	17,085		
Total	14261,667	767			

In Figure 16 below, I show the means plot of the variable Percentage price increase in euros. The fixed factor by which I run the ANOVA is the type of price ending transition from one season to the next. I highlighted in red the means of percentage price increase for those price ending transitions that are more likely to occur. Overall, we see that there are four price ending transitions that are accompanied by a price increase that is close to the total sample median, and all of these price ending transitions either result in an price with an “other” or with an odd ending (i.e., Other to other, Even to Other, Odd to Other and Other to Odd). All other price ending transitions are accompanied by a greater-than-the-median percentage price increase. The most common price ending transitions that are accompanied by the greatest percentage price increase are Even to Even, 50 to Even, Other to Even. So, we observe that prices that are increased to result in an “other” or in an odd price are often the ones to which managers apply the smallest price increase, which is consistent with the accessible luxury connotation of these two price endings. Also, consistently with what we have observed so far, prices that are increased to result in an even price are accompanied by the biggest price increase.

Figure 16 – Means plot of % price increase by type of price ending transition. Please find in red the mean percentage price increase for price ending transitions that occur at least 5% of the time in the observed sample in euros. The total sample average percentage price increase is 5,081%, the median is 3,74%.



In Table 65 below, I report significant differences of means of percentage price increase in euros between the most recurring price ending transitions. We see that the maximum difference in percentage price increase is +/-3% between some price ending transitions. For example, the average percentage price increase for prices that keep an “other” price ending, before and after the price increase, is 3% smaller than the average percentage price increase for prices that keep an even ending, before and after the price increase. Once again, if we interpret these results keeping in mind previous findings that even prices are most likely used for rather “inaccessible” handbags and that odd and “other” prices are mostly used for accessible handbags, then it makes sense to see that, even when prices must be increased, pricing managers will try to limit the price increase for those items that are target to less wealthy consumers. It follows that in order to maintain a low price, the price increase from one season to the following should be small, or the handbag will easily shift into a higher price range. On the contrary, price setters can afford to increase prices more freely for items

that are already inaccessible to begin with, because the target customer should not be concerned with spending large amounts of money.

Table 65 – Significant Pairwise comparisons of % Price increase in euros for most-recurring price ending transitions.²⁶

Comparison between price ending transitions - Euro		Mean Difference	Std. Error	Sig.
Other to Other	Even to Even	-3%	,00641	,005
Other to Other	50 to Even	-2%	,00474	,011
Other to Other	Other to Even	-3%	,00828	,021
Even to Even	Even to Other	3%	,00605	,002
Even to Even	Odd to Other	2%	,00629	,038
Even to Even	Other to Odd	2%	,00619	,021
Even to 50	Even to Other	3%	,85302	,047
Even to Other	50 to Even	-2%	,00423	,002
Even to Other	50 to Odd	-1%	,00143	,000
Even to Other	Other to Even	-3%	,00801	,012
Even to Other	Other to 50	-2%	,00413	,033
Other to Even	Other to Odd	-3%	,00811	,055

In Figure 17, I show the means plot of the variable Percentage price increase in dollars. Like in Figure 16, the fixed factor by which I run the ANOVA is the type of price ending transition from one season to the next, this time for prices in dollars. I highlighted in blue the means of percentage price increase for those price ending transitions that are more likely to occur. We see that, by far, a transition from Even to Even, is accompanied by the highest percentage price increase, while all other price ending transitions are accompanied by price increases there are closer to the median and the mean of the total sample.

Among the seven most-recurring price ending transitions, the only significant difference in percentage price increase is the one between a transition from Even to Even and a transition from Odd to “other”. Once again, we can easily explain the fact that the former transition is accompanied by a substantially bigger price increase than the former, by the fact that even prices are already used on more expensive items, while odd and “other” prices are rather used

²⁶ Having 16 possible price ending transitions (Even to even, even to odd, even to -50, even to “other”, Odd to Even, etc.) means having to compare and interpret 120 unique pairs of price increase means, which is, in practice, impossible to do and moreover, even where means were significantly different, there would not be any theoretical reason to explain such differences. However, as previously mentioned, you can find the complete post-hoc tables in Appendix 2.8.

for more accessible products. So accompanying these price ending transitions by coherent price increase will help reinforce the connotation of the price endings. Please refer to Table 66.

Figure 17 - Means plot of percentage price increase by type of price ending transition. Please find in blue the means percentage price increase for price ending transitions that occur at least 5% of the time in the observed sample. The total sample average percentage price increase is 6,48%, the median is 6,04%.

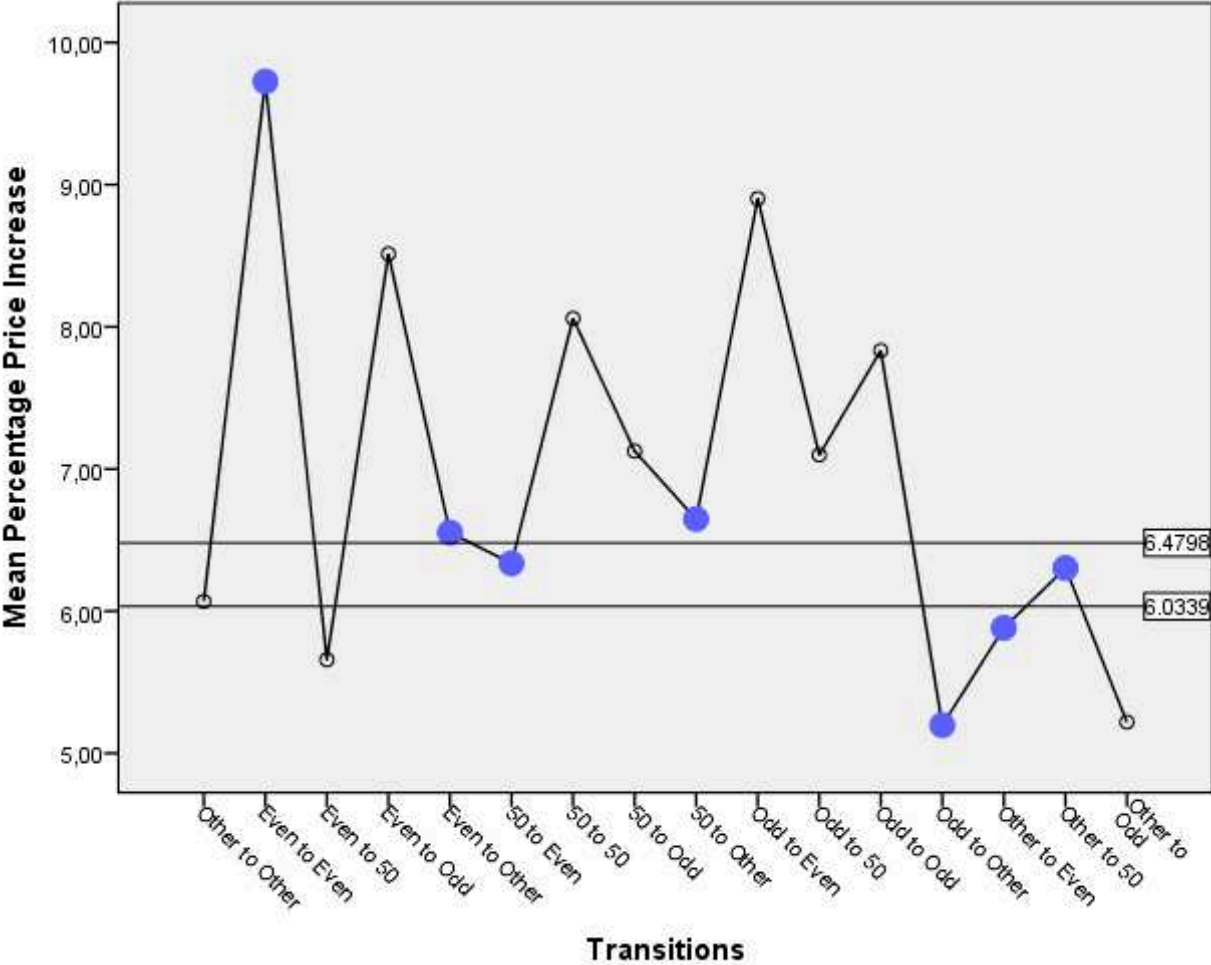


Table 66 – Significant Pairwise comparisons of % Price increase in dollars for most-recurring price ending transitions.²⁶

Comparison between price ending transitions - Dollar		Mean Difference	Std. Error	Sig.
Even to Even	Odd to Other	5%	1,11930	,012

The last analysis I conduct to investigate the link between price ending transitions and price increase (%) is a linear regression, in which I include all possible price ending transitions as dummy variables and percentage price increase as a dependent variable. Please refer to Table 67.

Table 67 – Linear regression which shows the impact of price ending transitions on the percentage magnitude of price increase for both currencies.

VARIABLES		(1)	(2)
Transition	To	Price increase % €	Price increase % \$
Even	Even	0.00706 (0.00520)	0.0269*** (0.00858)
Even	50	0.0105* (0.00623)	-0.00352 (0.00963)
Even	Odd	-0.0119 (0.0168)	0.0192 (0.0166)
Even	Other	-0.00568 (0.00590)	0.00763 (0.00915)
50	Even	-0.00509 (0.00572)	-0.000497 (0.00876)
50	50	0.0143** (0.00676)	0.0151 (0.00957)
50	Odd	-0.0131** (0.00604)	-0.00785 (0.0123)
50	Other	0.00480 (0.00707)	0.00509 (0.00918)
Odd	Even	0.0203** (0.00809)	0.0126 (0.0103)
Odd	50	0.0157** (0.00715)	-0.00684 (0.00974)
Odd	Odd	-0.00690 (0.0170)	0.00202 (0.0125)
Odd	Other	-0.000919 (0.00436)	0.00216 (0.00743)
Other	Even	0.0109* (0.00611)	0.000131 (0.00845)
Other	50	-0.00195 (0.00530)	0.00183 (0.00852)
Other	Odd	-0.0152*** (0.00579)	-0.00648 (0.0110)
Constant		0.0935*** (0.00602)	0.0818*** (0.00792)
Observations		875	772
R-squared		0.353	0.190
Brand and Season effects		YES	YES
Adj. R-squared		0.340	0.171
VIF		1.547	1.235

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

As we can see in Table 67, a transition from a 50-ending price to another 50-ending price, from an Odd to an Even price, from an Odd to a 50-ending price for the euro sample and from an Even to another Even price for the dollar sample are accompanied by a greater percentage

price increase, while a transition from a 50-ending price to an Odd and a transition from an “Other” price to an Odd price are accompanied by a smaller percentage price increase.

The problem with running a linear regression with the percentage price increase as a dependent variable and each of the 16 types of price endings transitions as predictors, is that the linear regression implies a causality direction, i.e., it implies that it is the type of price ending transition that determines the level of price increase. Because we do not know how price increases are decided, we cannot really determine what is the direction of causality. For example, it might be that a 50-ending price for a given item has to be increased to increase revenues but without compromising the sales volume, and the price setter decides to increase it as much as possible without going beyond the closest hundred. In this case, they would be determining the new price ending first, let’s say -90 or -95, and the percentage price increase would be a result of the price ending transition decision (from -50 to -90/-95). In this case, the analysis reported in Table 67 would be relevant and correct. However, if, for example, the percentage price increase were imposed by the finance department, then the price setter would apply a percentage increase on a price from the previous season and then round up or down to the closest ten. In this case, the two regressions in Table 67 would clearly be subject to endogeneity problems, in that the causality relationship would have to be inverted and it would also have to take into account other exogenous variables that I was not able to measure. This is clearly something that will have to be investigated further in future research.

4.3. Discussion and Limitations

After establishing in Chapter 3 that, probably against one’s intuition, odd prices are frequently used for luxury handbags, that even prices are less common than expected (i.e., they are not the totality of prices we observe) and that other kinds of prices are also widespread in this luxury product category (e.g., prices in -50 and “other” prices in -10, -20, etc.), in Chapter 4, I analyzed the determinants of the use price endings. Thanks to the existing literature, I could formulate three main propositions, that I later detailed in hypotheses, which I was then able to test empirically. As explained, pricing practices regarding 50-ending and “other” prices have never been investigated before, so this part of the research was rather exploratory than confirmatory.

The three main propositions that were formulated as a result of the conceptual framework are the following:

- Odd prices are more commonly applied to accessible luxury handbags;
- Even prices are more commonly applied to (relatively) inaccessible luxury handbags;
- There is a progressive transition from the prevalent use of odd prices to the prevalent use of even prices, which might be compensated by the use of other price endings (-50 and “other”).

Because accessible luxury is of a lower quality and less expensive than inaccessible luxury (Alleres, 1991; Castarède, 2014) and because it has been found that brand prominence has an inverse relationship with a luxury product’s price (Han & al, 2010), I hypothesized that:

- Odd prices are more commonly applied to handbags that have a lower price, that are made of lower-quality materials and that show their brand logo;
- Even prices are more commonly applied to handbags that have a higher price, that are made of higher-quality materials and that do not show their logo.

Moreover, since odd prices have been found to communicate to consumers that the price has not been recently increased (Schindler, 1984) and because I observed that Louis Vuitton and Gucci increase their prices twice a year without improving the corresponding products, I also hypothesized that:

- Odd prices are applied to increased prices to dissimulate the price increase.

Let’s see the main findings in detail.

Main relationships between price, material and brand prominence are confirmed. All of my hypotheses were based on previously investigated links between material, price and brand prominence. In order to test my hypotheses, I therefore first needed to verify that such relationships subsisted in the collected data. As shown back in Table 14, material is positively and significantly correlated to price. Logo visibility, which is the proxy I used for brand prominence, is inversely and significantly correlated to price, both in euros and in dollars. This confirms previous findings by Han & al (2010).

From individual-analysis findings to general findings. The hypotheses were tested on several samples, sometimes on cross-sectional data, sometimes on longitudinal data, in euros,

in dollars, for a brand individually or for more than one brand at once. Because of this, it is difficult to visualize the bigger picture and make sense of the sometimes-inconclusive results. To facilitate this task, I report in Table 68 on the next page a summary of all findings. The table is divided in two columns: on the left, we find the test of the hypotheses. Whenever the finding of one specific analysis confirms the expected relationship, it is highlighted in green; if the effect was non-significant the cell is highlighted in yellow and if the effect was significant but in the opposite direction compared to what had been hypothesized, then the cell is highlighted in red.

On the right, I report findings of the exploratory part of the studies. “No hp” (i.e., no hypothesis) means that no hypothesis was formulated for the effect of the predictor on the probability of observing a 50-ending or an “other” price. Whenever a cell is highlighted in green on the right part of the table, it means that across all samples, the same results were found and they were all significant. Otherwise, no consistent effect was found so we can either conclude that the results on a specific predictor are inconclusive (e.g., when we find significant results, but sometimes the effect of the predictor is positive and sometimes it is negative) or that the predictor is not actually relevant in the analysis (e.g., when the effect was on average non-significant).

Table 68 - Summary of all hypotheses and results for managerial practices

	<i>Expected effect drawing from the literature</i>				<i>Exploratory study</i>			
	<i>Odd €</i>	<i>Odd \$</i>	<i>Even €</i>	<i>Even \$</i>	<i>50 €</i>	<i>50 \$</i>	<i>Other €</i>	<i>Other \$</i>
Material	-	-	+	+	No hp	No hp	No hp	No hp
Logo Visibility	+	+	-	-	No hp	No hp	No hp	No hp
Price	-	-	+	+	No hp	No hp	No hp	No hp
<i>Effects observed in Cross section - All brands Spring 2014</i>								
	<i>Odd €</i>	<i>Odd \$</i>	<i>Even €</i>	<i>Even \$</i>	<i>50 €</i>	<i>50 \$</i>	<i>Other €</i>	<i>Other \$</i>
Material	-	-	+	+	+	/	-	-
Logo Visibility	+	+	/	-	-	/	/	/
Price	-	-	+	+	-	-	-	-
<i>Effects observed in Louis Vuitton - Panel data</i>								
	<i>Odd €</i>	<i>Odd \$</i>	<i>Even €</i>	<i>Even \$</i>	<i>50 €</i>	<i>50 \$</i>	<i>Other €</i>	<i>Other \$</i>
Material	-	-	+	+	+	+	-	-
Logo Visibility	+	-	-	/	/	/	/	/
Price	-	-	+	+	-	/	-	-
<i>Effects observed in Gucci - Panel data</i>								
	<i>Odd €</i>	<i>Odd \$</i>	<i>Even €</i>	<i>Even \$</i>	<i>50 €</i>	<i>50 \$</i>	<i>Other €</i>	<i>Other \$</i>
Material	-	-	+	+	-	-	-	-
Logo Visibility	+	/	-	-	-	/	/	+
Price	-	-	+	+	-	-	-	-
<i>Effects observed for both LV and Gucci - Panel data</i>								
	<i>Odd €</i>	<i>Odd \$</i>	<i>Even €</i>	<i>Even \$</i>	<i>50 €</i>	<i>50 \$</i>	<i>Other €</i>	<i>Other \$</i>
Material	-	-	+	+	+	/	-	-
Logo Visibility	+	/	-	-	/	/	/	+
Price	-	-	+	+	-	-	-	-

Testing the hypotheses. As we can see from Table 68 above in the left column, nearly all hypotheses are confirmed:

- The quality of the material is a negative predictor of the probability of observing an odd price and a positive predictor of the probability of observing an even price;
- Price, both in euros and in dollars, is a negative predictor of the probability of observing an odd price and a positive predictor of the probability of observing an even price;
- Logo visibility is a positive predictor of the probability of observing an odd price in euros and a negative one of the probability of observing an even price both in euros and in dollars. Sometimes the effect is non-significant and once it is significant but in the opposite direction so that it disconfirms the hypothesis (in the dollar sample).

Why is logo visibility an unpredictable predictor? There are three possible explanations, that I can think of, for the inconclusive results concerning the role of logo visibility in determining the use of odd and even prices:

- Pricing managers for the US might not be aware of the otherwise well-established connotation of prominent luxury handbags, which are supposedly cheaper and of lower quality;
- Pricing managers in the US are not aware of odd and even prices connotations;
- Pricing managers are well aware that prominent handbags should be cheaper and of lesser quality and that odd prices have a “cheap” connotation while even prices are more appropriate for the higher end of a market, but do not reason by analogy, so they do not reproduce the same patterns they observe elsewhere.

Personally, I would exclude the last of the three explanations, because if it really were the case that managers do not reproduce patterns as they observe them elsewhere, we would not be able to confirm material and price as predictors either, which, on the contrary, we do.

General propositions on odd and even prices find support. Overall it therefore seems that the first two generic propositions that odd prices are mostly used for accessible luxury handbags, while even prices are mostly used for inaccessible luxury handbags seem to find support in my analyses, both in cross-sectional and longitudinal data, both in euros and in dollars. We do not know whether managers reproduce these patterns consciously or unconsciously, but it is evident that odd and even prices are determined in a way that induces us to believe that

pricing managers in a luxury context might indeed reason by analogy and reproduce patterns that they have seen somewhere else in a non-luxury market.

The third proposition was that, because the transition from accessible to inaccessible luxury is not sharp, but rather progressive, also the transition from a prevalent use of odd to a prevalent use of even prices should be progressive and possibly accompanied by an increase of the use of 50-ending and “other” prices in the middle.

50-ending prices are used for intermediate luxury handbags. Indeed, we clearly saw in price ending distributions per material and per price range and in logistic regressions with a different operationalization of logo visibility and material (Appendix 2.4) that odd prices are mostly “reserved” for less expensive, canvas handbags showing a brand logo and that even prices become more and more likely as we move from a material to a more prestigious one and as brand logos become invisible. But what happens in between? 50-ending prices are mostly used for leather handbags that belong to the middle price range. It seems to be the chosen price ending to communicate that the handbag is positioned in the middle of the product range, i.e., intermediate luxury handbags. This is clear when looking at price-ending distributions, although it is not always a significant result in regressions, which might be due to the fact that when classifying materials in a ordinal way (from 1 = canvas to 3= exotic leather), the transition from 1 to 2 (i.e., leather) might have a positive impact on the likelihood of observing a 50-ending price, but then going from 2 to 3 might have a negative effect, so that, overall, the two transitions compensate each other and we observe a non-significant result, while, had I used a different variable operationalization (like I did back in Table 25b) with indicators rather than a multi-categorical variable, I would have clearly observed that 50-ending prices are typical of intermediate luxury handbags.

“Other” prices are used like odd prices. The use of “other” price endings is very consistent across samples. For prices in euros, results are always the same, regardless of the observed sample. For both currencies, material and price are always negative predictors, while logo visibility does not play any role in determining the probability of observing an “other” price in euros, while the results are inconclusive for the effect of logo visibility on “other” prices in dollars. So, we can conclude that odd prices are used for approximately the same type of handbag as odd prices, possibly interchangeably, except that their use is not influenced by logo visibility, while the use of odd prices is. So odd prices have an even stronger association with accessible luxury, due to their use in correspondence of prominent handbags.

As previously explained, a possible explanation for the use of odd and “other” prices for accessible luxury handbags is that as the price increases, managers focus less on the rightmost digits, because of the increased value of the leftmost digits. This is why, overall, when prices increase we observe less odd, less 50-ending, less “other” prices and more even prices. As they increase, prices seem to be determined in a less precise way; managers and possibly consumers, are no longer reasoning in terms of tens of euros or dollars, but in terms of hundreds and thousands and the relative value of tens becomes negligible, just like decimal figures of prices in the FMCG. So, as we move towards inaccessible luxury, instead of determining prices to the tens (e.g., 1410, 1420, 1430, 1440, etc.) they are determined to the hundreds (e.g. 2400, 2500, 2600, etc.). In general, if customers indeed truncate prices, i.e. they completely ignore rightmost digits, it is smart of companies to use a -90 ending because they maximize their unit revenue without impacting the sales volume.

A price increase does not result in an odd price. One last hypothesis that emerged from the literature was that brands such as Louis Vuitton and Gucci might use odd prices to hide a price increase. We saw how, on average, prices for Louis Vuitton are increased by 3 to 4% in euros and by 4 to 6% in dollars and for Gucci prices are increased by 5 to 8% in euros and by 6 to 7% in dollars. So, first of all, we can observe that in percentage values, prices in dollars are usually increased more than prices in euros, on top of being higher to begin with. Moreover, while for Louis Vuitton, price increase was not a significant positive predictor of the probability of observing a resulting odd price, for Gucci, it has a significant, however negative effect. As mentioned, although this is surprising relative to the literature and to the formulated hypothesis, it can be explained logically: since we have found that the higher the price, the less likely it is to observe an odd price, it makes sense that when the price increases, the resulting price will be less likely to be odd, simply because it is a higher price.

How do price endings evolve? The next step was to investigate how “stable” price endings are. Because we find that material, price and logo visibility are quite stable predictors for the use of one or the other price ending, we might have imagined that from one season to the next price endings are kept the same, despite the price increase, because material, price range and logo visibility are fixed for a given product. Once again, given that price ending transitions were analyzed one by one on several samples, it might be hard to make sense of all the significant findings, so for simplicity, I report a similar table to the one we have just seen, which you can find below (Table 69). Please find in green significant and consistent results,

in yellow significant and consistent results, which were however not observed for all samples, and in red significant but inconclusive results.

Table 69 – Impact of price endings in previous season on next season price endings.

<i>Effects observed in Louis Vuitton - Panel data</i>									
	<u>Odd €</u>	<u>Odd \$</u>	<u>Even €</u>	<u>Even \$</u>		<u>50 €</u>	<u>50 \$</u>	<u>Other €</u>	<u>Other \$</u>
Lagged Odd	-	/	/	/		-	/	+	/
Lagged Even	-	/	+	/		/	+	+	/
Lagged 50	+	/	+	+		/	/	-	/
<i>Effects observed in Gucci - Panel data</i>									
	<u>Odd €</u>	<u>Odd \$</u>	<u>Even €</u>	<u>Even \$</u>		<u>50 €</u>	<u>50 \$</u>	<u>Other €</u>	<u>Other \$</u>
Lagged Odd	/	/	/	/		/	/	+	/
Lagged Even	/	/	/	/		/	/	/	/
Lagged 50	/	+	/	/		/	/	+	/
<i>Effects observed for both LV and Gucci - Panel data</i>									
	<u>Odd €</u>	<u>Odd \$</u>	<u>Even €</u>	<u>Even \$</u>		<u>50 €</u>	<u>50 \$</u>	<u>Other €</u>	<u>Other \$</u>
Lagged Odd	-	/	/	/		/	+	+	/
Lagged Even	-	/	+	/		/	/	+	/
Lagged 50	+	/	+	/		/	/	-	-

Price endings change from one season to the next. In general, if we consider Louis Vuitton and Gucci together, when there is a price increase, price endings are not fixed. On the contrary, an odd price is unlikely to be odd twice in a row, but it is likely to have a price that end in either -50 or “other”. An even price is also unlikely to be odd-priced in season n+1, it is on the contrary likely to be again even or become “other”. Finally, a 50-ending price in season n, is the most likely to become an odd price in the following season or to become even, while it is also the least likely to become “other”. To sum up, price endings change from one season to the next, and 50-ending prices are the most likely to become odd or even when increased. I leave to further research to identify the determinants of such changes in price endings, since clearly there are other variables beyond quality of material, price and logo visibility that play a role. My guess is that an important role could be played by the percentage increase in unit revenue that is asked by the finance department and by the “landing” price ending that is obtained when applying the simple percentage increase from one season to the next. Unfortunately, in order to obtain this kind of information, it would have been necessary to conduct additional qualitative research and interview pricing managers to know how they go about price increase twice a year.

The final part of this chapter dealt with correlations between types of price ending transitions and price increase.

On the one hand, we observed that increased prices that result in “other” or odd endings are normally accompanied by a smaller price increase than increased prices that result in even endings. Odd and “Other” prices are most often applied to accessible luxury handbags which are less expensive compared to the entire product range. It follows that in order to maintain a low price, the price increase from one season to the following should be small, or the handbag will easily shift into a higher price range. On the other hand, we observed that price increases that are above the sample average are usually accompanied by price ending transitions that results in an even price. This is justifiable in that Even prices are associated with higher-end and intermediate luxury handbags, so it makes sense that whenever increasing a price to result in one of these two endings, the management can afford to have a higher price increase, because we are already dealing with more expensive products, which are targeted to less price-sensitive customers, so there is no lower-price connotation that risks being damaged.

4.3.1. Limitations

The main limitation of these studies is that they only cover one product category: for other product categories prices might be set differently, especially if we consider different price ranges (what about odd endings applied to prices of luxury cars?).

A second limitation is that all luxury products observed have been classified as either showing a logo or not showing a logo. I am aware that even among products that show a logo, there are some that will be more prominent than others. In the same manner, a product can be prominent by showing other features typical of its brand, without showing its logo. Ideally, like Han, Nunes & Drèze (2010), I should have asked a number of experts to help me rank all the observed products in terms of brand prominence. In practice, given the very large size of the samples and given the longitudinal dimension of the panel data, it would have been very difficult to put to practice. I therefore relied on my judgment to establish whether the logo was visible or not on the bag. Similarly, when operationalizing the variables, I decided that all leather and exotic leather handbags would be of equivalent quality. In reality, several qualities of leather exist, some much more expensive than others and also within the exotic leather group, not all exotic leathers are the same: crocodile, for example, is much more precious than python or ostrich, and therefore much more expensive. So, again, if I had had the chance to ask experts to help me rank the quality of handbags, I would have surely have had many more levels of quality to account for.

Surely, it would have been interesting to have access to sales data and observe whether with the evolution of price from one season to the next and the corresponding price ending transitions sales increased or decreased. Despite several efforts to work with luxury brands, I had to abandon the idea that I would be able to analyze their sales data. Interestingly, speaking informally with the pricing manager of one of the observed brands caused the number of odd prices to decrease drastically in the following season, but did not help get hold of the desired data.

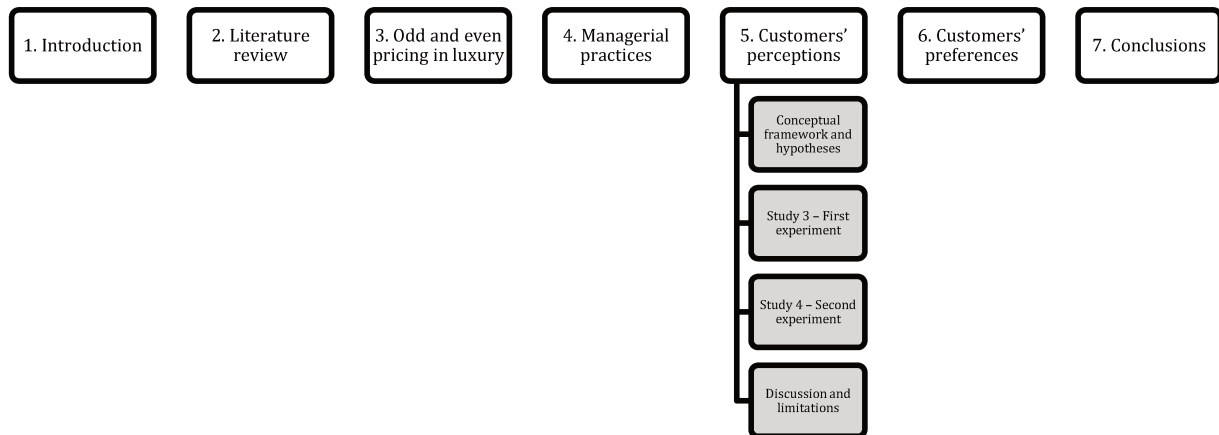
4.3.2. Contributions

With these two studies, I contribute to both the literature on luxury and on odd and even prices. Firstly, to the best of my knowledge, no data on prices of luxury products has ever been collected in a longitudinal manner. This study is therefore, to the best of my knowledge, the first to study the evolution of prices of a luxury product category and to observe that prices are increased although the corresponding products are not improved. These data could probably be used to test other hypotheses in another piece of research. However, as automatic data crawling becomes available, the interest of these data will soon become obsolete.

Secondly and most importantly, the main contribution of these two studies is that I was able to identify the determinants that supposedly guide pricing managers in the determination of price endings in a luxury product category. I therefore contribute to the literature on luxury pricing, which is, as of today, scarce and mainly qualitative. Moreover, it is possible that the 4 determinants that I have identified in my samples (material quality, logo visibility, price and lagged price ending) might also be determinants of the use of odd and even prices in other non-luxury contexts. In this sense, I also contribute to the literature on odd prices, which has been so far specifically focused on FMCG with very few examples of more expensive products.

Lastly, I contribute to the literature by being the first to discuss patterns of use of 50-ending and “other” prices, which have traditionally been ignored. We have seen how 50-ending prices have a middle-of-the-product-range positioning and that “other” prices are comparable to odd prices in their use, although they are much less frequent.

Progress – This chapter will deal with point 5.



5. Customers' perceptions of odd and even prices – Effects on product image

In the first part of this research, I identified the determinants of odd and even pricing practices in the luxury handbag product category. I showed that the luxury brands that I have observed are more likely to set odd prices for handbags that are cheaper, of lower quality and that show their logo. On the contrary, even prices are more likely to be applied to more expensive, higher quality and more discreet products. 50-ending prices are mostly used for intermediate luxury handbags, made of canvas and in the intermediate price range. Also, I showed that certain brands do not use odd prices at all, while others use them for nearly 70% of their references (e.g., Lancel and Yves Saint Laurent).

Given the four price-ending practices which have been identified in the women handbag category, i.e., odd, even, 50-ending and “other” endings, the purpose of this second part is to develop and test a conceptual framework to hypothesize how consumers might perceive different price endings in terms of luxury product image. First, I will present hypotheses on main effects odd and even prices might have on the different luxury facets. Then, I will propose some moderators of these main effects.

On top of the dimensions of product's image suggested by the literature on odd pricing (i.e., price image, quality image and prestige image), I will also test whether different price endings might have an impact on perceived uniqueness (which I will, from now on, refer to as

“Uniqueness image” for consistency with the other three constructs), given that odd pricing is typical of mass produced products which are, by definition, not unique.

5.1. Conceptual framework - Main effects of odd and even prices

Odd prices / Price image. Several authors have shown how odd prices have both an underestimation effect (Bizer & Schindler, 2005; Coulter, 2007; Manning & Sprott, 2009; Schindler & Wiman, 1989) and a low-price image effect (Naipaul & Parsa, 2001; Quigley & Notarantonio, 1992; Schindler, 1984, 2006; Schindler & Kibarian, 2001). This means that, when exposed to an odd price, consumers are likely to perceive the price as lower than it is, as low compared to other prices available for the same product elsewhere, as discounted or at least as not recently increased. We have seen how expensiveness is a fundamental aspect of luxury products. Because luxury goods are usually sold through exclusive distribution channels where prices are imposed by the firm, prices for a given product do not vary from one store to another in the same country. Also, there are very few brands, such as Gucci, that have a sales season during which it is possible to buy very few selected items at a discounted price, while most luxury brands will never even discount their products throughout the year, as it is the case for Louis Vuitton. Bastien & Kapferer (2012) even state that a brand that applies sales reductions cannot be considered a luxury brand.

Most consumers are most likely aware that luxury brands always apply the same price to the same product in different stores. It is therefore difficult to imagine that they might be led to believe that an odd price is a relatively low price compared to prices they could find in another store for the same item. However, since luxury brands usually increase prices twice a year and consumers are less likely to notice that an odd price has been increased (Schindler, 1984) consumers might be led to believe that an odd-priced item has a low-price image in the sense that it is cheaper than other products in the store, that it is therefore more accessible, that the price has not been increased recently or that it has been increased less than other prices (as we have seen is the case in the observed samples).

- Hp_{4a}: Consumers will perceive a lower price image for an odd-priced product compared to consumers who are exposed to the same product with other price endings.

Even prices / Price image. Although it has never been tested empirically, Schindler (1991) suggests that even prices will be interpreted as high prices, as prices that are more likely to

have been increased or at least unlikely to have been decreased, as full, regular prices (as opposed to the discount connotation, typical of odd prices). Naipaul & Parsa (2001) find that restaurants that offer more expensive dishes with starters priced above \$10 tend to use mostly even prices ending in -0, or alternatively prices ending in -5. Therefore, one can hypothesize that even prices will maintain the same connotations of high prices (compared to other products in the store) and of being more likely to have been increased also when they are applied to luxury goods and this will increase the perceived expensiveness of the product compared to products that have other price endings. Moreover, as we have seen in the previous chapter, even prices are indeed applied to more expensive luxury products and they are more likely to have been subject to a greater price increase than prices with other endings.

- Hp_{4b}: Consumers will perceive a higher price image for an even-priced product compared to consumers who are exposed to the same product with other price endings.

Odd prices / Quality image. Several authors find that odd pricing is likely to have a negative effect on perceived quality (Gedenk & Sattler, 1999; Macé, 2012; Schindler et al., 2011; Schindler & Kibarian, 2001). In the literature, this is referred to as *quality image effect*. According to Schindler & Kibarian (2001) this effect is stronger when the product's quality is high to begin with, and this is confirmed by Macé (2012) who finds that premium products suffer the most from the use of odd prices. Luxury goods are supposed to be of excellent quality (Bastien & Kapferer, 2012; Vigneron & Johnson, 2004; Wiedmann et al., 2009), it is therefore reasonable to assume that quality image effects will apply to luxury, even stronger than they would to non-luxury products, given the superior quality of luxury.

- Hp_{5a}: Consumers will perceive a lower quality image for an odd-priced product compared to consumers who are exposed to the same product with other price endings.

Even prices / Quality image. Again Schindler (1991) suggests that even prices are typical of high quality products and that in general they are applied by retailers who carry high quality products, as also observed by Stiving (2000). Naipaul & Parsa (2001) find that, when menu prices end with -0, consumers believe the restaurant to have high overall quality and that, if consumers base their choice for a restaurant on quality they are more likely to choose restaurants with prices ending in 0. Moreover, Schindler et al. (2011) find that interviewed

managers who use round prices do so because they believe that customers will perceive higher quality. Even prices' high quality connotations should a priori persist also when applied to luxury goods, therefore I hypothesize that a luxury product's perceived quality will be higher when the product is even-priced than when it is not.

- H_{p5b} : Consumers will perceive a higher quality image for an even-priced product compared to consumers who are exposed to the same product with other price endings.

Odd prices / Prestige image. Schindler & Kibarian (2001) find that applying an odd price to some products' advertisements has a negative impact on perceived classiness of the retailer carrying these items, compared to an even price. Similarly, Stiving (2000) observes that retailers that are normally considered as "not classy", such as WalMart, Kmart, Target, usually use odd prices. Naipaul & Parsa (2001) find that odd prices are typical of quick service restaurants (which they oppose to fine-dining restaurants). Although these findings concern mostly the impact odd prices might have on the retailers who apply them, it is reasonable to assume that if an odd price influences the retailer's image, then it might also have a more direct impact on the image of the product carrying it. Given also that even prices are considered "prestigious", "sophisticated" and "classy" because they indicate that consumers they are addressed to are "above thinking about pennies" (Schindler, 1991 citing Feinberg, 1962; Spohn & Allen, 1977), by contrast, setting an odd price on luxury products with such high prices, might lead the consumers to believe that the retailer thinks they do care about saving a small amount of money. For example, a consumer interested in buying a Gucci Stirrup handbag in leather in Summer 2013 might perceive that asking her to pay 2590 € instead of 2600 € is not classy, because it assumes that for her those additional 10 € make a difference, when really compared to the total amount paid it is just a tiny difference of 0,4%. Moreover, Vigneron & Johnson (1999, 2004) suggest that the expensiveness of a product contributes to the perception of prestige and status it confers. Since we have seen how odd prices are usually underestimated and therefore perceived as cheaper than what they really are, we can also assume that they will have a negative impact on perceived prestige of the product by decreasing the perceived expensiveness. The following hypothesis is therefore that applying an odd price to a luxury product will have a negative impact on customer's perception of product prestige.

- Hp_{6a}: Consumers will perceive a lower prestige image for an odd-priced product compared to consumers who are exposed to the same product with other price endings.

Even prices / Prestige image. Georgoff (1972) suggests that “the digit 0 tends to create a prestige effect, which deters price conscious consumers, while appealing to quality-conscious consumers”. Similarly, Schindler (1991) reports that even endings might contribute to giving a store or a product an image of classiness, sophistication or prestige (citing Alpert, 1971; Feinberg, 1962; Spohn & Allen, 1977). Also, he points out how leaving out the cents digits might communicate classiness and prestige because it shows how customers patronizing that store are “above thinking about pennies”. Stiving (2000) observes that retailers with a classy image such as Neiman-Marcus, Nordstrom and Macy’s are the most likely to use prices that end in -0. Schindler & Kibarian (2001) also find that a store carrying even-priced products is perceived as classier than a store carrying odd-priced products. Prestige is one of the main dimensions of the luxury concept, and several authors suggest that the higher the price of a product, the higher its prestige (Bagwell & Bernheim, 1996; Leibenstein, 1950). Since even prices are perceived as higher prices, then they should also have a positive effect on customer’s perception of product prestige.

- Hp_{6b}: Consumers will perceive a higher prestige image for an even-priced product compared to consumers who are exposed to the same product with other price endings.

Odd prices / Uniqueness Image. In the literature, there is no known impact of odd pricing on perceived product uniqueness. However, being odd pricing typical of FMCG (Harris & Bray, 2007; Schindler & Kirby, 1997), and being FMCG by definition goods that are sold in large volumes which allow firms to yield profits despite the low unit margin (i.e., they belong to the mass consumer goods category; Leahy, 2011), I hypothesize that applying an odd price to a luxury product will have a negative impact on product’s uniqueness image, because of the FMCG connotation. Moreover, odd prices are supposedly perceived as lower prices, and lower prices are accessible to more customers, so odd-priced products should be perceived as more common, less unique.

- Hp_{7a}: Consumers will perceive a lower uniqueness image for an odd-priced product compared to consumers who are exposed to the same product with other price endings.

Even prices / Uniqueness Image. Even prices are supposedly perceived as higher prices. According to the standard law of demand, the higher the price of a product, the fewer the people that will be ready to acquire the good. Therefore, if an even price is perceived as more expensive, fewer people should be willing to pay the price, which means that the product becomes less common, i.e., more unique. Moreover, according to Amaldoss & Jain (2005) there is an entire category of consumers, the snob, who enjoy a (perceived) higher price because it enhances the product's uniqueness image. Therefore, an even price should enhance the perception of product uniqueness because of the higher perceived price.

- Hp_{7b}: Consumers will perceive higher uniqueness for an even-priced product compared to consumers who are exposed to the same product with other price endings.

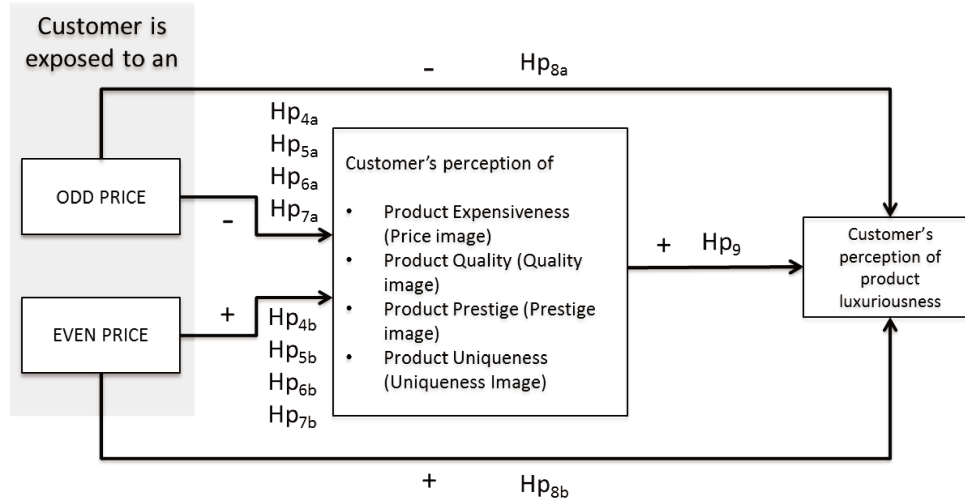
We have seen how price, quality, prestige and uniqueness images are all facets of a more general concept, i.e., luxury (Hagtvedt & Patrick, 2009; Vigneron & Johnson, 1999, 2004; Wiedmann et al., 2009). Since I expect odd prices to have a negative effect and an even price a positive effect on all the above, odd prices should have an overall negative impact on the perception of luxury (i.e., is the product perceived as a luxury product?) and even prices to have an overall positive impact on the perception of luxury. In other words, an odd-priced product should be perceived as less luxurious, and an even-priced product should be perceived as more luxurious.

- Hp_{8a}: Consumers will perceive an odd-priced product to be less luxurious than consumers who are exposed to the same product with other price endings.
- Hp_{8b}: Consumers will perceive an even-priced product to be less luxurious than consumers who are exposed to the same product with other price endings.

Again, because price, quality, prestige and uniqueness images are all different dimensions of an overall perception of luxury (Hagtvedt & Patrick, 2009; Vigneron & Johnson, 1999, 2004; Wiedmann et al., 2009) and because their perception should be impacted by price endings, I am expecting price, quality, prestige and uniqueness images to mediate the effect of odd and even prices on overall perceived luxuriousness, as shown in Figure 18.

- Hp₉: Price, quality, prestige and uniqueness images mediate the effect of odd and even prices on overall perceived luxuriousness.

Figure 18 - Conceptual framework – Impact of odd and even prices on customers’ perception of the product



5.2. Conceptual framework – Proposed moderators

Previous research shows how consumers are heterogeneous in their preferences for odd or even prices (Baumgartner & Steiner, 2007; Macé, 2012) and we have seen how luxury consumers are not one homogeneous group, but they can be further segmented in several possible ways (Berthon et al., 2009; Han et al., 2010; Vigneron & Johnson, 1999; etc.). Because of this heterogeneity, it is reasonable to assume that not all luxury goods’ consumers will react in the same way when exposed to an odd or an even price: according to the motivations that move them to engage in luxury consumption or to the attitude towards price and money they might have, they might place more or less importance on the price attribute and consequently react differently to odd and even prices.

Price-quality schema. For example, it has been shown that also beyond the luxury sector, the relationship between price and perceived quality (quality image) is statistically significant and positive (Rao & Monroe, 1989). The tendency across product categories to believe that the level of the price cue is related positively to the quality level of the product is referred to in the literature as *price-quality schema* (Lichtenstein et al., 1993). Individuals who buy luxury products, which are expensive, to be reassured about the quality or individuals who, within the luxury domain, go for more expensive products to be reassured even further about the quality they are purchasing, are expected to pay careful attention to the price attribute. They

will then infer quality from it. If the hypothesized connotations of low quality for odd prices and of high quality for even prices exist, they should be even stronger for individuals who are high in price-quality schema.

- Hp_{10a}: Odd prices will have a stronger negative impact on perceived product quality for individuals who heavily rely on price as an indicator of product quality than for individuals who do not rely on price as a quality indicator.
- Hp_{10b}: Even prices will have a stronger positive impact on perceived product quality for individuals who heavily rely on price as an indicator of product quality than for individuals who do not rely on price as a quality indicator.

Prestige sensitivity. Lichtenstein et al. (1993) define prestige sensitivity as the ensemble of favorable perceptions of the price cue based on feelings of prominence and status that higher prices signal to other people about the purchaser (Lichtenstein et al., 1993). This applies perfectly well to all those consumers who buy luxury because it is expensive and because this allows them to impress others and signal status, such as Parvenus (Han et al., 2010) and Veblenian and Snob consumers (Vigneron & Johnson, 1999). If the same odd and even prices' prestige connotations subsist also when they are applied to luxury goods, i.e., if an odd price is perceived as less prestigious (low-prestige image) and an even price as more prestigious (high-prestige image) than other prices, individuals who heavily rely on price as an indicator of prestige (i.e., individuals high in prestige sensitivity) will perceive these connotations to be even stronger. Individuals who buy luxury, which is expensive, because of the prestige it confers are individuals high in prestige sensitivity. An individual high in prestige sensitivity will see an odd-priced product as less prestigious than an individual low in prestige sensitivity would, and at the same time they will see an even-priced product as more prestigious than an individual low in prestige sensitivity would.

- Hp_{11a}: Odd prices will have a stronger negative impact on perceived product prestige for individuals high in prestige sensitivity than for individuals low in prestige sensitivity.
- Hp_{11b}: Even prices will have a stronger positive impact on perceived product prestige for individuals high in prestige sensitivity than for individuals low in prestige sensitivity.

Price consciousness. Price consciousness is a known moderator of the negative effect of odd prices on perceived expensiveness: Chang & Chen (2014) find that the more a consumer is price conscious, the weaker the underestimation effect will be because highly price conscious people are more likely to pay attention to all digits of a price and are therefore less likely to misconceive a 9-ending price, as also confirmed by Macé (2012). Also, because price conscious consumers focus on paying low prices for products they acquire (Lichtenstein et al., 1993), they are less likely to perceive a low-price image for an odd price, or a high price image for an even price, because they can assess regardless of the price ending if a product is expensive or not compared to others and whether it has been increased recently (an individual cannot be price conscious without knowing prices; Zeithaml, 1984). On the contrary, individuals who are not price conscious or even individuals who enjoy spending money (e.g., the Spendthrift) should pay less attention to prices, and might therefore be more easily convinced of the low-price image of an odd price or of the high price image of an even price.

- Hp_{12a}: Odd prices will have a negative impact on a product's price image (i.e., perceived expensiveness) for individuals low in price consciousness or for individuals who enjoy spending money, but not for individuals who are highly price conscious.
- Hp_{12b}: Even prices will have a positive impact on a product's price image (i.e., perceived expensiveness) for individuals low in price consciousness or for individuals who enjoy spending money, but not for individuals who are highly price conscious.

Need for uniqueness. Individuals who buy luxury products because of their uniqueness can be more prone to use price as an indicator of uniqueness, and they will increase their demand for a given product when its price also increases (Amaldoss & Jain, 2005). Given that odd prices are supposedly perceived as cheaper and even prices as more expensive and given the hypothesized negative impact of odd pricing on uniqueness image, which I justify with the FCMG connotation of this pricing technique, I hypothesize that individuals who are high in need for uniqueness (i.e., individual-level trait that causes desire to possess unique products, which provides differentiation from other people; Cheema & Kaikati, 2010) will perceive a lower product uniqueness when exposed to an odd price than individuals who are low in need for uniqueness or high in need for conformity, both because it is perceived as cheaper and because of its FCMG connotation. Similarly, an even price should have a stronger positive effect on perceived product uniqueness for individuals high in need for uniqueness.

- Hp_{13a}: Odd prices will have a stronger negative impact on a product's perceived uniqueness for individuals high in need for uniqueness than for individuals who are low in need for uniqueness or high in need for conformity.
- Hp_{13b}: Even prices will have a stronger positive impact on perceived product uniqueness for individuals high in need for uniqueness than for individuals low in need for uniqueness.

Please refer to Figure 19 and Figure 20 to visualize the complete conceptual frameworks.

Figure 19 - Conceptual framework for an odd price with proposed moderators

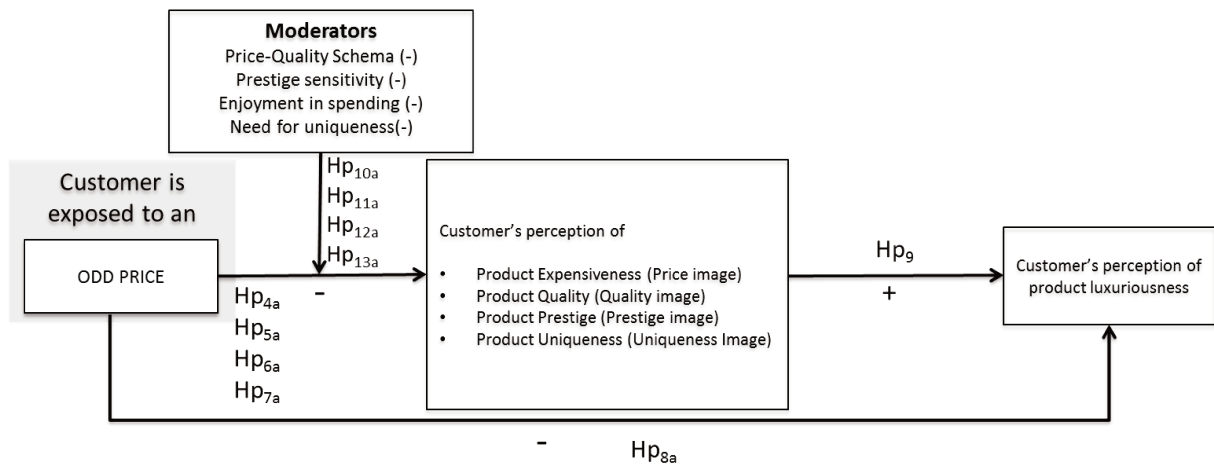
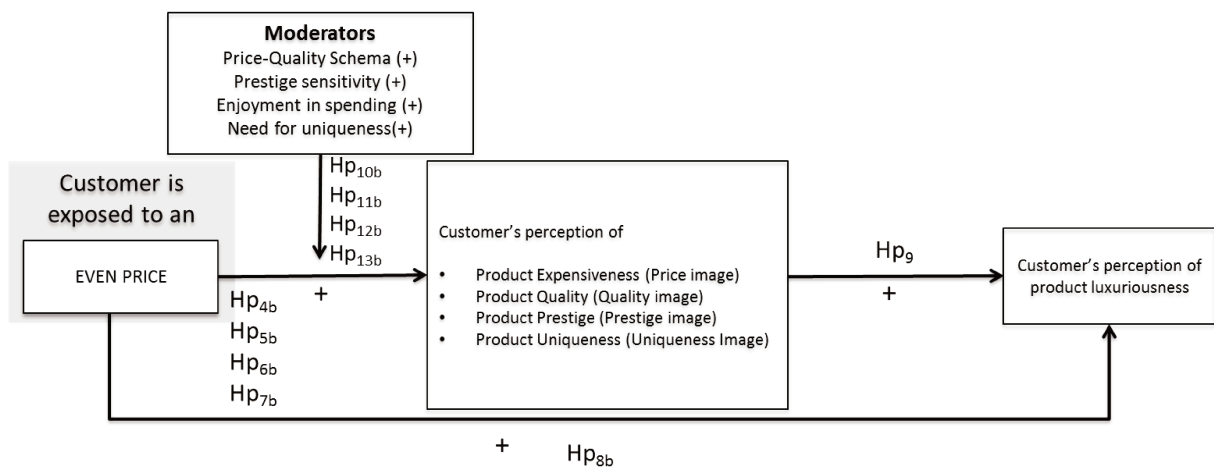


Figure 20 - Conceptual framework for an even price with proposed moderators



5.3. Customers' perceptions – Studies 3 and 4

In this section I will explain the methodology that was adopted to test the hypotheses presented in sections 5.1 and 5.2, i.e., to measure customers' perceptions of odd and even prices and to understand whether their personal traits and motivations to engage in luxury consumption can moderate the effect of odd and even pricing on their perceptions.

I conducted two studies, which both consisted in an experimentation accompanied by a questionnaire. Both studies included items to measure customers' traits and motivations to engage in luxury consumption, items to measure perceptions of different facets of luxury after exposure to odd and even prices stimuli, filter questions on luxury consumption habits and questions on demographics. For a detailed description of the two questionnaires and the respective experiments please refer to the following sections (5.4.1 and 5.4.4) or to Appendices 3.1 and 3.2, in which I provide the full-length studies. In this section, I will present the common aspects of the two studies, how I have operationalized the constructs and how I will analyze them.

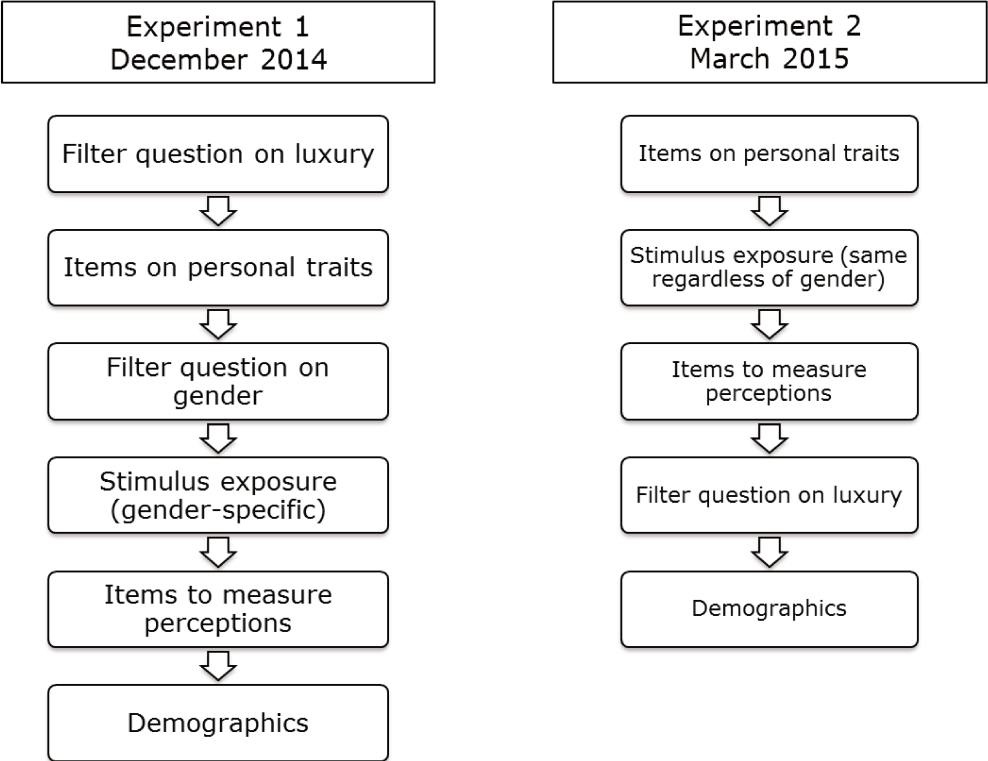
The diagram in Figure 21 on the next page shows the structure of the two studies.

While the first one starts with a filter question on luxury to exclude any respondent that declared not to have bought a luxury product over the previous year, in the second study all respondents could complete the questionnaire and the questions on whether they were luxury consumers or not were asked at the end of the study and used to profile respondents, more than to exclude some of them. As you can see from Figure 21, the rest of the studies were structured very similarly for Experiment 1 and Experiment 2. Although I improved the scales for Experiment 2 based on the results of Experiment 1, the questionnaires of the two studies were very similar, and they both measured Price-Quality Schema, Prestige Sensitivity, Price Consciousness/Enjoyment in spending money. The second experiment also included some items to measure need for uniqueness and perception of product uniqueness (uniqueness image).

Number of conditions. The two main differences between the two studies are the number of conditions and the type of stimulus. The first experiment only had two conditions: some participants were exposed to an even price (i.e., 1700) and others to an odd price (i.e., 1790). There are two main problems with operationalizing the independent variable like this: the first

is that there is no control group, so clearly all results will be symmetrical. The second and probably the most important one is that it is impossible to know whether any difference in perceptions between one condition and the other is due to the different price ending or to 1700 being 90 euros cheaper than 1790. Because of this, in the second experiment, I created four conditions instead of two, one with prices in -90, one with even prices rounded down to the nearest lower hundred, one with even prices rounded up to the nearest upper hundred and one with control prices. In this way, I was both able to compare my results to a baseline and to account for differences in price levels as well as in price endings. Moreover, given the newly found importance of other price endings (e.g., -50 and “other”), this will give us some insight as to how customers perceive them.

Figure 21 – Structure of the two experiments



Type of stimulus. In the first experiment, I asked the respondent’s gender and showed either a women handbag or a men briefcase accordingly. While this reduced the probability that one or the other gender would not be interested at all in the product shown in the picture, it also introduced further manipulation of the independent variable. Because of this, in the second experiment I showed the same stimuli to both men and women.

In the first experiment, very few hypotheses were confirmed, which led me to believe that it was because the stimulus (i.e., 1700 or 1790) was not prominent enough. Moreover, the women handbag and the men briefcase were both explicitly branded Louis Vuitton. When analyzing the results, I found that brand liking explained most of the variance in luxury perceptions, regardless of price endings.

To overcome these limitations, in the second experiment I showed six pictures per condition of unbranded women handbags with different prices so that the price ending stimulus would be repeated and hopefully perceived by the respondent. I then asked respondents to rate their perceptions of luxury on average for the six products. Because the products were unbranded, variance in dependent variables cannot be affected by brand liking.

To test my hypotheses concerning perceptions of luxury and personal traits or motivations to engage in luxury consumption I used a list of items that were adapted from previous research. Please refer to Table 70.

Table 70 - List of constructs to measure personal traits (Consumer-related construct) and perceptions customers have of the product(s) (Product-related).

	Experiment 1		vs.	Experiment 2	
	Measured construct	Origin of scale		Measured construct	Origin of scale
Consumer-related	Price-Quality Schema	Adapted from Lichtenstein, Ridgway, Netemeyer (1993)		Price-Quality Schema	Adapted from Lichtenstein, Ridgway, Netemeyer (1993)
	Prestige sensitivity			Prestige sensitivity	
	Price consciousness	Adapted from Lichtenstein, Ridgway, Netemeyer (1993) and Wakefield & Inman (2003)		New Price Consciousness scale	Re-worked from previous scale
	Brand Liking	Rossiter(2002)		/	/
	/	/		Importance of product attributes	Adapted from Vigneron & Johnson (2004)
Product-related	Price image	Adapted from Schindler&Kibarian (1996,2001); Schindler (1991)		Price image	Adapted from Schindler&Kibarian (1996,2001); Schindler (1991)
	Quality image	Schindler&Kibarian (2001)		Perception of product attributes	Adapted from Vigneron & Johnson (2004)
	Prestige image			Brand luxuriousness	
	Brand luxuriousness	Autonomously generated item		Brand luxuriousness	Autonomously generated item

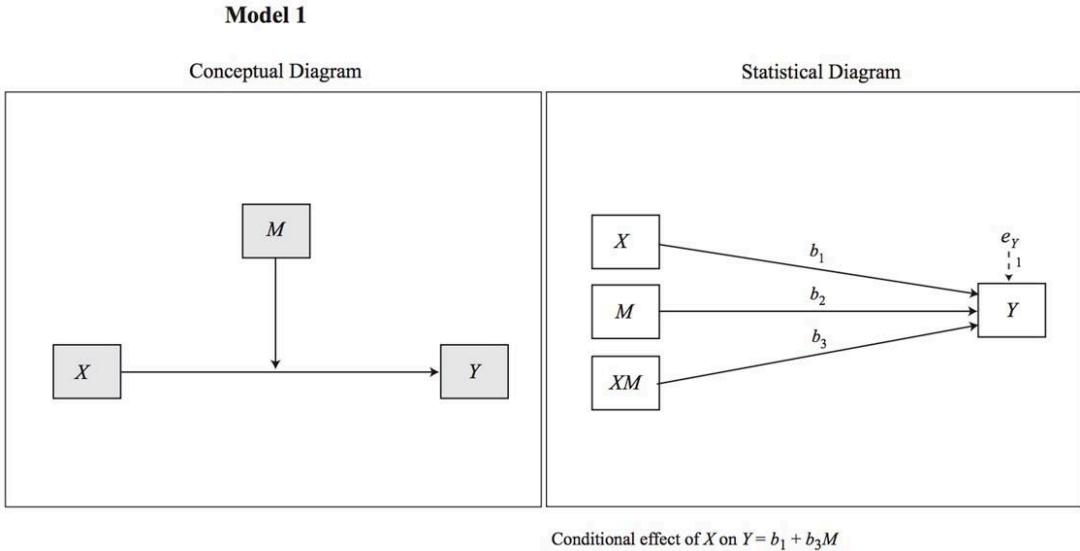
Link to conceptual framework. All consumer-related items were presented before the stimuli, while all product-related items were presented after the stimuli. In this sense, I consider all the items concerning Price-quality schema, Price consciousness, Prestige sensitivity, Brand liking (Opinion on LV) and Importance of product attributes (i.e., How important is it for the respondent that a luxury product is unique, of good quality, prestigious, etc.?) to be

independent variables and they measure the constructs that I proposed as moderators (Hp10 to Hp13). On the contrary, all the items that I included to measure Price image, Quality image, Prestige image, Uniqueness Image and Brand perceived luxuriousness are dependent variables and they should be impacted by exposure to the stimuli. Any difference in means from one condition to another in this second group of items is calculated to test hypotheses on main effects of odd and even prices (Hp4 to Hp8).

Types of analysis. All consumer- and product-related items were reduced to underlying dimensions through Exploratory Factor Analysis (EFA) in SPSS, Confirmatory Factor Analysis in SPSS AMOS with two tests to assess discriminant validity (Fornell-Larcker and Chi Square Test with paired constrained covariances). Once I obtained good model fits, I used the resulting factors as variables measuring the relative constructs and then tested my hypotheses with these new variables.

Hypothesis testing. All main effect hypotheses were tested through one-way ANOVAS, while all moderations and mediations were tested with the SPSS macro PROCESS by Hayes (2013), models 1 (Figure 22) and 4 respectively (Figure 23). To test more complex relationships between variables, such as that of moderated mediation, I used PROCESS' model 7 (Figure 24).

Figure 22 – Model 1 of the SPSS macro PROCESS by Hayes (2013); Conceptual and Statistical diagram of a direct effect of X on Y moderated by M.²⁷



²⁷ Model Templates for PROCESS for SPSS and SAS; © 2013-2015 Andrew F. Hayes and The Guilford Press

Figure 23 – Model 4 of the SPSS macro PROCESS by Hayes (2013); Conceptual and Statistical diagram of a direct effect of X on Y mediated by M.²⁷

Model 4

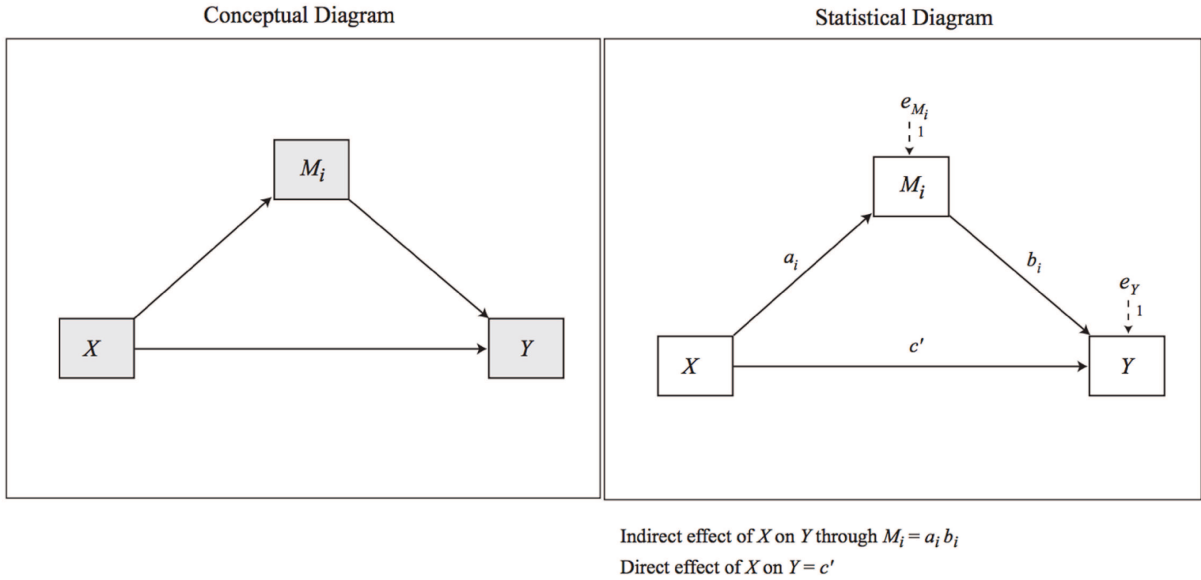
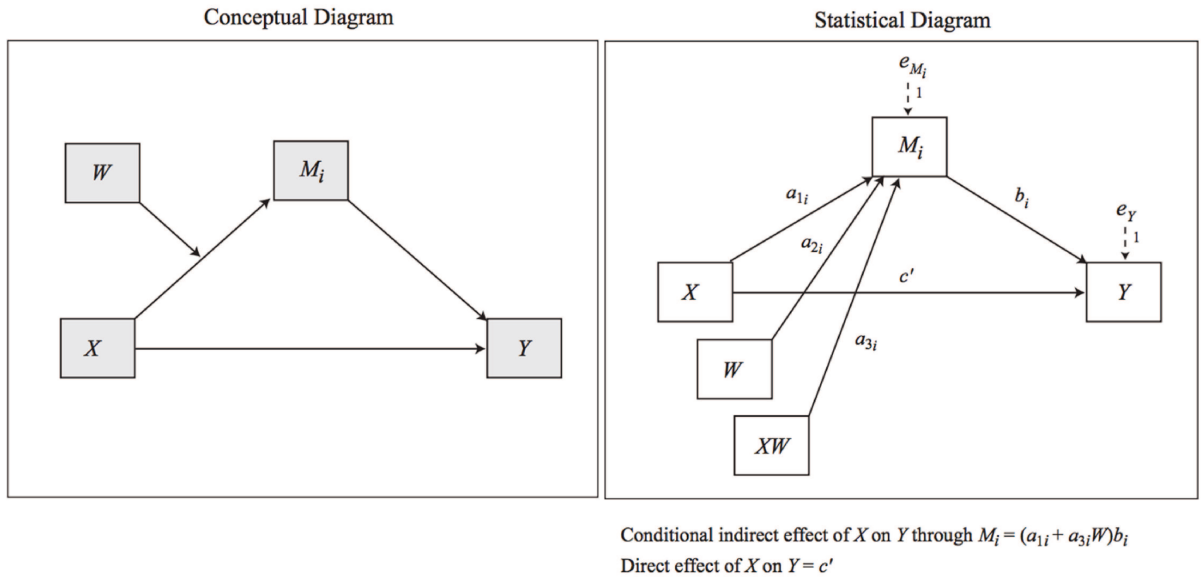


Figure 24 - Model 7 of the SPSS macro PROCESS by Hayes (2013); Conceptual and Statistical diagram of a direct effect of X on Y with a moderated mediation.²⁷

Model 7



5.4. Customers' perceptions – Detailed methodologies, Data analysis, Results

This section will be structured as follows: for each study, I will first present the methodology, then the results and the analysis. The second study was developed as an improvement of the first.

Both studies had a brief introductory paragraph, in which it was explained that the study was part of a research project carried out in the Marketing Department of ESCP Europe, that the answers would be treated anonymously to prevent social desirability issues and that the survey would take no longer than 10 minutes.

5.4.1. Study 3 – Detailed Methodology

This section describes in detail what the reader can also find in Appendix 3.1.

The first experiment was conducted in November 2014 with a two-condition between-subjects design. It was administered to a convenience sample recruited either through social media or via personal contacts' email addresses. As the survey started with a filter question that would exclude all respondents that had not bought a luxury product over the previous 12 months, I can be confident that, despite it being a convenience sample, it was in a way representative of the target population of the research, i.e., consumers of luxury goods.

Since the filter question at the beginning of the survey "Have you purchased at least 1 luxury item over the last year" could cause some uncertainty as to what was intended by "luxury", it was explained in the text of the question that the respondent should not worry about what "luxury" might mean, but that they should simply think about what "luxury" meant for them and their own personal conception of the word. The reason for this question was to exclude those respondents who did not consider themselves as luxury consumers and, due to this filter, many participants who started taking the survey were immediately redirected to the final page, as they were not part of the target population.

For those participants who answered "Yes" to the filter question, the following three items aimed at determining whether those respondents who declared to be consumers of luxury goods, could also be considered as such for the purpose of this research. Therefore, on the second page of the questionnaire, concerning specifically the *last* luxury item they had purchased, participants were asked to indicate

- The brand - among a list of suggested brands plus an “Other, please specify___” option, since, of course, the list of luxury brands could not be exhaustive;
- The product category (accessory, clothing, handbags/briefcase, etc. plus an “Other, please specify___” option);
- The approximate amount spent in Euros on the purchased item.

The answers to these three questions were used as a filter: all answers were collected for the rest of the questionnaire regardless of the brand, the product category and the amount spent, but some were excluded afterwards from the analysis. For example, let’s imagine that a participant answered “Yes” to the first question “Have you purchased at least 1 luxury item over the last year”: they would be able to carry on with the rest of the questionnaire. However, on the second page, they were not able to find the brand of the last “luxury” purchase they made and would therefore indicate in the “Other, please specify” blank space that the last luxury brand which they had bought was Nike, for a pair of shoes at 130 Euros. The answer of this respondent would be collected for the whole questionnaire, but would then be excluded from the analysis, because in my understanding of the concept of “luxury” Nike cannot be considered a luxury brand. At this point, I could assume that, since my conception of luxury is not equivalent to the conception of luxury of this one participant, although he or she considers himself or herself to be a consumer of luxury goods, I needed to exclude them from the analysis.

On the following page, participants were asked to rate a list of items concerning the personal traits of:

- Price-quality schema (PQS), the generalized belief across product categories that the level of the price cue is related positively to the quality level of the product;
- Prestige sensitivity (PS), the favorable perceptions of the price cue based on feelings of prominence and status that higher prices signal to other people about the purchaser;
- Price consciousness (PC), the degree to which the consumer focuses exclusively on paying low prices.

The three constructs were defined as indicated by Lichtenstein, Ridgway, & Netemeyer (1993).

In this first version of the survey-experiment, I tried to keep the scales referring to these three constructs as similar as possible to the original scales developed by the three authors, to test whether they could be suitable to measure consumers' personal traits and shopping habits in a luxury context. In particular, the items that I used to measure the price-quality schema and prestige sensitivity of participants were identical to those found in the Handbook of Marketing Scales (Bearden & Netemeyer, 1999), since they seemed to be suitable to a luxury context as well as others, while I clearly had to adapt the items to measure price consciousness, since in the original scale they mainly refer to grocery shopping (e.g., "I will grocery shop at more than one store to take advantage of low prices). The resulting items for price consciousness were therefore a selection and an adaptation of two scales of Lichtenstein, Ridgway, & Netemeyer (1993) and of Wakefield & Inman (2003), who referred to the conceptually equivalent construct as (*situational*) *price sensitivity*, as follows:

Please state to what extent you agree or disagree with the following items in reference to a luxury product you might consider buying today.

- Price Consciousness_1: I am willing to make an extra effort to find a lower price for this luxury product.
- Price Consciousness_2: I will change what I had planned to buy in order to take advantage of a lower price.
- Price Consciousness_3: I am sensitive to differences in prices of this luxury product.
- Price Consciousness_4: The money saved by finding lower prices is usually not worth the time and effort (reversed item).
- Price Consciousness_5: I would never shop at more than one store to find a lower price for this luxury product (reversed item).

All items in the survey, unless stated otherwise, had to be rated on a 7-point Likert-type scale ranging from "strongly disagree" to "strongly agree", as also indicated by the authors of the original scales.

Another personal trait that I originally wanted to measure, although it does not appear in my final conceptual framework, was consumer preference for brand prominence (PBP). Brand prominence is defined as "the extent to which a product has visible markings that help ensure observers recognize the brand" by Han, Nunes, & Drèze (2010). The three authors showed in their work that this is a relevant dimension when classifying consumers of luxury goods, but

did not develop a scale to measure this trait: instead, they asked the participants of their survey to choose repeatedly between “loud” and “quiet” handbags. There might be other factors impacting the choice of a quiet bag over a loud bag: for example, a respondent might not like a brand in particular and might therefore choose a quiet version of that brand’s handbag, despite being, in general, more prone to choosing a much louder handbag of a brand that they do like. I therefore included in my survey three items to measure consumers’ preference for brand prominence/loudness:

- Preference for Brand Prominence_1: I prefer luxury products on which you can easily see and recognize the brand, thanks to its logo or other symbols.
- Preference for Brand Prominence_2: I do not care if others do not recognize that I am carrying a luxury product (reversed item).
- Preference for Brand Prominence_3: There is no point in buying a luxury product if other people do not recognize its brand.

I did not follow the C-OAR-SE procedure for scale development (Rossiter, 2002) for this scale, as I considered this construct to be straightforward enough to measure with few items generated autonomously and later tested for reliability.

Because in this first version of the survey the stimuli shown were a handbag for women respondents or a briefcase for men respondents by the luxury brand Louis Vuitton, it was felt that it was necessary to control for liking of the brand, as any perception of luxury caused by different price endings would, of course, be moderated positively by overall positive attitude towards the brand and vice versa. The next question therefore asked participants to state their opinion of the brand Louis Vuitton. I used the scale developed by Rossiter (2002) that distinguishes brand liking from brand loving (Opinion about Louis Vuitton), added a “I do not know the brand” option and removed the headings of each item, as they all are very straightforward.

The resulting question was as follows:


Please tick your overall opinion on Louis Vuitton. Please read all of the 6 alternatives first.

- I do not know the brand
- I would say that I hate this brand
- I feel that I dislike this brand
- I feel neutral about this brand – no strong feelings either way
- I would not say that I love this brand, but I would say that I like it
- I would say that I feel deep affection, like love, for this brand.

There was subsequently another filter question on the participant’s gender to determine what stimulus they should be exposed to: a handbag for a female respondent and a briefcase for male respondent. All answers collected up to this point of the survey were therefore independent of the condition of the experiment the participant had randomly been assigned to, and after this question participants moved on to the stimulus of the experiment.

On the next page, participants were shown a product with a brief description and a price tag, before being asked a list of questions regarding different facets of product image, such as price, quality and prestige image, as well as the perceived accuracy with which the price had been determined.

Table 71 - Variable manipulation for Women (Alma) and Men (Vassili)

	Female respondent ALMA - €17XX	Male respondent VASSILI - €17XX
		
Group A Even price	Please have a look at this Alma handbag, by Louis Vuitton, Medium Size (36 x 28 x 17 cm), in blue Epi leather, priced at €1700	Please have a look at this Vassili briefcase, by Louis Vuitton, Medium Size (37 x 30 x 6 cm), in black Epi leather, priced at €1700
Group B Odd price	Please have a look at this Alma handbag, by Louis Vuitton, Medium Size (36 x 28 x 17 cm), in blue Epi leather, priced at €1790	Please have a look at this Vassili briefcase, by Louis Vuitton, Medium Size (37 x 30 x 6 cm), in black Epi leather, priced at €1790

The first three questions regarding the Price Image of the product were taken from Schindler & Kibarian (2001), who developed the items starting from pre-test interviews with consumers. A fourth item was added to test the “good deal” connotation of prices ending in -9, which is often suggested in the literature (Schindler & Kibarian, 1996; Stiving & Winer, 1997), as well as a fifth item to test whether, according to the participant, the price gave the impression to have been accurately calculated (Price Accuracy), as suggested by (Schindler, 1991).

- Price Image_1: Do you think you could find this particular item at a price lower than the price showed in the picture? (Reversed item)
- Price Image_2: Do you think that the product shown in the picture is on sale?
- Price Image_3: Stores sometimes increase prices. Do you think that the price shown in the picture is one that has been increased recently? (Reversed item)
- Price Image_4: Do you think buying the product would be a good deal?
- Price Accuracy: Do you feel that the price in the picture has been calculated accurately?

As three out of five price-image related items were taken from a previously developed scale, I used a 4-point Likert-type scale ranging from “Surely not” to “Surely yes” as indicated in the original article.

The next three items concerned perceived quality, prestige and classiness and had to be rated on a 7-point Likert-type scale ranging from “Very low” to “Very high”. Please note, that while Schindler & Kibarian (2001) relate the question on perceived classiness to the quality image of the item, classiness should be associated with prestige image, instead.

Finally, a question on perceived brand luxuriousness was asked in order to assess whether this had been influenced by the exposition to one price stimulus or the other.

For the following statement, please state to what extent you agree or disagree

- Louis Vuitton is a good example of luxury brand

Feedback from some respondents indicated that this question was an ambiguous item to rate due to the rightmost label of the 7-point scale “Yes, LV corresponds to my ideal of a luxury brand”, as someone might find that LV is a very luxurious brand, but it might not correspond

to their ideal of luxury, in the sense that they do not like it. Due to this ambiguity in the formulation of the item, I was not able to measure the intended construct.

To conclude the questionnaire, I asked a list of standard questions on demographics, such as Nationality, Age, Range of income and Highest level of education completed, which would allow me to complete the profile of the segments in the sample.

5.4.2. Study 3 – Data analysis and results

5.4.2.1. Sample description

162 participants started the survey, of which 125 (77%) said they had purchased a luxury item in the previous year. Of these 125 participants, 62 were exposed to the even price condition (Version A) and 63 to the odd price condition (Version B). It is not possible to determine a response rate, because the link to the survey was posted on social media and people voluntarily decided to participate and click on it, and it is impossible to determine how many people saw the link (i.e., the number of impressions). Three participants declared to have bought a luxury item, but cited brands and prices that clearly and unequivocally do not belong to a luxury universe, such as:

- Clothing by Rab (outdoor clothing company) for €80;
- A television by Samsung for €350;
- A pillow by Tempur for €150.

After removing these three participants and others who did not complete most of the sections of the questionnaire, I ended up with 47 responses for Group A (68% female) and 51 responses (69% female) for Group B.

The average age for Group A was 33 years old ($s=10.4$) and for Group B 30 years old ($s=8.2$); the two means are not significantly different, $F(1, 92)=2.028$; $p= .158$. The average amount spent on the last luxury item purchased for Group A was €745 ($s=838$) and €651 for Group B ($s=1199$); the two means are not significantly different, $F(1, 96)=0.201$; $p= .655$, although they show that participants in Group A have spent more on their last purchase. The two groups are also very similar in terms of other personal traits, which allows me to compare them, while not worrying about unsystematic variation bias, i.e., variation that is caused by

differences intrinsic to the individuals who took part in the experiment, rather than variation that might be explained by the manipulation and therefore the model.

The rest of this section is structured as follows: first I will run exploratory and confirmatory factor analyses, for personal traits of the respondents and items measuring product perceptions separately, through SPSS and AMOS SPSS to assess measurement quality, convergent and discriminant validity of the constructs and their items. Then I will reduce my items to principal factors through a factorial analysis and I will eventually test my hypothesis with the resulting factors. I will also run a floodlight analysis to test for moderation of the personal traits on the effect price endings on luxury perceptions.

5.4.2.2. Exploratory Factor Analysis - Based on Field (2013), chapter 17

5.4.2.2.1. EFA for Respondents' personal traits: Preliminary analysis

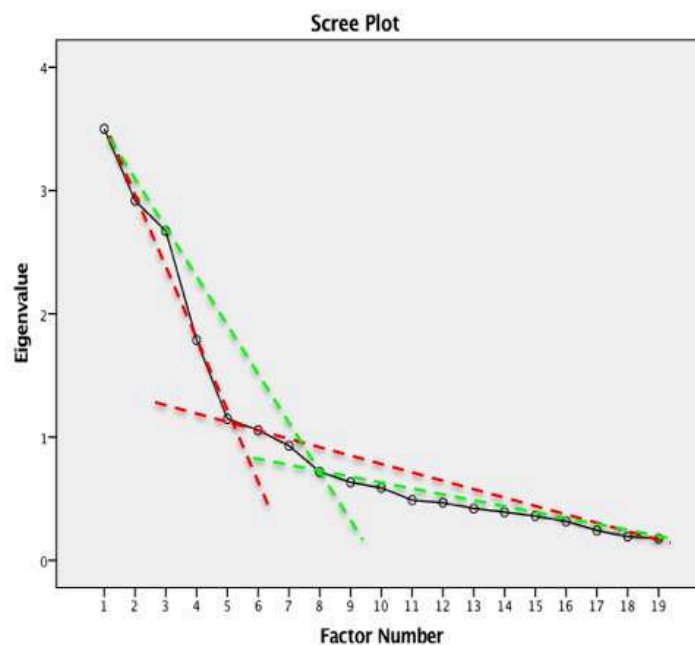
An Exploratory Factor Analysis (EFA) was conducted on the first 20 items, which correspond to Price-Quality Schema, Prestige Sensitivity, Price Consciousness and Preference for Brand Prominence constructs. I used a principal axis factoring method of extraction with a Varimax rotation, as suggested by Field (2013). The determinant of the correlation matrix is 0: as there are no correlation coefficients $>0,8$ there should not be any issues of multicollinearity or singularity. I therefore scan the anti-image correlation matrix visually to identify any item that might have an individual Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) that is as low as or lower than 0,5. Item Prestige Sensitivity_1 (People notice when you buy the most expensive brand of a product) has a KMO of 0,520, which is the lowest among the 20 items, so I exclude it from the factorial analysis to improve the determinant of the correlation matrix. As I exclude Item Prestige Sensitivity_1 and re-run the factorial analysis, the determinant is equal to 0,001, which is well above the suggested threshold of 0,0001.

The overall KMO 0,666 is between mediocre and middling according to Hutcheson & Sofroniou (1999), but acceptable according to Kaiser (1974), who suggests accepting values greater than 0,5. Barlett's test is significant, which tells us that the correlation matrix is significantly different from an identity matrix and a factor analysis is therefore possible. Individual KMOs for all items are now well above 0,5, the lowest being 0,557 for item Preference for Brand Prominence_3 (There is no point in buying a luxury product if other people do not recognize its brand).

5.4.2.2.2. *EFA for Respondents' personal traits: Factor extraction and rotation*

SPSS extracts 6 factors with eigenvalues greater than 1 (Kaiser's criterion), which explain 55% of the variance. However, this criterion is appropriate when there are less than 30 variables (which is the case, as there are only 19 items retained) and communalities after extraction greater than 0,7 (Field, 2014). In this case, the average communality after extraction is $10,471/19= 0,55$, therefore Kaiser criterion is not adequate. By looking at the scree plot, shown in Figure 25 below, it seems more appropriate to either extract 4 or 7 factors, since the inflexion points of the curve are at 5 and 8 factors respectively. Since the 20 items were intended to measure 4 constructs, I will extract 4 factors (46,9% of total variance explained).

Figure 25 - Scree plot of the EFA



In the reproduced correlation matrix, there are 29% of the unique residuals (49 of 171) with absolute values $> 0,05$, which is still far from the rule of thumb that suggests that a maximum of 50% unique residuals with absolute values $>0,05$ should be accepted (Field, 2014). The model therefore has an acceptable fit.

All items load onto the intended construct, except Prestige Sensitivity_8 (“Even for a relatively inexpensive product, I think that buying a costly brand is impressive”) that loads onto Preference for Brand Prominence. Although there is no direct reference to brand

prominence in this item, it makes sense to include it within this construct, at least at an EFA stage, because it clearly refers to the desire to impress others, as one would do through the use of conspicuous or “loud” luxury goods.

Table 72 - Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 6 iterations. Showing factor loadings >0,4

Items	Factor			
	1	2	3	4
Price consciousness_1 I'm willing to make an extra effort to find a lower price for this luxury product.	0,923			
Price consciousness_3 I am sensitive to differences in prices of this luxury product.	0,711			
Price consciousness_5 I would never shop at more than one store to find a lower price for this luxury product.	0,683			
Price consciousness_4 The money saved by finding lower prices is usually not worth the time and effort.	0,55			
Price consciousness_2 I will change what I had planned to buy in order to take advantage of a lower price.	0,47			
Prestige Sensitivity_3 Buying the most expensive brand of a product makes me feel classy.		0,742		
Prestige Sensitivity_2 Buying a high price brand makes me feel good about myself.		0,741		
Prestige Sensitivity_4 I enjoy the prestige of buying a high priced product.		0,653		
Prestige Sensitivity_5 It says something to people when you buy the high priced version of a product.		0,597		
Prestige Sensitivity_6 Your friends will think you are cheap if you consistently buy the lowest priced version of a product.		0,456		
Prestige Sensitivity_7 I think others make judgments about me by the kinds of products and brands I buy.		0,426		
PQS_1 Generally speaking, the higher the price of the product, the higher the quality.			0,79	
PQS_3 The price of a product is a good indicator of its quality.			0,703	
PQS_4 You always have to pay a bit more for the best.			0,694	
PQS_2 The old saying “You get what you pay for” is generally true.			0,62	
Preference for Brand Prominence_3 There is no point in buying a luxury product if other people do not recognize its brand.				0,822
Preference for Brand Prominence_1 I prefer luxury products on which you can easily see and recognize the brand (thanks to its logo or other symbols).				0,62
Preference for Brand Prominence_2 I do not care if others do not recognize that I am carrying a luxury product.				0,565
Prestige Sensitivity_8 Even for a relatively inexpensive product, I think that buying a costly brand is impressive.				0,411

Table 72 shows the factor loadings after Varimax rotation; the items that cluster on the same factor suggest that Factor 1 represents Price Consciousness, Factor 2 represents Prestige Sensitivity, Factor 3 represents Price-Quality Schema and Factor 4 a Preference for conspicuous products and/or brands.

5.4.2.2.3. EFA for Respondents' product perception: Preliminary analysis

A second EFA was conducted on other 8 items, which were included in the questionnaire to measure perceived price image and product quality and prestige. Again, a principal axis factoring analysis was conducted with Varimax rotation. The determinant of the correlation matrix is 0,181; the overall KMO is 0,688 (mediocre or middling) and Barlett's test is significant. Individual KMOs are all greater than 0,5. Price Image_3 had very low communalities after extraction (0,81) and did not load onto any factor. I therefore re-ran the factorial analysis after excluding this item. The new determinant is 0,192, new overall KMO 0,690, Barlett's test is still significant and all individual items' KMO are greater than 0,5.

5.4.2.2.4. EFA for Respondents' product perception: Factor extraction and rotation

SPSS extracts 2 factors with eigenvalues greater than 1, which converges with what is suggested by the scree plot, since the point of inflexion is at the third factor. These two factors explain only 38,5% of the total variance and are interpretable. In the reproduced correlation matrix, there are 29% of the unique residuals (6 of 21) with absolute values > 0,05, which is still far from the 50% allowed as a rule of thumb. The model therefore has an acceptable fit.

All items load onto a factor, although some factor loadings are very small (down to 0,3) and Price Image item 2 (Do you think the product in the picture is on sale) loads onto a factor that could be interpreted as the prestige dimension, rather than the factor representing Price Image. Please report to Table 73, to see the composition of the two factors.

Table 73 - Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 3 iterations. Showing factor loadings >0,3.

Rotated Factor Matrix	Factor	
	1	2
Quality Image_2 the prestige of the handbag?	0,887	
Quality Image_3 the classiness of the handbag?	0,681	
Quality Image_1 the quality of the handbag?	0,622	0,311
Price Image_2 Do you think that the product shown in the picture is on sale?	-0,393	
Price Image_4 Do you think buying the product would be a good deal?		-0,48
Price Image_1 Do you think you could find this particular item at a price lower than the price showed in the picture?		-0,471
Price Accuracy_1 Do you feel that the price in the picture has been calculated accurately?		0,308

The items that cluster on the same factor suggest that Factor 1 represents prestige and quality of the product: the more the product is perceived as being on sale, the less it is perceived as being prestigious and of good quality. Factor 2 represents the price image of the product: the higher the perceived price image of the product (please note that the scale for item Price Image_4 has been reversed for the analysis), the less the respondent perceived that the price was calculated accurately, which is a reasonable interpretation. The fact that factor loadings are so low for items measuring Price Image and that some of them are greater than 0, while other are negative, could be explained by Price Image being a formative construct, rather than a reflective one. One simple rule of thumb to identify formative constructs is to check whether items are interchangeable or not (Lowry & Gaskin, 2014). In the case of the items that I included in the questionnaire for Price Image, certainly they are not interchangeable. From a conceptual point of view, it also makes sense to say that the price image is the result of whether a product is perceived as being on sale, a good deal, whether its price has been calculated accurately, etc., rather than the other way around. Hamilton & Chernev (2013) also explain how price image is *formed* and how it incorporates non-price cues, such as store decor and location and the retailer's reputation among other consumers.

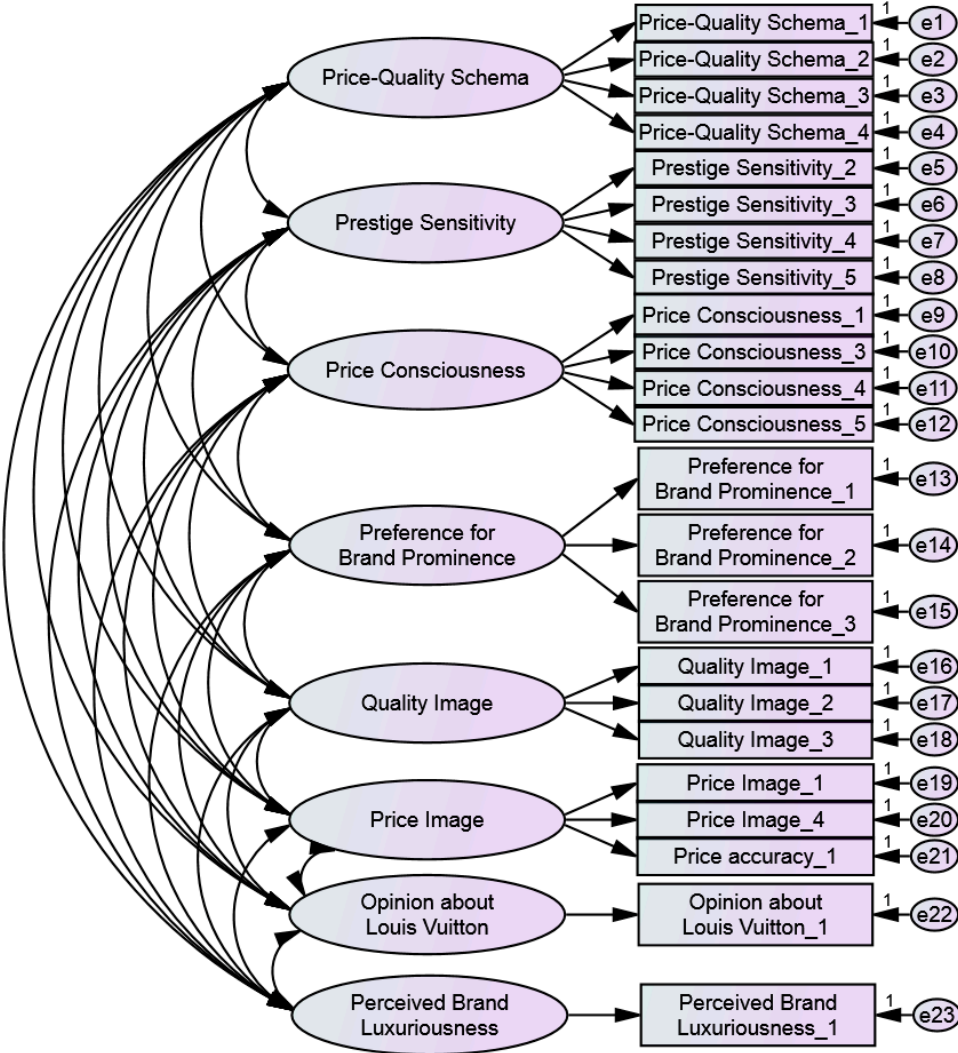
The next step is to run a Confirmatory Factor Analysis (CFA) on SPSS AMOS to determine the overall model fit, validate convergent validity and assess discriminant validity. I will now put all the constructs together in the same CFA, those measuring personal traits, product perceptions, as well as other two single item scale to measure the respondent's opinion about Louis Vuitton and perceived brand luxuriousness, to make sure each factor is measuring constructs that are conceptually different from one another. The starting model I test in the CFA is a model where I propose all factors and corresponding items that I have identified in the EFA's. Because of the formative nature of the Price Image construct and because of the incapability of the software AMOS to deal with such constructs, I will include Price Image as a reflective construct, although I am clearly not expecting high loadings for its observed variables.

5.4.2.3. Confirmatory Factor Analysis

Most constructs in the questionnaire are reflective or treated as such (e.g., Price Image). As for Opinion about Louis Vuitton (before the manipulation) and Louis Vuitton's perceived brand luxuriousness (after the manipulation), I included them as observed variables, as they were single-item scales. In the CFA that I ran in AMOS to assess the measurement model, I

therefore linked each latent variable to the respective items identified through the EFA thanks to arrows going from the latent variable (oval shaped) to the individual items or observed variables (square shaped). I constrained the variance of each latent variable to 1, removed constraints from factor loadings and added a residual error term to each observed variable (except for the two single-item scales: opinion about Louis Vuitton and perceived brand luxuriousness for LV). I then ran the model: as the initial unconstrained model did not have a good fit, I had to exclude from the analysis some items that had low factor loadings, to end up with the following path diagram, as shown in Figure 26.

Figure 26 - Path diagram of measurement model for the first questionnaire: independent variables, dependent variables, moderators and mediators are shown in the diagram to assess model fit and discriminant validity.



The Comparative Fit Index (CFI) is 0,949, which indicates a very good fit according to Hu & Bentler (1999). Tucker Lewis Index (TLI) is 0,930; Root Mean Square Error of Approximation (RMSEA) is 0,040, therefore correctly less than the commonly agreed upon maximum threshold of 0,05, which also indicates good fit. Also, the value of p-close is far from significance (p-close = 0,760), which means that the model is close-fitting.

The results for the tests of construct reliability in Table 74 are indicative of good measurement and of convergent validity for 5 out of 6 constructs. Except for Price Image, which shows extremely low alpha values, the other constructs show good scale reliability ($\alpha > 0,7$). As explained before, low reliability for the Price Image construct can be expected and explained by the fact that it is a formative construct, rather than a reflective one. Including it as a reflective one in the CFA, allowed me, nonetheless, to have an overall good model fit. However, in the rest of my analysis I will treat the three Price Image items as individual scales, rather than using a composite scale or factor, given its low reliability.

Table 74 - Measurement model: Convergent validity and Model fit indicators

Chi square	CFI	RMSEA	P-close	RMSEA			
235,7	0,95	0,04	0,76				
Construct	Item	Factor Loading	Sig.	Item Reliability	Coeff. Alpha	Factor Reliability	AVE
Preference for Brand Prominence	Preference for Brand Prominence_1	0,712	0,000	0,51	0,72	0,73	0,48
	Preference for Brand Prominence_2	0,568	0,000	0,32			
	Preference for Brand Prominence_3	0,79	0,000	0,62			
Price Consciousness	Price Consciousness_1	0,885	0,000	0,78	0,81	0,82	0,54
	Price Consciousness_3	0,716	0,000	0,51			
	Price Consciousness_4	0,581	0,000	0,34			
	Price Consciousness_5	0,724	0,000	0,52			
Price Image	Price Accuracy_1	-0,522	0,000	0,27	/	0,03	0,20
	Price Image_1	0,358	0,000	0,13			
	Price Image_4	0,441	0,000	0,19			
Price-Quality Schema	Price-Quality Schema_1	0,783	0,000	0,61	0,81	0,81	0,52
	Price-Quality Schema_2	0,63	0,000	0,4			
	Price-Quality Schema_3	0,762	0,000	0,58			
	Price-Quality Schema_4	0,69	0,000	0,47			
Prestige Sensitivity	Prestige Sensitivity_2	0,89	0,000	0,79	0,8	0,81	0,53
	Prestige Sensitivity_3	0,78	0,000	0,61			
	Prestige Sensitivity_4	0,666	0,000	0,44			
	Prestige Sensitivity_5	0,519	0,000	0,27			
Quality Image	Quality Image_1	0,675	0,000	0,46	0,81	0,83	0,62
	Quality Image_2	0,969	0,000	0,94			
	Quality Image_3	0,692	0,000	0,48			
Perceived brand luxuriousness	Perceived brand luxuriousness	1					
Opinion about Louis Vuitton	Opinion about Louis VuittonP	1					

Item reliability is predominantly above the required threshold of 0,4 (Bagozzi & Baumgartner, 1994) and even mostly above 0,5: this ensures that each item shares an important part of variance with its latent variable. Factor loadings are all highly significant ($p < .01$), which provides further support for convergent validity (Bagozzi, Yi, & Phillips, 1991). Lastly and most importantly factor reliability always exceeds 0,7, except for Price

Image. Average variance extracted (AVE) as defined by Fornell & Larcker (1981) values should always exceed 0,5: this criterion is always met except for Preference for Brand Prominence, for which AVE is, however, very close to 0,5.

I assessed discriminant validity in two ways: firstly, by looking at Fornell-Larcker's criterion, according to which each reflective construct's AVE should be greater than the square of the correlations with all remaining constructs in the model. When assessing the Fornell-Larcker criterion in a model that includes a formative construct (I am treating Opinion about Louis Vuitton and Perceived Brand Luxuriousness as such, since I included them as observed variables), one needs to compare the reflective construct's AVE value with the square of all latent variables' correlations, including those of formative constructs.

Table 75 - Fornell- Larcker criterion to assess discriminant validity

	Perceived brand luxuriousness	Price Image	Quality Image	Preference for Brand Prominence	Price Consciousness	Prestige Sensitivity	Price-Quality Schema	Opinion about Louis Vuitton	MAX
Perceived brand luxuriousness	Formative								Formative
Price Image	0,025	Formative							Formative
Quality Image	0,081	0,289	0,624						0,624
Preference for Brand Prominence	0,021	0,002	0,094	0,485					0,485
Price Consciousness	0,003	0,413	0	0,001	0,539				0,539
Prestige Sensitivity	0	0,013	0,008	0,038	0,004	0,527			0,527
Price-Quality Schema	0,022	0,001	0,004	0,003	0,011	0,06	0,516		0,516
Opinion about Louis Vuitton	0,102	0,001	0,172	0,023	0,009	0	0	Formative	Formative
MAX	FORM.	FORM.	0,624	0,485	0,539	0,527	0,516	Formative	

In order to confirm results of the Fornell-Larcker test (Table 75) and to assess discriminant validity also for formative constructs, I conducted a chi-square difference test for each pair of constructs in the model (Bagozzi et al., 1991).

Table 76 shows that the fit of the unconstrained model (please refer to Figure 26), in which there are no constraints on the covariances between latent variables, is significantly better than any model where a covariance between any two of the latent variables is constrained to 1 ($\Delta\chi^2$ is significant $p < .01$). Chi-square statistics for the unconstrained model is 235,7. Please find chi-square statistics for each constrained model in the Table 76 below highlighted in yellow, while differences between each constrained model chi-square statistics and the unconstrained model one highlighted in green.

Table 76 - In yellow: chi-square statistics for each constrained model; in green: differences between each constrained model's chi-square statistics and the unconstrained model's one.

	Price-Quality Schema	Prestige Sensitivity	Price Consciousness	Preference for Brand Prominence	Quality Image	Price Image	Opinion about Louis Vuitton	Perceived brand luxuriousness
Price-Quality Schema		109,8	126,4	54,2	111,2	7,3	113,6	115,2
Prestige Sensitivity	345,5		128,1	55,7	110,6	7,2	128,6	128,5
Price Consciousness	362,1	363,8		55,6	110,9	3,4	126,3	126,6
Preference for Brand Prominence	289,9	291,4	291,3		54	7,3	53,6	54,7
Quality Image	346,9	346,3	346,6	289,7		4,8	97,1	100,5
Price Image	243	242,9	239,1	243	240,5		7,1	7,2
Opinion about Louis Vuitton	349,3	364,3	362	289,3	332,8	242,8		18,8
Perceived brand luxuriousness	350,9	364,2	362,3	290,4	336,2	242,9	254,487	

Next, I will reduce all formative constructs to factors through a principal factor analysis to test hypotheses with reduced composite dimensions.

5.4.2.4. Hypothesis testing

To test my hypotheses, I first conducted simple one-way ANOVAs between the two groups, to test whether there is any significant difference in mean that might be explained by the different price ending stimulus for the following dependent variables: all Price Image items, all Quality Image items and its factor and the perceived luxuriousness of Louis Vuitton after exposure to the stimulus. Of the 11 one-way ANOVAs conducted, only the one testing the difference in mean for the average of two price image items (Price Image_1 and Price Image 3) was significant ($p < .05$): individuals exposed to the even price condition, were more likely to believe that 1700 euros was more likely to be the lowest price available in the market place and that this even price was less likely to have been recently increased. This result is interesting, since previous literature points out that these are connotations more typical of an odd price; however, and this is one of the main limitations of this study, we cannot determine whether this result is due to the price ending or to poor study design in that 1700 is 90 euros cheaper than the price used in the odd-ending condition, and it is therefore normal for it to be perceived as cheaper.

No other ANOVA shows a significant difference between the means of the two conditions, there is therefore no other significant main effect of the manipulated variable on dependent variables. Hypotheses 4_a and 4_b are disconfirmed (i.e. the even price is perceived as cheaper than the odd price) and there are no significant results for all other hypotheses from 5 to 8.

Please notice that Price image scales for items 2 and 4 were reversed for the analysis so that higher values for Price Image_1, Price Image_2, Price Image_3 and Price Image_4 now all go in the same direction and high values for the four items now mean that the product is

perceived as one whose price has recently been increased, not on sale, not a good deal, likely to be found at a cheaper price elsewhere, etc. (i.e., high values always correspond to an expensive price image).

Based on my hypotheses and these first results I will test for moderation of personal traits, which are likely to moderate the relationship between the price ending manipulation and Price Image items and Quality Image factor. I will also test for mediation, as I expect Price Image, Quality Image and Prestige image to mediate the relationship between price endings and perceived luxuriousness.

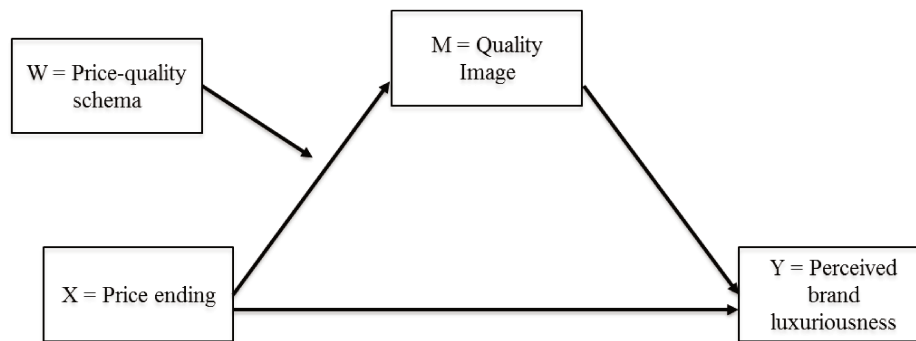
Hypothesis 10_a argued that individuals with higher levels of Price-Quality Schema, i.e., individuals who heavily rely on price as an indicator of quality, would perceive an even more damaged and inferior quality of the product when exposed to an odd ending price compared to individuals low in Price-Quality Schema (i.e., individuals who substantially do not care about price as a quality indicator), e.g., 1790, because of the lower quality connotations suggested by the literature. Similarly, hypothesis 10_b argued that individuals that are high in Price-Quality Schema would perceive an even higher quality, when exposed to an even price. Also, hypothesis 8 argued that because quality image is one of the many facets of luxury (Vigneron & Johnson, 2004), quality image should mediate the relationship between Price ending and the perceived overall luxuriousness of the brand. I used the SPSS macro Process by Hayes (2013), which allows me through its template number 7 (previously reported in Figure 24) to test both hypotheses simultaneously. Sample size for this test was 97.

I first tested the two hypotheses with the composite factor for Quality Image, but, as the results are hardly interpretable, I re-ran the test with the single item of perceived quality (Quality Image Item_1) because it is the only one that strictly refers to quality, while the other two items rather refer to prestige and classiness. The results of this second analysis are interpretable and confirm the hypotheses.

Please refer to Figure 27, where:

- X = dummy variable for Odd ending (=1) or Even ending (=0)
- W = Price quality schema (Moderator)
- M = Quality image (Mediator)
- Y = Perceived luxuriousness

Figure 27 – Model 7 as reported in Figure 24, adapted to the study’s variables.



Please notice that because I coded the dummy variable relative to the odd price, i.e., the dummy is equal to 1 if the independent variable was the odd price, 0 if it was even, I am expecting a negative interaction of Price-quality schema with Perceived quality. If I had coded the dummy so that Even price = 1 and Odd price = 0, then I would expect the same interaction to be positive. In other words, high levels of Price-quality schema are expected to amplify whatever connotation odd and even prices already have.

The Process macro runs different regression analyses to test for moderation and mediation. I will present them in the same order as in the Process output. Please refer to Appendix 3.1.1. for the complete output of Model 7.

When considering Perceived Quality as outcome, the interaction of X and W is highly significant ($p < .01$) and negative, which means that the extent to which the individual relies on price as an indicator of quality is indeed a moderator for the relationship between the price ending stimulus and the quality image perceived. More precisely, the stronger the Price-quality schema, the lower the quality perceived when exposed to an odd price. Moreover, since there were only two conditions in the experiment, testing the hypothesis for an even price, gives symmetrical results to those obtained when testing the hypothesis for an odd price: therefore, the higher the Price-quality schema, the higher the quality perceived when exposed to an even price. The interaction is only significant for higher values of Price-quality schema, as shown in the details of the moderated mediation below in Table 77. This is reasonable, as we would expect people low in Price-quality schema not to be influenced by whatever price ending connotation on quality.

Table 77 - Conditional indirect effect(s) of an Odd price on Perceived Luxury of Louis Vuitton through Perceived Quality at low, medium and high values of Price-Quality schema (at the mean and plus/minus one SD from mean).

	Price quality schema level	Effect	Boot SE	BootLLCI	BootULCI
Effect of Quality Image At low levels of Price Quality Schema	-0,8851	0,1383	0,1472	-0,0508	0,5628
Effect of Quality Image At medium levels of Price Quality Schema	0,0135	-0,0942	0,0845	-0,3316	0,0189
Effect of Quality Image At high levels of Price Quality Schema	0,9121	-0,3267	0,1461	-0,6684	-0,0891

When considering Perceived Luxury as an outcome in the model, Perceived Quality is a significant positive predictor ($p < .05$). The direct effect of X on Y is not significant, but according to Zhao, Lynch, & Chen (2010) there is no need for this relationship to be: the only criterion that must be met is that the indirect effect of X on Y through M ($a \times b$) is significant, which is the case here: in particular, the analysis of moderated mediation (bootstrapped 10k times) reported above in Table 78 shows that the indirect effect of X on Y (i.e., the indirect effect of the price ending on perceived overall luxury through perceived quality) is significant at high values of the moderator Price-quality schema, but not for low and medium values. This indirect effect $a \times b$ is negative, because of the negative effect of an odd price on perceived quality at high levels of Price-quality schema and because of a positive main effect of perceived quality on perceived luxuriousness ($p < .05$).

5.4.2.4.1. Cluster analysis

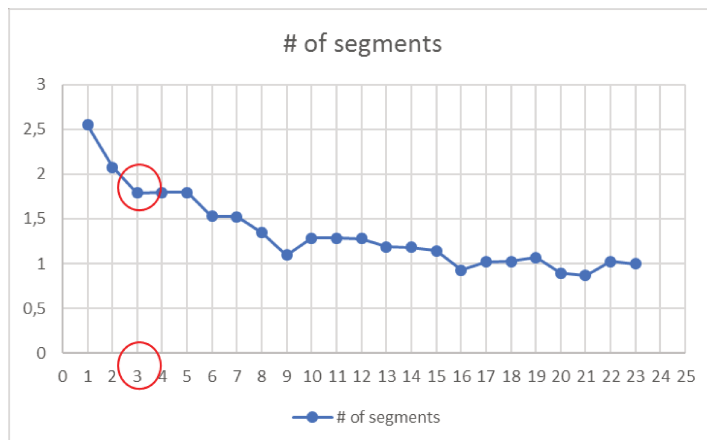
Price-quality schema is the only proposed moderator that has a significant interaction with the type of price ending the respondent was exposed to. Hypotheses concerning other moderators were not confirmed.

Several personality traits co-exist in each individual, e.g., a customer can rely on price as both an indicator of quality and as an indicator of prestige meaning that she is both high in price-quality schema and in prestige sensitivity. It seems therefore reasonable to look at different combinations of personality traits that would allow us to identify clusters of respondents and then see whether odd and even prices influence price, quality, prestige images and overall perceived luxuriousness differently according to the profile of the respondent.

The next step of the analysis was therefore to consider proposed moderators as cluster-defining variables.

I first ran a hierarchical cluster analysis in SPSS with the factors of Price-quality schema, Prestige sensitivity, Price consciousness and Preference for brand prominence. As we can see from Figure 28 below which reports the coefficient column of the agglomeration schedule that indicates the distance of each respondent from the cluster center (centroid linkage) on the y axis and the number of clusters on the x axis, when trying to classify respondents in only two clusters, each cluster becomes too heterogeneous because it would mean that we are forcing respondents that are very different from one another into the same group. Please refer to Figure 28²⁸, which shows that optimal number of cluster we should identify is three, as after three the average distance of each respondent from the cluster center becomes too high.

Figure 28 - On the y-axis the average distance from the cluster center. When identifying 3 clusters the average distance from the center is <2, but when forcing respondents into only 2 clusters, the average distance from the center becomes >2.



The graph in Figure 28 shows that there is an important increase in the average distance from the cluster center, when going from 3 to 2 clusters. There is no rule that tells us when the average distance from the cluster center is too high²⁹. A good approach is to try to run several quick cluster analyses asking SPSS to identify 2, 3 and 4 clusters and then identify the result that is best interpretable, also referring to the existing literature. I therefore ran three quick cluster analyses, and the one where I ask SPSS to identify and classify respondents in three clusters is the one that is best interpretable, also considering existing segmentations of luxury

²⁸ This graph, which is not generated by SPSS as part of the hierarchical cluster analysis output, was produced by taking the last 25 rows of the agglomeration schedule and reporting the average distance from the cluster center. The graph shows that if I have 23 clusters, then respondents within each cluster are very similar to one another. As the number of clusters decreases, we are “forcing” into each cluster respondents that become more and more different. We can go as far as having only 1 cluster, with all respondents together, regardless of their traits.

²⁹ Clearly, it is a matter of finding a compromise between a manageable number of clusters (23 would be way too many, only one would be pointless as we would not be making any distinction according to personality traits) and clusters that are interpretable. In this case, 3 is a good number, since generating both 2 and 4 cluster does not result in an interpretable output.

consumers. In Table 78 I report the final cluster centers and the number of respondents that were assigned to each group.

Table 78 – Final cluster centers and number of respondent in each cluster.

Final Cluster Centers				Number of respondents in each Cluster	
	Cluster			Cluster	
	1	2	3		
Price quality schema	-,08436	,71955	-,83293	1	53
Prestige sensitivity	-,13547	,32847	,11507	2	22
Price consciousness	,44820	-1,09486	-,04221	3	16
Preference for brand prominence	-,40253	-,07247	1,08586	Valid	91
				Missing	7

Since the variables used to identify the clusters are the factors that have previously been identified through the exploratory and confirmatory factor analysis, they are standardized and must therefore be interpreted as 0-centered variables. Please refer to Table 79 for some descriptive statistics of the four factors.

Table 79 – Descriptive statistics of the four factors used in the cluster analysis.

Descriptive Statistics					
Factors	N	Minimum	Maximum	Mean	Std. Deviation
Price quality schema	98	-2,30866	1,87675	,0000000	,90382853
Prestige sensitivity	94	-2,01560	1,79342	,0136903	,93045156
Price consciousness	96	-2,27476	1,41274	,0057506	,94035853
Preference for brand prominence	96	-,91450	2,60950	,0011703	,88193480
Valid N (listwise)	91				

We can see from Table 79 that values that are close to 0 mean that the average respondent belonging to that cluster is neither high nor low on that particular trait. For example, if we take the average respondent for Cluster 1, she has a score for price-quality schema equal to -0,08436, which is very close to zero. Therefore, we must interpret that respondents in Cluster 1 are neither high nor low in price-quality schema, meaning that they rely on price as an indicator of quality like the average respondent of the total sample. They do not ignore price as an indicator of quality, but they do not rely on it too much either. In the following table if the average respondent from each cluster scores high on a given trait it is indicated with one or more “+”, depending on how far they are from the mean, 0 if they are close to 0 and with one or more “-” if they are low on that trait. Please refer to Table 80, for a description of each cluster.

Table 80 - Cluster description

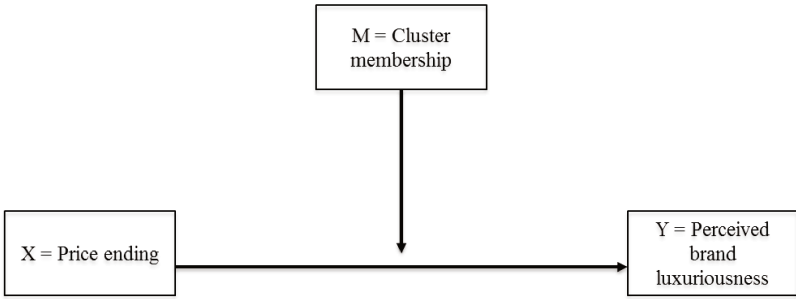
	Cluster 1	Cluster 2	Cluster 3
Number of respondents	53	22	16
Price quality schema	0	+++	---
Prestige sensitivity	-	++	+
Price consciousness	++	---	0
Preference for brand prominence	--	0	+++
Average spent on last luxury purchase	€ 710,85	€ 767,55	€ 563,19
Cluster description	<p>Respondents in Cluster 1 seem to be less interested in luxury than the other two groups: they moderately rely on price as an indicator of quality, do not rely on price as an indicator of prestige or status, are price conscious and do not like prominent luxury products. However, they do declare having bought a luxury item in the previous year and they do not spend significantly less than the other two groups on this last purchase. They might be Excursionists.</p>	<p>Respondents in Cluster 2 heavily rely on price as an indicator of quality and of prestige, they are not at all price conscious, they even seem to enjoy spending money and appreciate luxury items that are the right balance between discreet and prominent. They spent a bit more than the other two groups on their last luxury purchase. They are like consumers that in the literature have been named Patricians.</p>	<p>Respondents in Cluster 3 adore very prominent luxury items, they do not rely on price as an indicator of quality (possibly because they already rely on prominent brand logos) they like to show off and they are neither price conscious nor do they enjoy spending enormous amounts of money. They seem to spend a little less on luxury than the other two groups³⁰, they are like consumers that in the literature have been named Parvenus.</p>

Now that three clusters, or segments, of respondents have been identified and described, I can test whether belonging to one or the other group affects the effect odd and even prices have on price, quality, prestige images and luxury perception.

In general, running moderation, mediation and moderated mediation analyses with PROCESS using cluster membership instead of single personal traits such as Price-quality schema, Prestige sensitivity, etc., did not provide any significant results. The only exception is the one I report in Figure 29 below and in Appendix 3.1.2.

³⁰ This makes sense: they do not rely on price as an indicator of quality, so as long as the luxury item shows its logo prominently they are reassured about its quality. Han & al. (2010) have shown that very prominent luxury products are cheaper than discreet ones.

Figure 29 – Moderating role of cluster membership in the effect a price ending has on perceived brand luxuriousness.



The results of this moderation analysis are somewhat reassuring in that, when I control for brand liking (i.e., I control for the opinion the respondent has about Louis Vuitton before being exposed to the manipulation stimulus), I find that the odd price has a negative effect on perceived brand luxuriousness for both respondents that can be classified as “Patricians” (Cluster 2) and as “Parvenus” (Cluster 3). The odd price does not have such a negative effect for respondents classified as “Excursionists” (Cluster 1), which is the baseline of the dummy coding.

Table 81 - Results of moderation analysis with PROCESS for SPSS; dependent variable: Perceived brand luxuriousness; Odd price, Cluster 2 and Cluster 3 are all coded as dummy variables equal 1 when the respondent was exposed to an odd price, she belonged to Cluster 2 (Patrician) and to Cluster 3 (Parvenu) respectively. Results must be interpreted compared to the baseline: respondent from Cluster 1 (Excursionist exposed to an even price).

VARIABLES	(1) Perceived LV's luxuriousness
Odd price	0.183 (0.403)
Cluster 2 / Patricians	1.061** (0.596)
Cluster 3 / Parvenus	1.067** (0.615)
Odd price* Cluster 2	-1.274* (0.772)
Odd price* Cluster 3	-1.646** (0.845)
Constant	2.627*** (0.814)
Observations	91
R-squared	0.161
Covariate	Opinion about Louis Vuitton
Adj. R-squared	0.101
VIF	1.192

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

5.4.2.4.2. *Other interesting (and unexpected) results*

Although it is not possible to confirm other hypotheses, since no significant results were found, some interesting points are worth highlighting regarding this data sample:

- Using Model 1 of the macro Process by Hayes (2013)³¹, I found a significant interaction for price ending and Price-Quality Schema on perceived price accuracy ($p < .05$). The table resulting from the Johnson-Neyman technique shows that, for low levels of Price-Quality Schema, an odd price has a positive impact on the perceived accuracy with which the price has been set. For high levels of Price-Quality Schema the opposite is true: individuals who heavily rely on price as an indicator of quality, perceive an odd price as not accurate, i.e., as not resulting from accurate calculation, but rather from an approximate estimate.
- Price-Quality Schema also seems to moderate the effect of price endings on prestige image (the interaction is significant; $p < .01$), while Prestige Sensitivity does not. The moderating effect is similar to that on perceived quality, meaning that at high values of Price-Quality Schema, an odd price seems to cause more damage than it would do at lower levels of Price-Quality Schema on prestige image, too;
- Prestige Sensitivity moderates the effect of price endings on the perception that the product might be on sale (positive interaction; $p < .01$), rather than Price Consciousness, which was the proposed moderator: to individuals who do not rely on price as an indicator of prestige, an odd price communicates that the product is likely to be on sale;
- Price Consciousness, more than price endings, seems to play a major role in determining price image, meaning that, regardless of the price ending the respondents were exposed to, the more they were price conscious, the more they would consider the product expensive and more specifically they would consider it more expensive than what is available elsewhere and not as a good deal.
- A significant negative interaction between Price Consciousness and Price endings ($p = .0526$) shows that for low levels only of Price Consciousness, i.e., for non-price conscious individuals, an odd price might signal that the price has been recently increased.
- The opinion that the respondent has regarding the brand *before* being exposed to the stimulus is a good predictor (main effect) of the perceived quality and prestige regardless of the price condition: the better the opinion one has of LV, the more they will perceive

³¹ Previously reported in Figure 22 on page 188.

higher levels of quality and prestige, no matter the price ending. This is also true for overall perceived luxuriousness.

- Perceived prestige and perceived classiness are also positive predictors of overall perceived luxuriousness, but they do not seem to mediate the relationship between price endings and the dependent variable, since they are not predicted by the price ending stimulus.
- Prestige Sensitivity is a moderator of the effect that Price Image_3 (Do you think that the price has recently been increased?) had on perceived luxuriousness: as the individuals become more prestige sensitive, they perceive prices that have supposedly been increased as more luxurious.
- For those consumers that are more discreet (low on preference for brand prominence) the higher the price image, the lower the perceived luxury.

5.4.2.5. Study 3 – First experiment: Discussion and Limitations

The results of the first study confirm few hypotheses and seem to point towards new findings that have not been suggested by the literature before: if on the one hand, the expected role of a Price Quality schema finds empirical support in this small convenience sample, as well as the role of quality and prestige as facets of an overall luxury image, on the other hand it seems necessary to investigate for new odd pricing connotations that might be specific to luxury only. For example, we saw how for non-price conscious individuals, odd prices might signal that the price has recently been increased rather than decreased. This is both surprising as it goes against what has been found in the literature, i.e., that an odd price should be perceived as a price that has recently been decreased, and as it disconfirms hypotheses 12, in which I predicted that non-price-conscious individuals should be the ones to perceive a lower price image when exposed to an odd price. Moreover, this is particularly relevant in the context of this research because consumers of luxury goods are supposed to be non-price-conscious. In the second experiment, I therefore try to test whether the initial hypotheses are indeed disconfirmed, or if these first results might have been due to an inadequate sample.

Moreover, since in this first study, there were no significant main effects, I designed the second study so that the stimulus would be more prominent, as described in the methodology of study 4 (i.e., the second experiment), to make sure it would be noticed and it would therefore have an impact on the dependent variables. I also improved on the first results to

fine-tune the scales used to measure personal traits and perceptions to have higher reliability for the measurement model.

5.4.2.6. Study 3 – Limitations

There are several limitations in this first experiment. The first is that it was conducted on a convenience sample, recruited mainly through social media. Although the initial filter question and the filters applied *ex post* supposedly left me with an appropriately representative sample, I cannot guarantee that the respondents were homogeneous in terms of other characteristics, which are not measured in the questionnaire, but which might impact significantly the results.

Secondly, I designed the experiment with only two conditions, while I should have introduced a control condition and use it as baseline when coding odd and even prices dummies so that the results would have not been symmetrical. Also, I should have created another even price condition, as I did in the second experiment, to control for price-levels differences: 1700 euros is 90 euros cheaper than 1790 euros, so even the few effects that I observed might be due to different price levels more than they are attributable to different price endings. If I had introduced a 1800-euro condition, and if I had observed the same results as I did for the 1700 condition, than I would be able to infer that the effect is due to the price ending, rather than the price level.

Thirdly, as I have previously mentioned, the stimuli of this first experiment, might have not been prominent enough, as respondents were exposed to one product only, and therefore to one price. On the one hand, one cannot ask the respondent to pay particular attention to the price cue, because this would bias the results as it would not be realistic, on the other hand, if the respondent's attention is not attracted to the price cue, we cannot be sure they pay any attention to it at all. In the second experiment I made sure that the stimulus was more noticeable, without mentioning asking respondents to pay attention to it.

Lastly, this first experiment was based on a first conceptual framework that did not include customers' needs for uniqueness, nor did it measure perceived uniqueness as a facet of the concept of luxury. However, these constructs were then taken into account when developing Study 4, i.e., the second experiment to measure the impact of odd and even prices on customers' perceptions of luxury.

5.4.3. Study 4 - Detailed Methodology

This section describes in detail what the reader can also find in Appendix 3.2.

The second experiment was conducted in March 2015 with a four-condition between-subjects design. The questionnaire was administered at the beginning of a marketing lecture to 8 classes of two top French business schools (4 classes per school), either at pre-master level or in their first year of master. Kapferer (1998) points out how management students are likely to be actual or potential customers of luxury goods. For this second study, the questionnaire was administered on paper under the supervision of the professor in class, in order to maximize the response rate. The language was, as for the first study, English, despite the majority of the students being French (86% of the sample was French, 4,5% Moroccan). The reason why I chose to conduct the experiment with students, beside the evident convenience, is that the conditions were ideal for an experimental method: they were attending the same course, on the same day, they all had approximately the same age and they supposedly shared the same cultural and social background, which should reduce unsystematic variation. Because of these controlled conditions, I did not feel the need to randomize the distribution of the 4 conditions of the experiment: all of the students in one group received the same version of the questionnaire.

The questionnaire started with questions regarding personal traits, instead of filter questions regarding luxury consumption, which were asked at the end. Some modifications compared to Study 3 were made in order to improve the measurement model and also to take into account a more complete conceptual framework that included the personal traits of need for uniqueness as well as the facet perceived uniqueness, which were not included in the first experiment.

For Price-quality schema, it was felt that adding the word “luxury”, as follows, would better specify two out of the four items:

- Price-Quality Schema_1: Generally speaking, the higher the price of a luxury product, the higher its quality.
- Price-Quality Schema _3: The price of a luxury product is a good indicator of its quality.

The other two items for this construct were left unchanged.

For Prestige Sensitivity only the four items that loaded onto the factor in the CFA of Study 3 were retained, as the other four were considered superfluous and they did not contribute to factor reliability. The four items retained and adapted are:

- Prestige Sensitivity _1: Buying a luxury brand makes me feel good about myself.
- Prestige Sensitivity _2: When I buy a luxury product I feel classy.
- Prestige Sensitivity _3: I enjoy the prestige of buying a luxury product.
- Prestige Sensitivity _4: It says something to people when you buy a luxury version of a product.






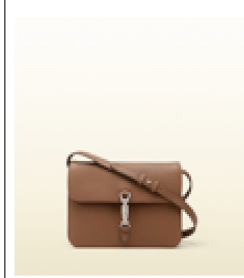
For Price Consciousness, it was felt that the construct as it was measured in the first study was completely inadequate in a luxury context, especially since no hypotheses involving PC were confirmed. New items were therefore generated, as follows:

- Price Consciousness _1: Sales season is a good opportunity for me to consider buying luxury products that I would not buy otherwise.
- Price Consciousness _2: If I wanted to buy a luxury product available in different materials and/or sizes, I would choose the least expensive option.
- Price Consciousness _3: If I could not make up my mind between two luxury products, I would go for the one with the lower price.
- Price Consciousness _4: When I consider buying a luxury product, I tend to buy the lowest-priced option that will fit my needs.
- Price Consciousness _5: When buying a product that different brands offer in similar versions, I look for the cheapest brand available.

The reason why the original items for Price Consciousness were not deemed adequate is that, for example, it does not make sense to ask whether the consumer is willing to go the extra mile to find a cheaper price for a luxury product they intend to buy, as prices are generally imposed centrally by the firm and within the same currency zone there is no variation. This consideration makes 4 out of 5 items in the first study unsuitable to measure the PC construct in a luxury context, while the fifth item (I will change what I had planned to buy in order to take advantage of a lower price) could be much better formulated, as it was the case in the second study. I did not use a C-OA-R-SE (Rossiter, 2002) procedure as the scale did not need to be developed from scratch, items are straightforward and self-exploratory and confirmatory factor analysis will reveal any issue should arise with these items.

In the second part of the questionnaire I showed participants a set of 6 products, whose pictures were taken from Gucci.fr. Participants were not told the brand of the products, since in the first study it was found that an a priori opinion about the brand would explain most of the variance in the perceived luxuriousness and therefore “hide” any effect a price ending manipulation might bring about. Each class was only exposed to one price condition, so each condition was administered to two classes. Please refer to Table 82 to see how the experiment was structured.

Table 82 - Prices for the 6 items in the 4 experimental conditions, the actual retail price as it was found on Gucci.fr in February 2015 and the average price per condition. All prices are in euros.

			
A – Even down	1400	2400	2300
B - Control	1480	2570	2440
C - Odd	1490	2490	2390
D – Even up	1500	2500	2400
Real price	1490	2500	2400
			
A – Even down	1800	700	1700
B - Control	1850	750	1750
C - Odd	1890	790	1790
D – Even up	1900	800	1800
Real price	1850	750	1750

	A – Even down	B - Control	C - Odd	D – Even up
Average price	1717	1807	1807	1817

In the first study, I only created two price conditions: one for the price in -90 and the other for the even price rounded down to the nearest hundred. It is therefore difficult to state whether any effect found was due to the different price ending or to the fact that the price in -00 was actually 90 euros cheaper. For this reason, it was felt necessary to test more price endings by including in the experiment two even price conditions, one rounded up and the other rounded

down to the nearest hundred, as well as a condition where all prices would have random price endings (neither round nor odd). I called this last condition “control”, although not all of the prices in it have been kept as they were observed on the website, but they have been modified so that the control average price would be equal to the odd average price and so that no price ending in this condition would be even or odd. By showing 6 products instead of just one with different prices but identical price endings, it was hoped that there would be a significant main effect in the observed results, because the repeated stimulus would be supposedly more easily noticed.

On the same page participants saw a brief description of what they were seeing in the page and were asked a question on the perceived luxuriousness of the brand: “Please take some time to have a look at the handbags above. They are all by Brand X and they are all made of the same kind of leather. Would you say that Brand X is luxurious?” The answer was on a 7-point Likert-type scale from “Not at all luxurious” to “Extremely luxurious”, since the corresponding question in the first experiment was considered ambiguous. This question of brand luxuriousness was asked before all questions regarding different facets of luxury, so that it would not be influenced by the specific product perceptions.

On the following page, a list of attributes had to be rated concerning the 6 products on average. I did not ask to pick a single product to rate, because when analyzing the results, I would not have been able to control for different product features and price levels, which could also explain perceptions as well as or more than price endings. The list of attributes was adapted from the Brand Luxury Index developed by Vigneron & Johnson (2004) for the facets of Conspicuousness, Quality and Uniqueness. In particular, what the two authors call Conspicuousness coincides with what I conceptually identify as Prestige Image. Their Quality facet corresponds to what is referred to as Quality Image in the literature on odd pricing and their Uniqueness facet corresponds to what I have been calling Uniqueness Image. I included some questions to allow me to measure the Price Image of the products, as this is a focal point of the research. Once again, the items were measured on a Likert-type 7-point scale ranging from “Not at all”(- - -) to “Extremely” (+ + +).

Table 83 - Items to measure perceptions of products adapted from BLI of Vigneron & Johnson (2004).

Regarding the handbags in the previous page, please tick how well they are doing ON AVERAGE on each characteristic listed below.			
Uniqueness Image	Exclusive	Prestige image	Classy
	Precious		Prestigious
	Rare		Elitist
	Unique	Brand prominence	Easily identifiable as luxury
Quality Image	Good quality	Price Image	Expensive
	Superior		For wealthy people
	Durable		Do you think the prices have been recently increased?
	Sophisticated	Price accuracy	Do the prices result from accurate calculations?

In the penultimate section of the questionnaire, I showed a list of 26 luxury brands, or at least commonly considered as such, plus 5 blank spaces to fill in if needed, so that participants could indicate if they had purchased any of them or indicate any that was not listed plus the frequency of purchase from 0 to 5 or more times over the previous 12 months. While in the first experiment, the corresponding question was a filter which excluded respondents from the rest of the questionnaire, in this case the answer to these items was used as a descriptive criterion to control for in the analysis.

Lastly, a standard list of questions on demographics was asked, on nationality, gender, and age. At the very end, participants were asked whether they could guess the purpose of the study, but none indicated that the study was about price or price endings.

5.4.4. Study 4 – Data analysis and results

5.4.4.1. Sample description

Of the 267 participants who took the survey, 265 questionnaires were retained, while 2 were discharged because they were incomplete. Because the questionnaire was administered in class under the supervision of the professor, the response rate was 100%, i.e., no questionnaire was handed in blank. Please refer to Table 84 to see how many participants were assigned to each condition.

The average age is around 20/21 years old with the participants of the odd price condition being the youngest. The composition of the samples varies by gender and education level: the 8 groups were assigned randomly to the conditions: the odd price condition was assigned two pre-master classes, instead of one pre-master and one M1 classes, which probably biased the

results. We will see later that the main bias actually lies within another of the four conditions, and could not have been foreseen in advance.

Table 84 - Composition of the sample for the second experiment

Condition	N	Age (average)	Sex	Class	N/class
A: 00_down	66	20,85	F: 30(45%)	L3 – Pre Master	27
			M: 36(55%)	M1 – 1st year of Master	39
B: Control	54	20,94	F: 25(46%)	L3 – Pre Master	24
			M: 29(54%)	M1 – 1st year of Master	30
C: Odd_90	73	20,42	F: 39(53%)	L3 – Pre Master	73
			M: 34(47%)		
D: 00_up	72	20,71	F: 42(58%)	L3 – Pre Master	33
			M: 30(42%)	M1 – 1st year of Master	39

As for the first experiment, I will first run exploratory analyses, one for the items regarding consumers' traits and one for consumers' perceptions; then I will put the constructs together in a confirmatory factor analysis to determine model fit, convergent and discriminant validity. Lastly, I will work with either composite factors or individual scales to test my hypotheses.

5.4.4.2. Exploratory Factor Analysis - Based on Field (2013), chapter 17

5.4.4.2.1. EFA for Respondents' personal traits: Preliminary analysis, Factor extraction and Rotation

An EFA was conducted on all the items measuring personal traits and motivations to engage in luxury consumption. I will report the final model of the factor analysis that allowed me to reduce my data to four interpretable factors, which correspond to the constructs I originally wanted to measure and that I included in my conceptual framework.

As I did in the first experiment's analysis, I used a principal axis factoring with a Varimax rotation. After running the first factor analysis, I eliminated several items that did not load on any factors. The resulting four final factors, explain 51.2% of the variance and they correspond to Price-Quality schema, Prestige sensitivity, Price consciousness and Need for uniqueness. The correlation matrix' determinant is 0.002, KMO Measure of Sampling Adequacy is 0,736, therefore good according to Hutcheson & Sofroniou (1999). Barlett's test is highly significant ($p < .01$) and individual items' KMO are well above the minimum recommended threshold of 0,5, the lowest being 0,616 for Prestige sensitivity _4 (It says something to people when you buy a luxury version of a product).

In the reproduced correlation matrix, there are only 8% of non-redundant residuals with absolute values >0,05. The model has therefore an acceptable fit. Please refer to Table 85 below to see factor loadings and structure.

All items load on the intended factor: Factor 1 represents Need for uniqueness, Factor 2 Price-Quality Schema, Factor 3 Prestige sensitivity and Factor 4 Price consciousness.

Table 85 - Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 4 iterations. Showing factor loadings >0,3.

	Factor			
	1	2	3	4
Need for uniqueness_1 Importance of product exclusivity.	0,828			
Need for uniqueness_2 Importance of product rarity.	0,785			
Need for uniqueness_3 Importance of product uniqueness.	0,77			
Need for uniqueness_4 Importance of product preciousness.	0,619			
Price-Quality Schema_3 The price of a luxury product is a good indicator of its quality.		0,864		
Price-Quality Schema_1 Generally speaking, the higher the price of a luxury product, the		0,804		
Price-Quality Schema_2 The old saying "You get what you paid for" is generally true.		0,545		
Price-Quality Schema_4 You always have to pay a bit more for the best.		0,507		
Prestige Sensitivity_3 I enjoy the prestige of buying a luxury product.			0,88	
Prestige Sensitivity_1 Buying a luxury brand makes me feel good about myself.			0,766	
Prestige Sensitivity_2 When I buy a luxury product I feel classy.			0,699	
Prestige Sensitivity_4 It says something to people when you buy a luxury version of a			0,313	
Price Consciousness_4 When I consider buying a luxury product, I tend to buy the lowest-priced option that will fit my needs.				0,815
Price Consciousness_3 If I could not make up my mind between two luxury products, I would go for the one with the lower price.				0,692
Price Consciousness_2 If I wanted to buy a luxury product available in different materials and/or sizes, I would choose the least expensive option.				0,579
Price Consciousness_5 When buying a product that different brands offer in similar versions, I look for the cheapest brand available.				0,529

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser Normalization; Rotation converged in 4 iterations.

5.4.4.2.2. EFA for Respondents' product perception Preliminary analysis, Factor extraction and Rotation

A second EFA was conducted on the list of attributes concerning product image or perceptions (17 items). Although there are no issues of collinearity, since there is no correlation coefficient between any two items that is close to 0,9, the determinant of the correlation matrix is 0. I therefore re-run the factor analysis excluding the items that have the lowest communalities (Price Image_3 - Have the prices been recently increased? Price Accuracy - Do the prices result from accurate calculations?), then an item that has a cross-loading onto two factors (Quality Image_2 - Is the product superior? This item loaded equally on Quality and Prestige Image), since there is no other indicator in the preliminary analysis that suggests there might be issues of any other kind.

The new correlation matrix has not determinant of 0,01. The overall KMO Measure of sampling adequacy is 0,843, therefore “great” according to Hutcheson & Sofroniou (1999) and Barlett’s test is once again highly significant ($p < .01$). Individual items’ KMO are all well above 0,5, the lowest being equal to 0,562. I extracted 4 factors, as suggested by both Kaiser’s criterion and the scree plot, which explain 62% of the variance. Moreover, there are only 7% of unique residuals with absolute values $> 0,05$. All analyses suggest the model has a very good fit. Please refer to Table 87 to see factor loadings and structure.

All items at this point load onto the originally intended factor, except for “Sophisticated” which is grouped with other prestige-related items, rather than with quality-related ones. As shown in the Table 86, Factor 1 represents Uniqueness, Factor 2 Prestige Image, Factor 3 Price Image or Expensiveness, Factor 4 Quality.

Table 86 - Extraction Method: Principal Axis Factoring. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 5 iterations. Showing factor loadings $> 0,4$.

	Factor			
	1	2	3	4
Uniqueness Image_1 Rare	0,92			
Uniqueness Image_2 Unique	0,753			
Uniqueness Image_3 Exclusive	0,718			
Uniqueness Image_4 Precious	0,614			
Prestige Image_1 Prestigious		0,767		
Prestige Image_2 Classy		0,766		
Prestige Image_3 Sophisticated		0,59		
Prestige Image_4 Conspicuous		0,529		
Prestige Image_5 Elitist		0,466		
Price Image_1 Only for wealthy people			0,885	
Price Image_2 Expensive			0,665	
Quality Image_1 Durable				0,72
Quality Image_2 Good quality				0,696

5.4.4.3. *Confirmatory Factor Analysis*

For the CFA, I followed the same procedure as in the analysis for the first experiment. I treated Price Increase and Perception of Brand Luxuriousness as reflective constructs, although they are observed variables, because it is the only way to include them in a discriminant validity analysis in Amos SPSS. I recreated the model as suggested by the EFA and directly obtained a satisfying model, as illustrated in Figure 30 below.

The Comparative Fit Index (CFI) is 0.927, which indicates a very good fit according to Hu & Bentler (1999) Tucker Lewis Index (TLI) is 0,907; Root Mean Square Error of Approximation (RMSEA) is 0,049 and p-close is far from significance at 0.631.

Figure 30 - Path diagram of measurement model for the second questionnaire: independent variables, dependent variables, moderators and mediators are shown in the diagram to assess model fit and discriminant validity.

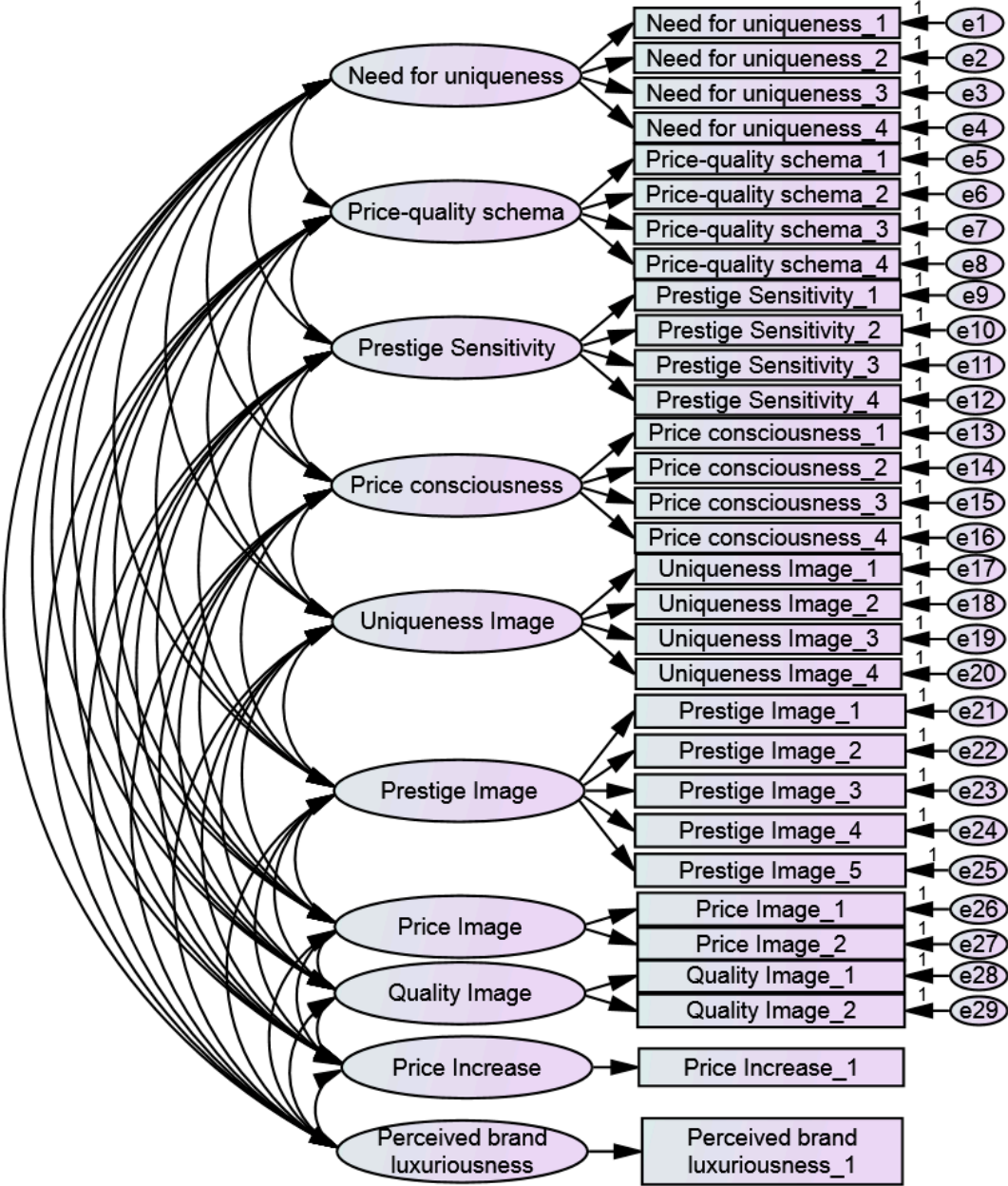


Table 87 - Measurement model: Convergent validity and Model fit indicators

Construct	Item	Factor Loading	Sig.	Item Reliability	1-Reliability	Coeff. Alpha	Factor Reliability	AVE
Need for uniqueness	Need for uniqueness_3	0,809	0,000	,65	,35	0,842	,84	,58
	Need for uniqueness_2	0,708	0,000	,50	,50			
	Need for uniqueness_1	0,881	0,000	,78	,22			
	Need for uniqueness_4	0,622	0,000	,39	,61			
Price-Quality Schema	Price-Quality Schema_	0,504	0,000	,25	,75	0,78	,79	,50
	Price-Quality Schema_	0,913	0,000	,83	,17			
	Price-Quality Schema_	0,532	0,000	,28	,72			
	Price-Quality Schema_	0,785	0,000	,62	,38			
Prestige Sensitivity	Prestige Sensitivity_4	0,304	0,000	,09	,91	0,784	,80	,53
	Prestige Sensitivity_3	0,916	0,000	,84	,16			
	Prestige Sensitivity_2	0,706	0,000	,50	,50			
	Prestige Sensitivity_1	0,836	0,000	,70	,30			
Price Consciousness	Price Consciousness_5	0,553	0,000	,31	,69	0,746	,75	,44
	Price Consciousness_4	0,811	0,000	,66	,34			
	Price Consciousness_3	0,672	0,000	,45	,55			
	Price Consciousness_2	0,579	0,000	,34	,66			
Uniqueness Image	Uniqueness Image_2	0,819	0,000	,67	,33	0,879	,89	,66
	Uniqueness Image_1	0,885	0,000	,78	,22			
	Uniqueness Image_4	0,749	0,000	,56	,44			
	Uniqueness Image_3	0,793	0,000	,63	,37			
Prestige image	Prestige Image_4	0,683	0,000	,47	,53	0,833	,85	,53
	Prestige Image_3	0,612	0,000	,37	,63			
	Prestige Image_2	0,744	0,000	,55	,45			
	Prestige Image_1	0,876	0,000	,77	,23			
	Prestige Image_5	0,685	0,000	,47	,53			
Price image	Price Image_1	0,968	0,000	,94	,06	0,741	,79	,67
	Price Image_2	0,627	0,000	,39	,61			
Quality Image	Quality Image_2	0,965	0,000	,93	,07	0,733	,78	,65
	Quality Image_1	0,599	0,000	,36	,64			
Price increase	Price increase_1	1	0,000	1,00	,00	/	/	/
Brand X's Perceived Luxuriousness	Brand X's Perceived Luxuriousness_1	1	0,000	1,00	,00	/	/	/

The results for the tests of construct reliability in Table 87 indicate a good measurement model and high convergent validity. Item reliability is predominantly above the required threshold of 0,4 (Bagozzi & Baumgartner, 1994) and even mostly above 0,5: this ensures that each item shares an important part of variance with its latent variable. Despite few exceptions, all other indicators of reliability for the construct are good.

Factor loadings are all highly significant (sig.=0,00), which provides further support for convergent validity (Bagozzi et al., 1991). Lastly and most importantly factor reliability should always exceed 0,7, which is the case here, the lowest being 0,75 for Price Consciousness, which is more than acceptable. Average variance extracted (AVE) as defined by (Fornell & Larcker, 1981) values always exceed 0,5, except for Price consciousness.

I then assessed discriminant validity both through Fornell & Larcker criterion and through a chi-square difference test for each pair of constructs in the model.

Table 88 - Fornell- Larcker criterion to assess discriminant validity

	Price Image	Brand luxuriousness	Price increase	Prestige Image	Uniqueness Image	Price Consicousness	Prestige Sensitivity	Price-Quality Schema	Need for Uniqueness	Quality Image	MAX
Price Image	0,670										0,670
Brand luxuriousness	0,189	Formative									Formative
Price increase	0,053	0,063	Formative								Formative
Prestige Image	0,173	0,319	0,025	0,530							0,530
Uniqueness Image	0,048	0,135	0,040	0,458	0,660						0,660
Price Consicousness	0,040	0,014	0,000	0,007	0,000	0,440					0,440
Prestige Sensitivity	0,003	0,007	0,025	0,013	0,023	0,040	0,530				0,530
Price-Quality Schema	0,000	0,006	0,000	0,012	0,016	0,003	0,088	0,500			0,500
Need for Uniqueness	0,028	0,006	0,006	0,001	0,013	0,020	0,095	0,019	0,580		0,580
Quality Image	0,125	0,200	0,047	0,274	0,142	0,002	0,035	0,012	0,001	0,650	0,650
MAX	0,670	Formative	Formative	0,530	0,660	0,440	0,530	0,500	0,580	0,650	

As shown above in Table 88, the Fornell-Larcker criterion is met: each squared correlation of any construct with any other construct is less than the AVE for the same construct, which indicates discriminant validity.

Table 89 shows that the fit of the unconstrained model (please refer to Figure 30, in which there are no constraints on the covariances between latent variables, is significantly better than any model where a covariance between any two of the latent variables is constrained to 1 ($\Delta\chi^2$ is significant; $p < .001$). Chi-square statistics for the unconstrained model is 634,974. Please find chi-square statistics for each constrained model in Table 89 below highlighted in yellow, while differences between each constrained model chi-square statistics and the unconstrained model one highlighted in light green.

Table 89 - In yellow: chi-square statistics for each constrained model; in green: differences between each constrained model's chi-square statistics and the unconstrained model's one.

	Price Image	Brand luxuriousness	Price increase	Prestige Image	Uniqueness Image	Price Consicousness	Prestige Sensitivity	Price-Quality Schema	Need for Uniqueness	Quality Image
Price Image		99,7	115,2	105,4	116,8	116,9	119,2	118,7	124,1	96,7
Brand luxuriousness	734,7		61,8	327,5	477,8	232,7	403,0	329,1	413,8	90,2
Price increase	750,2	696,8		476,2	530,6	234,1	400,3	329,4	414,3	104,8
Prestige Image	740,4	962,4	1111,2		186,5	233,6	401,6	329,5	414,4	76,9
Uniqueness Image	751,8	1112,8	1165,6	821,5		234,2	397,9	329,1	414,0	96,3
Price Consicousness	751,9	867,6	869,1	868,6	869,2		225,7	234,7	232,0	106,5
Prestige Sensitivity	754,2	1038,0	1035,2	1036,6	1032,9	860,7		296,2	373,6	105,3
Price-Quality Schema	753,6	964,1	964,4	964,4	964,0	869,7	931,2		323,5	106,3
Need for Uniqueness	759,1	1048,7	1049,3	1049,4	1049,0	867,0	1008,6	958,5		106,5
Quality Image	731,7	725,2	739,8	711,9	731,2	741,5	740,3	741,2	741,5	

Next, I will reduce all reflective constructs to factors through a principal factor analysis in order to test hypotheses with composite dimensions.

5.4.4.4. Hypothesis testing

No hypothesis can be confirmed at an aggregate level: ANOVAs to test any difference in mean of dependent variables among the four conditions are in general not significant. Only the two ANOVA's testing for difference in mean in Price image and Brand luxuriousness are marginally significant ($p < 0,1$).

Table 90 – One-way ANOVA's; fixed factor: manipulated independent variable (3 treatment conditions and one control condition).

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Product Uniqueness Image	Between Groups	1,515	3	,505	,558	,643
	Within Groups	228,980	253	,905		
	Total	230,495	256			
Product Prestige image	Between Groups	3,717	3	1,239	1,405	,242
	Within Groups	227,462	258	,882		
	Total	231,179	261			
Product price image	Between Groups	5,694	3	1,898	2,572	,055
	Within Groups	191,115	259	,738		
	Total	196,808	262			
Product quality image	Between Groups	3,749	3	1,250	1,719	,163
	Within Groups	186,788	257	,727		
	Total	190,537	260			
Perceived brand luxuriousness	Between Groups	11,325	3	3,775	2,242	,084
	Within Groups	441,212	262	1,684		
	Total	452,538	265			

The ANOVA's tell us whether there is a significant difference or not in the mean of the dependent variables, but it does not tell us, in which conditions the means might significantly differ from the others. Also, ANOVA's do not tell us if the difference in means is the hypothesized direction.

Another way to understand whether price endings have any effect on perceptions of luxury and its facets is to run linear regressions with dummy variables to identify any specific condition that impacts perceptions more than others. In Table 91, I run five linear regressions with only the manipulated variable as predictor to see whether any stimulus had any impact at all on perceptions of luxury. I controlled for the number of luxury products in the previous 12 months, because when exploring the data, I found that on average participants who took the questionnaire in the “rounded-up even” price condition bought nearly 2 products more per year than participants in conditions “rounded-down even” and “control” (5 vs. 3 products on average). Participants in the odd price condition on average buy 4 products per year.

More assiduous consumers of luxury products might be more demanding in their definition of luxury and the fact that they are concentrated in just one condition might bias the results.³² Please refer to Table 91.

Table 91 – Linear regressions with only the manipulated independent variable as predictor; Controlled for number of products bought in the previous 12 months; Baseline: control condition, “other” prices.

VARIABLES	(1) Price Image	(2) Uniqueness Image	(3) Prestige Image	(4) Quality Image	(5) Perceived Luxuriousness
Dummy Even down	-0.341** (0.155)	-0.161 (0.177)	-0.0908 (0.175)	-0.0612 (0.157)	-0.307 (0.236)
Dummy Even up	-0.295* (0.154)	-0.205 (0.177)	-0.307* (0.173)	-0.290* (0.155)	-0.541** (0.234)
Dummy Odd	-0.0878 (0.152)	-0.0806 (0.174)	-0.0770 (0.172)	-0.0135 (0.155)	-0.258 (0.231)
Constant	0.353*** (0.121)	0.133 (0.139)	0.163 (0.139)	0.101 (0.123)	5.507*** (0.185)
Observations	263	257	262	261	266
R-squared	0.075	0.007	0.018	0.020	0.042
Controlled for	Number of products bought	Number of products bought	Number of products bought	Number of products bought	Number of products bought
Adj. R-squared	0.0608	-0.00884	0.00253	0.00437	0.0277
VIF	1.081	1.007	1.018	1.020	1.044

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

As we can see from Table 91, in general being exposed to an odd price does not have any significant effect on perceptions of luxury and its facets. Unexpectedly, being exposed to the higher price condition, i.e., to the condition where all prices were rounded up to the nearest hundred, has a negative effect on perceived price image and prestige image (although the coefficients are only marginally significantly different from zero) and on perceived luxuriousness ($p<0,05$). Also, being exposed to even prices which have been rounded down has a negative effect on perceived expensiveness, but here, as in the first experiment, it is difficult to understand whether this negative effect is due to the price ending or to the average lower price of the 6 bags. If we assume that there is no bias, because I controlled for number of products bought, we can conclude that in general even prices are perceived as cheaper, as applied to products that are less unique, less prestigious, of inferior quality and that are therefore overall less luxurious compared to prices that have “other” and 50- endings (i.e.,

³² Indeed, the number of luxury products bought has a significant negative effect on perceived luxuriousness and price image ($p<0,05$), which means that participants in the even-up condition are more used to luxury and tend to consider less luxurious what for others who are less accustomed to luxury is luxurious.

prices that have been coded as the baseline). This is very surprising since everything in the literature points in the opposite direction and also managers seem to use even prices on more expensive, prestigious, luxurious handbags, while “other” prices are used like odd prices to more accessible luxury handbags. What is more, so far, in the literature, it has been hypothesized how consumers pay little attention to rightmost digits. A possible take-away from these results is that consumers actually do pay attention to rightmost digits and because -00 is lower than -90, prices ending in -00 are perceived as less expensive. This is possibly relevant only when looking at higher prices and might not be relevant in lower-price contexts, such as the FMCG, but it surely is interesting as it is a new and different finding compared to previous literature.

In general, Price-Quality Schema, Prestige Sensitivity, Price Consciousness and Need for Uniqueness do not seem to be moderators of the relationship between any price ending and Quality Image, Prestige Image, Price Image and Uniqueness Image respectively. There are few exceptions. Please refer to Appendices in section 3.2.1. to 3.2.6, where I report PROCESS outputs.

- At medium values of price consciousness (i.e., for respondents who neither enjoy spending money nor are they particularly price averse), “other” prices (i.e., control prices) have a positive effect on perceived expensiveness (price image) compared to even prices which have been rounded down³³. Moreover, at high values of price consciousness, prices that are odd are perceived as more expensive compared to even prices which have been rounded down. In general, we can say that respondents who are moderately to highly price-conscious realize that prices with higher price endings are higher than prices with the same leftmost digits, but lower price endings (which indeed they are). This makes sense, since we have seen that highly price conscious individuals should not easily be persuaded that an odd price is a cheaper price, because they are well aware of prices in the market.
- For individuals that are low in price-quality schema, rounded-up even prices have a significant negative effect on quality image and perceived brand luxuriousness. In the first experiment, I found that individuals high in Price-quality schema perceive higher quality when exposed to even prices, but no effect was significant for low levels of

³³ This is the same as saying that even prices which have been rounded down are perceived as cheaper than “other” prices.

Price-quality schema. So this finding is not contradicting previous findings per se. However, I also find that individuals high in Price-quality schema who are exposed to 90-ending prices perceive higher quality. This latter finding is in contrast with what I found in the first experiment, because individuals high in price-quality schema perceived lower quality when exposed to odd prices. In this case the results concerning the effect of an odd price on perceived quality when moderated by price-quality schema are inconclusive.

- Individuals perceive that the brand is more luxurious when exposed to “other” prices, i.e., not odd and not even.
- The number of products bought in the previous year is a highly significant and negative predictor of price image: the more luxury products the respondent bought, the less they perceive the handbags in the stimulus as expensive. In general, perceived expensiveness has a positive and significant effect on quality and prestige image and the three variables together (price, quality and prestige image) have a significant and positive effect on perceived brand luxuriousness. So, although I find no effect of price endings on perceived facets of luxury, the results are reassuring in that the more a respondent is accustomed to luxury, the more demanding she becomes, and in that the more a product is perceived expensive, the more it will be perceived as prestigious, of higher quality and therefore luxurious.

Quality, Prestige, Uniqueness, Price Image are not mediators of the relationship between price endings and overall Perceived Luxuriousness of the brand. They are however independent predictors of perceived luxuriousness as I show in Table 92 and in Appendix 3.2.6. The variance inflation factor (VIF) shown in Table 92 is much lower than 10 (10 is the commonly accepted threshold to be concerned about multicollinearity) and the tolerance ratio ($1/VIF=0,64$) shows that there are no multicollinearity issues, so each measured facet does indeed measure a different part of the luxury construct.

Figure 31 – Effect of number of luxury products bought on price image (i.e., perceived expensiveness).

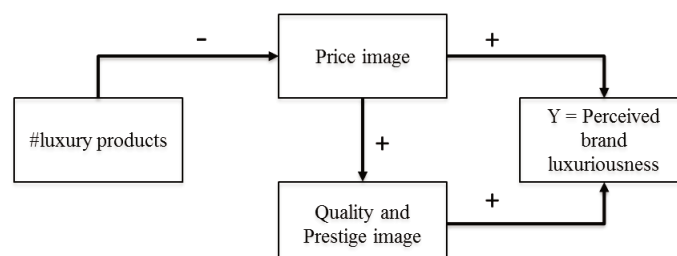


Table 92 - Linear regression showing that prestige, price, quality images are significant and positive predictors of the overall perception of luxury. In other words, the more the respondent finds the product prestigious, expensive and of superior quality, the more they are persuaded that the product is luxury.

VARIABLES	(1) Perceived brand luxuriousness
Prestige Image	0.509*** (0.0949)
Uniqueness Image	0.0905 (0.0877)
Price image	0.322*** (0.0838)
Quality Image	0.235*** (0.0896)
Constant	5.120*** (0.0902)
Observations	251
R-squared	0.362
Controlled for	Number of products bought
Adj. R-squared	0.349
VIF	1.568

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Before running a cluster analysis, given the important difference in number of products bought on average by each segment, it is interesting to see whether price endings' effects change according to the different values of this variable. I will therefore split the sample, by creating 4 sub-groups, as follows:

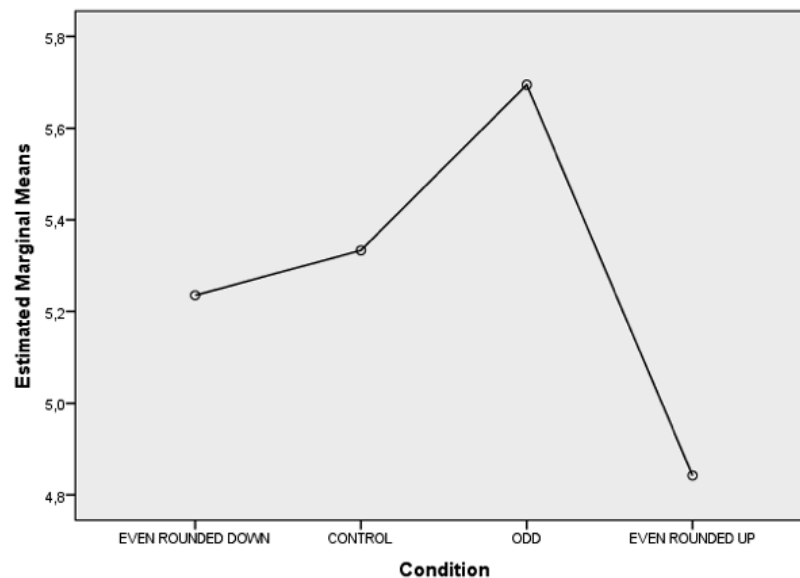
- Group 0: participants who did not buy any luxury product; 28% of the sample;
- Group 1: Occasional buyers (1 to 2 products per year); 26% of the sample;
- Group 2: Habitual buyers (3 to 5 products per year); 20% of the sample;
- Group 3: Assiduous buyers (6 or more than 6 items per year); 26% of the sample.

Clearly, dividing the sample in four means that for each subgroup each condition will have very small counts and it will be therefore hard to find significant effects. I report the following results:

- For non-consumers of luxury (Group 0), odd prices have a negative direct effect on perceived luxuriousness of the brand compared to control prices (p<.05).
- For occasional buyers, odd prices have a positive direct effect on perceived luxuriousness of the brand compared to rounded-down even prices (p<.05), to rounded-up even prices (p<.05) and to control prices (p<.10). As pointed out before, this finding is surprising compared to what the literature seems to suggest. Please refer to Figure 21.

- Also, for high levels of Price consciousness odd prices communicate that prices have been recently increased compared to a rounded-down even price (interaction sig. at 95%), although this could be explained by odd prices being 90 euros higher than rounded-down even prices rather than by price endings, since the interaction is not significant when comparing odd prices to rounded-up even prices.

Figure 32 - Perception of brand luxuriousness for occasional buyers of luxury



- Habitual consumers perceive lower overall luxuriousness when exposed to odd prices compared to when they are exposed to rounded-up even prices: the direct effect of the manipulated variable on perceived luxuriousness is significant at 90% with a moderately strong effect.
- For those participants who have declared to have bought more than 5 luxury products over the previous year odd prices seem to have a particularly positive connotation when compared to higher even prices: they have a positive effect on prestige image ($p < .05$), on perceived expensiveness (i.e., they are perceived as more expensive even though they are 10 euros cheaper; $p < .1$) and on the belief that the prices have recently been increased (i.e., an odd price is perceived as more likely to have been recently increased than a higher even price; $p < .05$).

When analyzing data for the two schools separately, I find the following:

- Odd prices seem to have a positive and significant main effect on quality perceptions for students of **School 1** ($p < .1$) when compared to higher even prices and a negative

and significant main effect on overall luxuriousness when compared to control prices ($p < .01$).

- The effect that odd prices have on perceived product expensiveness compared to lower even prices is moderated by Price Consciousness (interaction sig. at 95%): for very price conscious individuals, odd prices are perceived as more expensive than lower even prices.
- The effect that odd prices have on perceived product expensiveness compared to control prices is moderated by Price consciousness (interaction significant at 0,1): for individuals who are not price conscious, odd prices seem to have a negative effect on perceived expensiveness compared to control prices (control prices are perceived more expensive than odd by non-price conscious participants).
- As for the results concerning participants from **School 2**, odd prices have a positive direct effect on perceived expensiveness when compared to higher even prices ($p < .05$), which mediates at medium and high level of Price Consciousness the relationship between price ending and overall brand luxuriousness (overall positive effect).

5.4.4.4.1. Cluster analysis

As I did for the first experiment, also for the second one I ran a cluster analysis to identify clusters of respondents, combining the moderators into more complex profiles.

I ran a hierarchical cluster analysis in SPSS with the factors of Need for uniqueness, Price-quality schema, Prestige sensitivity and Price consciousness. As we can see from Figure 33, when trying to classify respondents in only two clusters, each cluster becomes too heterogeneous. Classifying respondents into four clusters, on the other hand, generates two of four groups that are extremely alike. Interpreting four clusters is therefore complicated from a conceptual perspective. The optimal number of cluster to identify is three, although this means having very unequal group sizes, as you can observe in Table 93 below. We could alternatively create only two Clusters which would basically oppose consumers of luxury products to non-consumers, but, on top of having very heterogeneous groups, this would not resolve the issue of different group sizing, as we would end up with a cluster of 54 respondents who are consumers, vs. a cluster of 200 respondents who are quasi-non-consumers. I will therefore stick to the creation of three clusters, which is also supported by the hierarchical agglomeration schedule and the graph in Figure 30.

Figure 33 - On the y-axis the average distance from the cluster center.

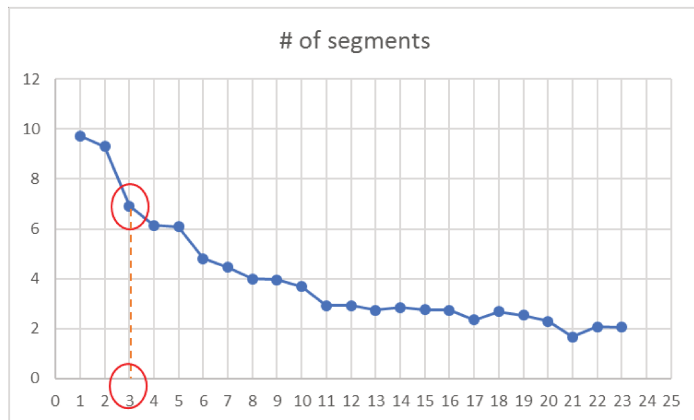


Table 93 - Final cluster centers and number of respondent in each cluster.

	Final Cluster Centers			Number of Cases in each Cluster	
	1	2	3	Cluster	
Need for uniqueness	,20682	-,13259	,43813	1	74,000
Price-Quality Schema	,13653	-,07589	,26537	2	165,000
Prestige Sensitivity	,25233	-,13568	,59388	3	15,000
Price Consciousness	-,17152	,09444	-,21817	Valid	254,000
Number of luxury products bought in past 12 months	6	1	14	Missing	12,000

Table 94 – Cluster description

	Cluster 1	Cluster 2	Cluster 3
Number of respondents in the cluster	74	165	15
Need for uniqueness	+	-	++
Price-Quality Schema	+	0	+
Prestige Sensitivity	+	-	+++
Price Consciousness	-	0	-
Number of luxury products bought in past 12 months	+	0	++
Description	Respondents in Cluster 1 are moderate consumers of luxury goods (6 products bought on average over the previous year ³⁴): they want to be somewhat unique, but without getting too far from the "swing" of things, they rely on price as an indicator of quality and prestige and they are not price conscious. We could see them as Moderate consumers.	Respondents in Cluster 2 are not really interested in luxury products. They have bought on average 1 luxury item over the previous 12 months, they do not particularly rely on price as an indicator of quality or prestige, they are not slightly more price conscious than the other 2 clusters. They are Not really interested .	Respondents in Cluster 3 are very much like respondents in Cluster 1, but with a higher need for uniqueness, a much higher prestige sensitivity and a higher number (14 vs.6 ²³) of luxury products bought over the previous 12 months. They seem to be Passionate about luxury.

³⁴ 6 and 14 products per year might seem a lot, but in the questionnaire no distinction between product categories was made, so these numbers supposedly comprise also the purchase of cosmetics by luxury brands.

Unfortunately, the detail given by cluster membership does not help us find any more significant results to confirm or disconfirm the numerous hypotheses. When running univariates with full factorial models, interactions of the independent variable and cluster membership do not explain in any way perceived brand luxuriousness, as it was instead the case in the first experiment. The only interesting and new findings that I can highlight thanks to cluster membership are those shown in Table 95 below.

Table 95 – Regressions showing interactions between stimulus and cluster membership

VARIABLES	(1) Prestige Image	(2) Price Image
Exposed to Rounded-down even price	-0.0482 (0.208)	-0.349* (0.184)
Exposed to Rounded-up even price	-0.226 (0.220)	-0.148 (0.195)
Exposed to Odd price	-0.253 (0.209)	-0.205 (0.184)
Cluster 1 – Moderate consumer	-0.186 (0.294)	-0.551** (0.270)
Cluster 3 – Passionate consumer	0.842 (0.945)	0.0761 (0.847)
Rounded-down even* Cluster 1	-0.270 (0.400)	-0.00758 (0.364)
Rounded-down even* Cluster 3	-0.950 (1.155)	0.366 (1.035)
Rounded-up even* Cluster 1	-0.0558 (0.380)	-0.198 (0.346)
Rounded-up even* Cluster 3	-1.347 (1.029)	-0.572 (0.922)
Odd* Cluster 1	0.775** (0.387)	0.341 (0.352)
Odd* Cluster 3	-0.943 (1.042)	-0.442 (0.934)
Constant	0.0247 (0.181)	0.320** (0.159)
Observations	251	252
R-squared	0.099	0.121
Gender effects	YES	YES
School effects	YES	YES
Adj. R-squared	0.0500	0.0733
VIF	1.110	1.138

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

In Table 95, Model 1 shows that respondents who are Moderate consumers of luxury, when they are exposed to odd-priced handbags perceive a more prestigious product compared to handbags that have “other” price endings and compared to respondents who are not interested in luxury (i.e., the baselines to the indicator variables). Model 2 shows that being exposed to

the rounded-down even price condition meant that respondents perceived a lower price (marginally significant) and that being a Moderate consumer causes that the respondent will perceive the price as less expensive than a respondent who is not interested in luxury at all.

5.4.5. Study 4 - Limitations

Despite the effort of improving the experimental design thanks to the results of the first experiment, also this study has got several limitations. Firstly, the stimulus is composed of 6 different pictures products with respective prices, therefore I cannot determine whether some effects or the absence of effects is due to the exposure to simultaneous stimuli: each respondent might have focused their attention on only a part of the 6 stimuli, it is therefore impossible to know whether their perception is caused by taking into account all of the 6 products or, rather, just some of them.

Secondly, the questionnaire being administered on paper, participants could have seen pictures before answering personal traits questions, in this case what I considered to be moderators in the analysis could become mediators, as they would also have been conditioned by the manipulated variable, instead of being independent factors.

The experiment proposed the same stimuli to male and female respondents, which, of course allowed me to have more observations for each condition, but might lack validity given that a big part of the sample might have been much less interested in the stimulus than the other. Ideally, I should have used a non-gender specific product category, like a luxury pen.

One of the possible reasons why I do not observe main effects is that the 6 pictures of products might not be appropriate stimuli to test perceptions of luxuriousness and its other facets, especially since the experiment was printed on paper instead of showing real handbags to participants. I should have either run the experiment with real luxury handbags or done a manipulation check with another sample, to see whether the handbags as shown in the pictures were perceived as luxury at all.

Lastly, the distribution of the four conditions of the experiment was not randomized (i.e., the whole of each group received the same version of the questionnaire): since one group on average bought twice as many luxury products than the other 3 conditions, I cannot understand if the non-significant results are due to the lack of effect of odd prices or to unsystematic variation bias, i.e., variation that is caused by differences intrinsic to the

individuals who took part in the experiment, rather than variation that might be explained by the manipulation and therefore the model. Respondents that buy several luxury products might be more demanding than others in their definition of what luxury is.

5.5. Study 3 and 4 discussion

The results of the first experiment (Study 3) show that individuals who were exposed to the even price condition were more likely to judge it as the lowest price available for that product and as a price that has unlikely been increased. Similar results are found in the second experiment (Study 4), where we saw that both being exposed to the rounded-down and rounded-up even price conditions causes the respondents to perceive a lower price image compared to control prices (i.e., prices that are neither even nor odd). This disconfirms both hypotheses 4 according to which odd prices should have these effects instead.

Another main effect that was found in the second experiment is that being exposed to a rounded-up price has a negative effect on prestige and quality images and on perceived luxuriousness. This might be explained by the fact that on average respondents in this condition buy more luxury products than respondents in other groups. However, given that in the regressions testing main effects I controlled for the number of luxury products bought in the previous year, these results should be somewhat reliable. In this case, we could interpret that price endings are looked at and they do carry information about the monetary value of the product: in particular, since -00 is smaller than -90, if the respondent were not aware of the difference in the leftmost digit, they might interpret a higher even price to be lower than the 10-euro cheaper price.

No other hypothesis on the predicted main effects of odd and even prices was confirmed, as the results are not significant. Please refer to Table 96 for a summary of the results concerning all hypotheses on customers' perceptions of odd and even prices.

Table 96 – Summary of all hypotheses in the two experiments

	Hypotheses on main effects	Experiment 1	Experiment 2
Hp4a	Consumers will perceive a lower price image for an odd-priced product compared to consumers who are exposed to the same product with other price endings.	Disconfirmed	NS
Hp4b	Consumers will perceive a higher price image for an even-priced product compared to consumers who are exposed to the same product with other price endings.	Disconfirmed	Disconfirmed
Hp5a	Consumers will perceive a lower quality image for an odd-priced product compared to consumers who are exposed to the same product with other price endings.	NS	NS
Hp5b	Consumers will perceive a higher quality image for an even-priced product compared to consumers who are exposed to the same product with other price endings.	NS	Disconfirmed
Hp6a	Consumers will perceive a lower prestige image for an odd-priced product compared to consumers who are exposed to the same product with other price endings.	NS	NS
Hp6b	Consumers will perceive a higher prestige image for an even-priced product compared to consumers who are exposed to the same product with other price endings.	NS	Disconfirmed
Hp7a	Consumers will perceive lower uniqueness for an odd-priced product compared to consumers who are exposed to the same product with other price endings.	NS	NS
Hp7b	Consumers will perceive higher uniqueness for an even-priced product compared to consumers who are exposed to the same product with other price endings.	NS	NS
Hp 8a	Consumers will perceive an odd-priced product to be less luxurious than consumers who are exposed to the same product with other price endings.	NS	NS
Hp8b	Consumers will perceive an even-priced product to be more luxurious than consumers who are exposed to the same product with other price endings.	NS	NS
Hp9	Perceived quality, uniqueness, prestige, expensiveness mediate the effect of odd and even prices on overall perceived luxuriousness.	NS	NS

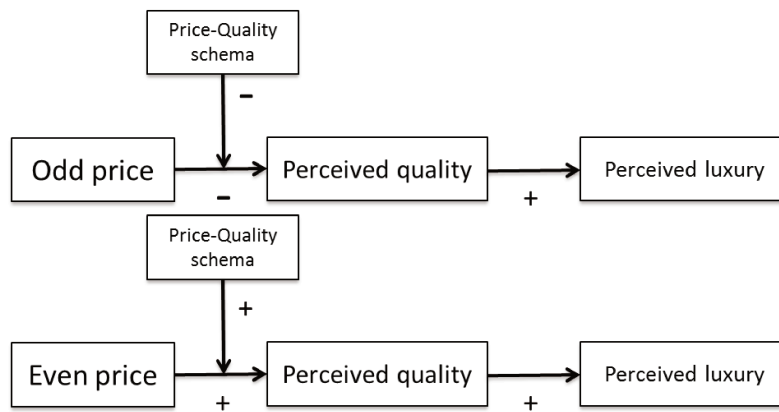
	Hypotheses on moderators	Experiment 1	Experiment 2
Hp10a	Odd prices will have a stronger negative impact on perceived product quality for individuals who heavily rely on price as an indicator of product quality than for individuals who do not rely on price as a quality indicator.	Confirmed	Disconfirmed
Hp10b	Even prices will have a stronger positive impact on perceived product quality for individuals who heavily rely on price as an indicator of product quality than for individuals who do not rely on price as a quality indicator.	Confirmed	NS
Hp11a	Odd prices will have a stronger negative impact on perceived product prestige for individuals high in prestige sensitivity than for individuals low in prestige sensitivity.	NS	NS
Hp11b	Even prices will have a stronger positive impact on perceived product prestige for individuals high in prestige sensitivity than for individuals low in prestige sensitivity.	NS	NS
Hp12a	Odd prices will have a negative impact on a product's price image (i.e. perceived expensiveness) for individuals low in price consciousness or for individuals who enjoy spending money, but not for individuals who are highly price conscious.	NS	NS
Hp12b	Even prices will have a positive impact on a product's price image (i.e. perceived expensiveness) for individuals low in price consciousness or for individuals who enjoy spending money, but not for individuals who are highly price conscious.	NS	NS
Hp13a	Odd prices will have a stronger negative impact on a product's perceived uniqueness for individuals high in need for uniqueness than for individuals who are low in need for uniqueness or high in need for conformity.	NS	NS
Hp13b	Even prices will have a stronger positive impact on perceived product uniqueness for individuals high in need for uniqueness than for individuals low in need for uniqueness.	NS	NS

NS = non-significant

Hypotheses 10 argued that individuals who rely on price as an indicator of quality would perceive a more negative effect of an odd ending on the quality image of the product and that they would perceive a more positive effect of an even ending on the quality image of the product. These hypotheses were confirmed in the first experiment, as it is shown in Figure 34. As expected individuals perceive an effect of odd and even prices only at high levels of the price quality schema, since individuals who do not rely on price as an indicator of quality are

not expected to be influenced by whatever price ending connotation on quality. This price-quality schema seems to have similar effects on perceived prestige, although, according to my hypotheses, Prestige sensitivity was the proposed moderator.

Figure 34 - Conceptual framework for an odd price (on top) and an even price (below) at high values of Price-Quality Schema.



What I find the second experiment does not confirm the same framework, but highlights other results: respondents believe higher even prices are applied to inferior quality, less luxurious products only when they do not rely on price as an indicator of quality. This only makes sense if we consider that respondents in this price-ending condition buy more luxury products than other groups, so they probably have higher standards for what luxury is. So, while they do not rely too much on price to infer product quality, what is expensive for other customers, for them is affordable. Moreover, respondents who do rely on price as a quality indicator (i.e., high on price-quality schema) find that prices that are neither odd nor even are perceived as more luxurious than lower even prices. This is compatible with findings in experiment 1, in that a control condition was not included at all, so these results cannot be considered contradictory, but rather complementary. However, in the second experiment I also find that individuals who strongly rely on price as an indicator of quality consider odd-priced products of higher quality, which is contradictory to what I hypothesized and to what I found in the first experiment. So, results are regarding the role of price-quality schema when the individuals is exposed to an odd price are inconclusive.

Hypotheses 12 argued that odd and even prices should be perceived as less expensive and as more expensive respectively compared to other prices, but only for individuals who are not price conscious. What I find in the second experiment is that highly price conscious respondents consider odd prices as more expensive than lower even prices, which they are.

Indeed, on average prices in the lower even price condition are 90 euros cheaper, so the assumption that price conscious consumer will not easily be fooled by the “cheap” connotation is confirmed. However, I do not find evidence to confirm that non-price conscious individuals will be persuaded of the “good-deal” connotation of odd prices, which is why I consider Hypothesis 12 as non-confirmed.

No other hypotheses concerning proposed moderators can be confirmed. However, the most interesting results are those that were not hypothesized. I find, for example, that individuals who heavily rely on price as a quality indicator are skeptical about the accuracy with which an odd price has been calculated. In other words, only individuals who do not rely on price as a quality indicator find that an odd price has been carefully calculated.

Secondly, individuals who do not use price as an indicator of prestige perceive that odd-priced products are most likely to be on sale. Also, individuals who do rely on price as an indicator of prestige find those prices that they believe to have been increased to be more luxurious. In other words, they ascribe to the well-known Veblen effect, according to which the more a product is expensive, the more appealing it becomes.

Thirdly, individuals who are price conscious perceive the products as more expensive than what they think they could find elsewhere, regardless of the price ending they have been exposed to, compared to individuals who are not price conscious. For the latter individuals, an odd price signals that the price has been recently increased.

Lastly, in general, the opinion that the respondent has of the brand Louis Vuitton before being exposed to either an odd or an even price is a good predictor of perceived quality, prestige and luxuriousness. In other words, the price ending seems to play no role in determining brand perceptions for customers who like the brand. This could be true also for other brands. As we are going to see in Chapter 6, respondents do seem to attach a much greater importance to the brand attribute than to the price cue³⁵

As for the results of the second experiment (Study 4), no hypotheses could be confirmed. However, it is rather surprising to find that for occasional buyers odd prices are perceived as more luxurious than all other price endings. Even more so, if we consider that for habitual buyers, the opposite is true, and then for assiduous buyer odd prices also have a positive

³⁵ In the next chapter we are going to see how the price cue has a 5% importance, while the combined attribute of model*Brand has an importance of 95%.

impact on perceived luxuriousness, as well as on prestige image and price image. What is it that makes consumers who buy 3 to 5 luxury products per year like odd prices less than occasional and assiduous buyers (i.e., 1 or 2 products a year and more than 5 respectively)? Since, to the best of my knowledge, there is no theory in the literature that could help me make sense of this, my best guess is that what I observed for habitual buyers is probably an anomaly, and I should rely on the general observed tendency that, in the described luxury context of my experiments, customers appreciate odd prices as more luxurious, since this is true both for occasional and assiduous buyers. This goes against everything that I have hypothesized, but it surely is all the more interesting since it shows that odd prices work in a completely different manner when applied to luxury goods.

For consumers who are somehow used to buying luxury products, one possibility is that, instead of odd prices being perceived as reduced prices, they might be perceived as if they had been increased “as much as possible” before taking the price to the next level. Another possible explanation is that luxury prices are so high that they nullify any negative effects odd prices might have had otherwise on much lower prices, on which they have been found originally.

To conclude, in this chapter I have investigated what impact price endings have on price image, quality image, prestige image and uniqueness image. Moreover, I have investigated whether customer's personal traits such as need for uniqueness or for conformity, or motivations to engage in luxury consumption, such as search for excellent quality or affirmation as status symbol through the prestige of the luxury product might moderate main price ending effects on these perceptions.

Ideally, for the sake of completeness, I would have wanted to also test the impact of price endings on perceived product hedonism, at different levels of importance of hedonic features for the consumer. In particular, we know from the literature that a consumer might perceive a product as more hedonic or more utilitarian depending on the attributes that are highlighted. Luxury products are affect-rich and therefore should be spontaneously evaluated on the basis of the feelings they evoke (Schwarz & Clore, 1983, in Fiedler & Forgas, 1988). However, if odd prices were really considered as a FMCG practice (Harris & Bray, 2007), then using an odd price on a luxury product would be a way to attract attention to the price attribute and it could therefore be seen as unusual in a luxury context. Because the price attribute is more of a rational and objective product attribute than an hedonic one, attracting attention to it could

reduce the hedonic component perception of the product. On the contrary, even prices might be considered as “normal” in a luxury context, and therefore they should not attract attention to the price attribute. In other words, I would expect odd prices to have a negative effect on perceived hedonism compared to even prices, mostly for individuals who engage in luxury consumption for other reasons than search for hedonic benefits, because individuals who buy luxury mainly for its hedonic benefits should pay little to no attention to the price cue (Vigneron & Johnson, 1999; Wakefield & Inman, 2003).

Given the difficulty to measure the perception of hedonic properties as solicited by the exposure to a photographic stimulus, which I used in both Experiment 1 and Experiment 2, I was not able to measure what impact odd and even prices might have on the perception of the luxury’s hedonism facet. However, given that individuals who tend to look at the price (i.e., those not mainly in search of hedonic benefits) should perceive that an odd-priced product is less “hedonic” than an even-priced product, I am expecting them to have a stronger preference for even prices. I will test this hypothesis in Chapter 6, together with other hypotheses concerning other drivers of customers’ preferences for different price endings.

5.5.1. Contributions

With these two studies, Experiment 1 and Experiment 2, I contribute to both the literature on price endings and on luxury pricing.

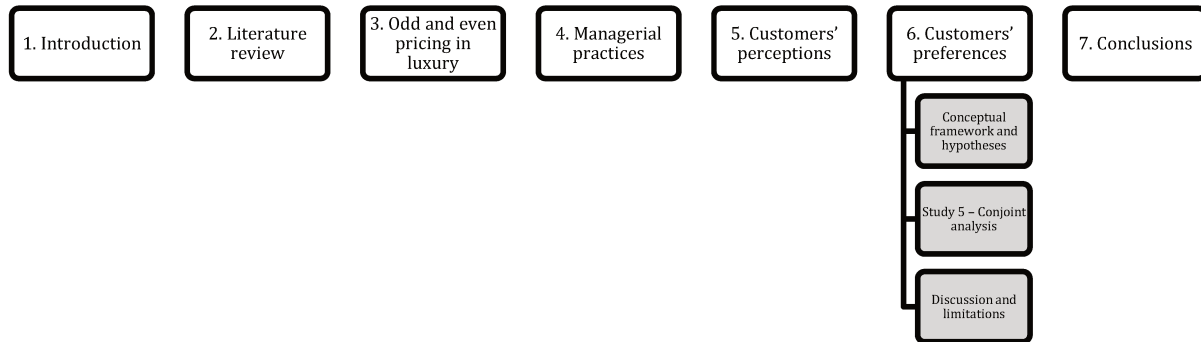
First of all, this research is, to the best of my knowledge, the first to investigate price endings’ perceptions in a non FMCG context and more in particular in a luxury context. No piece of research ever studied whether odd and even prices might have the same connotation in a non-grocery context, so I contribute by putting forward the possibility that, as the context of consumption changes, also connotations of price endings might change along. For example, I find that overall, at an aggregated level, price endings might not have a main effect on price, quality and prestige image, but that for certain consumers, price endings might have the opposite connotation to that they might have elsewhere.

Moreover, I made an attempt to investigate “other” price endings, that in the literature have been ignored, to find that for certain consumers, the fact that the price has been determined in a detailed way, add to the perceived luxurious.

Lastly, I contribute to the literature on luxury by observing that the more an individual is accustomed to luxury, the more demanding she will be in her definition of what “luxury” is in

terms of price. Moreover, I confirm what is implied in all the above-cited literature, that the higher the perceived expensiveness, the higher the perceived quality, the perceived prestige and as a result the higher the perceived brand luxuriousness of the products will be.

Progress – This chapter will deal with point 6.



6. Customers' preferences for price endings

In the previous chapters I showed that odd and even prices can also be found in a luxury context such as that of women luxury handbags, that prices ending in -50 and in “other” endings are also widespread and that price setters seem to follow established patterns for all kinds of price endings. Moreover, I have found that customers' perceptions that odd and even prices typically hold for FMCG might not subsist in a luxury context. After studying customers' perceptions of odd and even prices, it seems important to see whether these perceptions are followed up by real preferences for one or the either kind of price endings. In this section I will study customers' preferences in terms of price endings through the use of a conjoint analysis in collaboration with IFOP.

6.1. Customers' preferences – Hypotheses

From a managerial perspective, it is of little use to study price ending perceptions, if more favorable perceptions do not translate into product preferences and then higher purchase intentions. For this reason, the conceptual framework developed in this section aims at understanding what might drive preferences in terms of price endings. In other words, what are the customer's personal traits and motivations to engage in luxury consumption that push her to prefer an even price? And an odd price?

Following the descriptions of the two conceptual frameworks described in sections 5.1 and 5.2, where I hypothesized how odd and even prices should affect the perceptions of luxury and its different facets, it would be natural to expect most consumers of luxury goods to have similar preferences for even prices over odd prices, although they might be moved by different motivations to engage in luxury consumption. To be clear, given the low-price, low

quality, low-prestige connotations of odd prices and the full-price, high-quality, high-prestige connotations of even prices highlighted in previous literature (Naipaul & Parsa, 2001; Quigley & Notarantonio, 1992; Schindler, Parsa, & Naipaul, 2011; Schindler, 1984, 2001, 2006; Schindler & Kibarian, 2001), one should expect consumers of luxury goods to prefer even prices. This potentially means that, when a customer is exposed to two very similar products, one odd-priced (e.g., 1590€) and the other even-priced (e.g., 1600€), she should prefer the even-priced product because of all the positive connotations this price ending supposedly carries.

In particular, I expected individuals who are high in price-quality schema, i.e., who heavily rely on price as an indicator of quality, to perceive higher quality when exposed to an even price, compared to someone who does not rely on price as an indicator of quality. Also, I expected individuals who heavily rely on price as an indicator of quality to perceive lower quality when exposed to an odd price, compared to someone low in price-quality schema. Because of these hypotheses on quality perceptions, it makes sense to expect individuals who are high in price-quality schema and who supposedly perceive higher quality when exposed to an even price than to an odd price, to prefer an even price. Based on the previous conceptual frameworks, my hypothesis would therefore be as follows:

- Hp₁₄: Individuals high in price quality schema prefer even prices to odd prices.

Similarly, in sections 5.2, I hypothesized that individuals who heavily rely on price as an indicator of prestige should perceive even prices as more prestigious and odd prices as less prestigious than individuals who are low in prestige sensitivity. Because these individuals look for high prices to be reassured about the prestige of the product they buy, it would follow they should prefer an even price, especially if this is higher than the odd price. Also, if individuals who enjoy unique luxury consumption attach a more unique image to even prices and a less unique image to odd-priced products than individuals who would rather conform through luxury consumption, then a higher need for uniqueness should lead the individual to prefer even prices.

- Hp₁₅: Individuals high in prestige sensitivity prefer even prices to odd prices.
- Hp₁₆: Individuals high in need for uniqueness prefer even prices to odd prices.

On the contrary, I would expect individuals low in price-quality schema, low in prestige sensitivity, low in need for uniqueness to be indifferent between odd and even prices, simply because they do not rely much on the price cue.

Preference according to price consciousness. Individuals who enjoy spending money should prefer a price that is perceived as higher, and should not appreciate the fact that the retailer sets prices as if the consumer worried about the last 10 euros to pay. Therefore, consumers who enjoy spending money (i.e., low on the price consciousness scale) should prefer higher even prices. On the contrary, individuals who are price conscious, i.e. consumers who do not enjoy spending money, but might occasionally engage in luxury consumption, although not persuaded that an odd price is a relatively low one because of its low-price connotation, they should still prefer it to a higher even price, simply because it is indeed a bit lower. Moreover, the fact that it is just below a slightly higher round price might make it fall within a price range that they authorized themselves to spend. The hypotheses can therefore be formalized as follows:

- Hp_{17a}: Individuals who enjoy spending money prefer even prices.
- Hp_{17b}: Individuals who are price conscious prefer odd prices.

Preference according to hedonic consumption. We have seen back in the discussion of Chapter 5, how, following the literature, I would expect odd prices to have a negative effect on perceived hedonism compared to even prices, mostly for individuals who engage in luxury consumption for reasons other than search for hedonic benefits, because individuals who buy luxury mainly for its hedonic benefits should pay little to no attention to the price cue (Vigneron & Johnson, 1999; Wakefield & Inman, 2003). This negative effect would be justified by the fact that an odd price is atypical of a luxury context and would therefore attract the customer's attention to the price cue, which is rational and objective, as opposed to hedonic attributes, such design, how the material feels when touched, the emotions it evokes, etc. Attracting customers' attention to a rational cue would reduce perceived hedonism (Schwarz & Clore, 1983, in Fiedler & Forgas, 1988). Individuals who mainly buy luxury for its hedonic attributes, should pay less attention to the price cue, so they should be less affected by this negative impact on perceived hedonism, but using an odd price might be a way to also attract their attention to the price cue. Both individuals who search for hedonic properties in luxury consumptions and those who mainly look for other benefits should prefer even prices to odd prices, although the latter could have a stronger preference for even prices, because they pay more attention to price.

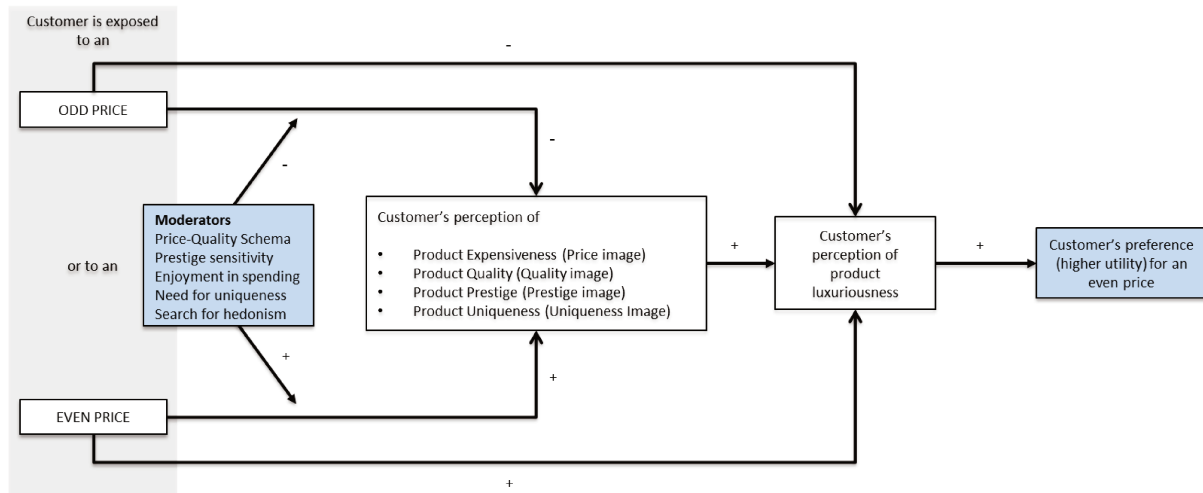
- Hp₁₈: Both individuals who purchase luxury products for hedonic consumption and those who purchase for other benefits should prefer even prices.

Preference according to appreciation of ostentatious products. Lastly, I would like to test whether individuals who prefer products that prominently show off their logo also prefer odd prices. There is no particular theoretical relationship between odd pricing and brand prominence, other than that both odd prices and prominent logos are mostly applied to less expensive products. However, given the predominance of odd prices among prominent handbags, as showed in Chapter 4, it seems essential to understand whether consumers who appreciate brand prominence also appreciate odd prices.

- Hp₁₉: Individuals who prefer prominent handbags prefer odd prices.

Therefore, based on the conceptual framework developed for customers' perceptions of price endings, I would expect consumers of luxury goods to prefer even prices, regardless of their prevalent motivation to engage in luxury consumption. In other words, I could expect even prices' favorable perceptions to be reflected in individuals' preferences when confronted with a choice among several similar products, at the same price level, but with different price endings. The only exception would be that of consumers preferring prominent logos, who, given current practices, might prefer odd prices (omitted in the conceptual framework). The hypothesized preferences are presented in the following conceptual framework (Figure 35).

Figure 35 – Conceptual framework for expected price endings' preferences, as a completion of previous conceptual frameworks



However, we saw in Chapter 5 how in general hypotheses on customers' stronger perceptions of quality, prestige and luxuriousness after being exposed to an even price were not confirmed. On the contrary, some results seem to point out that, in a luxury context, odd and even prices might have different connotations from those they have in a FMCG one, i.e. by

some consumers, odd prices are perceived as more prestigious, more expensive, more luxurious than other prices.

From a theoretical point of view, we are led to believe that most consumers of luxury goods should prefer even prices, but given the first empirical findings, we cannot exclude that they will prefer odd prices instead. For example, given that occasional and assiduous consumers of luxury goods tend to perceive higher prestige, higher quality, higher luxuriousness, etc., when exposed to an odd price, they might prefer odd prices instead.

At this point of the research, it therefore seems more appropriate to adopt an exploratory approach that will allow me to identify determinants of preferences for a type of price ending or the other.

6.2. Conjoint analysis

The fifth and last study I have conducted is a conjoint analysis that I have developed jointly with IFOP³⁶, starting in September 2015. Because of IFOP's expertise in conducting conjoint analyses and market research studies, it was felt that my research could benefit from a collaboration with them.

6.2.1. Methodology

In this section I will present the adopted methodology, the questionnaire accompanying the conjoint analysis (which you can also find in Appendix 4), the choice-based conjoint task itself.

Why a conjoint analysis? After studying customers' perceptions of odd and even prices, it seems important to see whether these perceptions are followed up by real preferences for one or the other kind of price endings. Conjoint analysis is a method that has already been used several times in the investigation of customers' preferences for odd and even prices in a non-luxury context. As we have seen in section 2.1.3, for example Gendall et al. (1998) conducted a conjoint analysis with 3 product categories, for each of which three brands with 5 price endings were presented (two odd prices at -95 and -99, 1 even price and 2 filler items) in 18 choice sets per category. Similarly, Baumgartner & Steiner (2007) also conducted a conjoint analysis with 5 price endings and 3 brand names for two product categories (i.e., chocolate and personal computers).

³⁶ http://ifop.fr/?option=com_homepage

While choosing between several options, consumers typically make trade-offs among the attributes of a product. Conjoint analysis is a set of techniques ideally suited to studying customers' choice processes and determining trade-offs (Rao, 2014 in Winer & Neslin, 2014). Choice-Based Conjoint analysis is the most widely used type of conjoint analysis because the simulated task is similar to what buyers actually do in the marketplace³⁷ (Voleti, Srinivasan, & Ghosh, 2017).

The output of a CBC. The output of a CBC is a database, with individual-respondent information, including the individual part-worth utilities for each modality of each variable. A utility is a number representing the attractiveness of each feature in a conjoint study. Individual utilities are helpful because they allow for easy segmentation and they provide a way to detect different groups within the sample (Howell, 2009). In order to calculate individual utilities a Hierarchical Bayes algorithm estimates the average utilities for the entire sample and then uses the respondent's individual data to determine how each respondent differs from the sample averages (Howell, 2009). They are calculated so that within each variable, the sum of the utilities of all modalities for each individual is zero. A negative value of the utility for one modality of a variable does not mean that the respondent disliked that modality, but that the modality is appreciated less, for example, than a modality with a positive utility. Part-worth utilities are interval data, so addition and subtraction are permitted, but ratio of different utilities calculated across attributes or across individuals are not meaningful: part-worth utilities are not ratio data. An important assumption that we make when estimating utilities is that each choice task is evaluated independently: we assume that respondents have "no memory" about previous choice tasks they answered. Another way of looking at this is that a respondent would have answered each choice task exactly the same way if the choices were presented in a different order (Howell, 2009).

How was the CBC conducted? The conjoint analysis task was accompanied by a questionnaire similar to those that completed the two experiments that I have previously presented. Please refer to Appendix 4 for the complete questionnaire in English. The link was available also in French.

³⁷ The CBC System for Choice-Based Conjoint Analysis - Sawtooth Software – Technical Paper Series – Version 8 – Copyright Sawtooth Software, Inc. Orem, Utah USA, February 2013

An email was sent to 11826 people who are part of an alumni association of a major business school in Paris that gathers female graduates of the school³⁸. Since I decided to study women handbags, it made sense that the interviewed sample would be constituted by women only, although the association's membership is not precluded to men, so it is possible that some men also received the link to the questionnaire. This is why, a question on gender was included at the end of the study. The email was sent with a short introduction, both in French and in English, which explained that the questionnaire was about luxury handbags and that all answers would be treated as completely anonymous for statistical purposes only. The introductory mail also explained that the study was conducted in partnership with IFOP and it reassured respondents that their data would not be shared with third parties. The email then included a link to both the French and the English version of the questionnaire, giving the participant the chance to choose the language they felt most comfortable with. Respondents were then thanked for their participation in advance and it was explained that the results of the research would be presented through the alumni association for those that were interested.

The questionnaire was originally developed in English and then translated in French by a French native speaker. Possible discrepancies in meaning were identified and fixed by a second French native speaker.

The questionnaire started with several questions that aimed at establishing if the respondent was a consumer of luxury goods or not. Even when the respondent would indicate that they had bought 0 luxury products over the previous 24 months in Question 1, they were still able to complete the rest of the questionnaire, but they would be redirected to the beginning of the conjoint analysis task, skipping therefore all additional filter questions on luxury products bought over the past 24 months. For those respondents who, on the contrary, answered that they had bought certain luxury products among handbags, ready to wear, shoes, accessories, jewelry and watches they would have to indicate the brand and the amount spent for each of the mentioned product categories (questions from Q2A to Q7B). Similarly to what I did for the second experiment, all conjoint analysis data have been analyzed, even for respondents who indicated that they had not recently bought any luxury product: the amount of products bought and of money spent has been used to create different profiles of luxury consumers, together with the traits that I later measured in Q10.

³⁸ ESCP Europe Au Féminin

The respondents were then presented with the choice-based conjoint task (CBC), which was introduced with the following paragraph:

“Please imagine that you have to purchase a handbag for yourself or to offer as a gift.

Now, you will see several screens with different handbags at different prices. The price for each handbag is indicated above the handbag. The handbags would be available in different colors.

For each screen, please indicate which handbag you prefer and if you would buy it or not. Please take into account the different types of bags and their prices when you make your choice.”

Despite warning respondents that they would have to choose repeatedly on several screens (15 in total), I received a few complaints saying that it was not possible to complete the questionnaire because it was stuck and it kept showing the same bags over and over again. This is clearly one limitation of the study and of conjoint analysis in general.

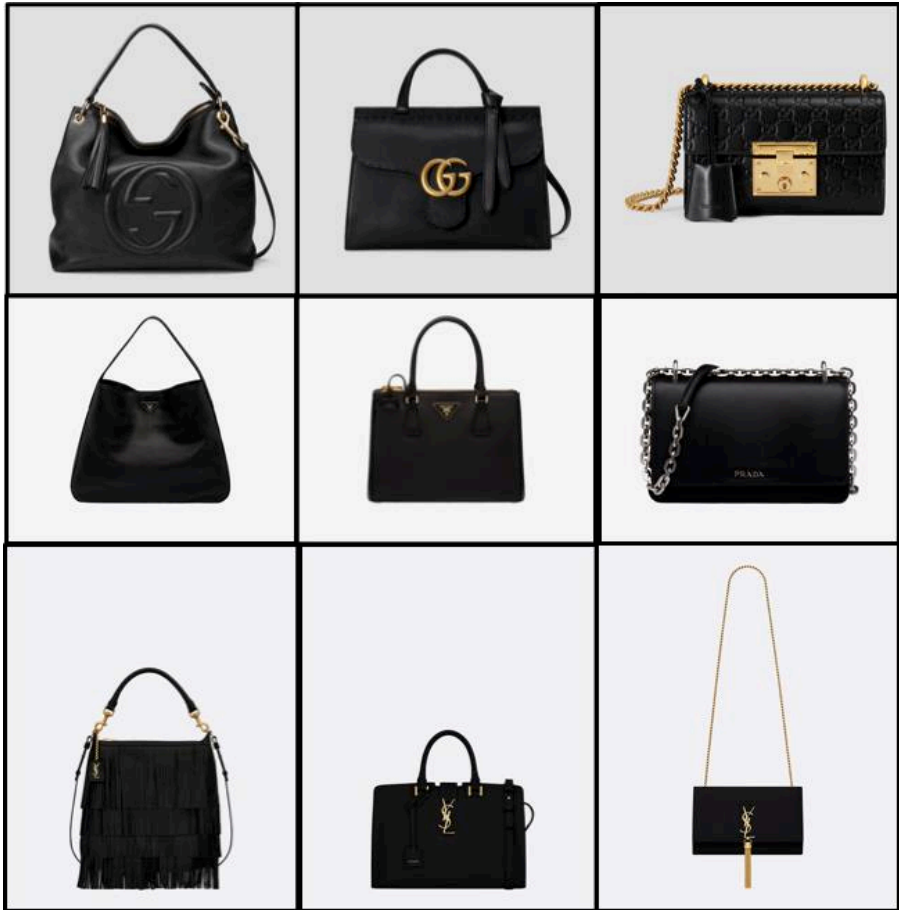
The conjoint analysis was developed with two variables: one was the price ending (trying to keep the price level unchanged as much as possible) and the other was the brand, with each brand being represented by three handbags for a total of 9 modalities. Screens showing random combinations of 3 products with 3 random prices were proposed 15 times to the respondents, who had to choose 15 times which handbag they preferred (given both the product attributes and their prices) and whether they would buy their preferred choice for themselves or as a gift. Given the conjoint analysis design, IFOP estimated that at least 300 completed questionnaires would be needed to have significant results, i.e., a response rate of 2.5%, which was attained.

The three brands included in the study are Gucci, Prada and Yves Saint Laurent, because according to IFOP these three brands are comparable in terms of brand image. Louis Vuitton is not included because of their current attempt to reposition the brand towards a higher-end, which makes it difficult to compare it to Gucci, Prada and YVS. At the same time, despite its repositioning efforts, Louis Vuitton is still not perceived as high end as Hermès or Chanel, for example.

The price variable had 4 modalities: 1600 € (even price), 1595 € (odd price), 1560 € and 1640 € (control prices / filler items). The price endings were chosen based on the study conducted by Baumgartner & Steiner (2007) who also conducted a conjoint analysis and who also investigated a relatively high-priced item at around 1200 €. The price level was decided based

on the average price for the three brands in the women handbag category, but also to make sure that the original price observed on brands' websites would not be too low or too high compared to the price used in the conjoint analysis, as respondents might otherwise have considered prices as not realistic. Moreover, I tried to choose handbags that were somehow comparable in terms of size, color and design, not to introduce another variable in the analysis, which would have implied collecting more than 300 answers. Of course, each bag is unique in itself, so similarities are subjective. Please refer to Figure 36 for the 9 pictures of the handbags included in the study.

Figure 36 - Showing Gucci (first row), Prada (second row) and YSL (third row) handbags



The pictures of the handbags were taken from the brands' websites to obtain the highest quality images possible. However, this meant that the pictures would differ in terms of definition, scale and sometimes angle.

Q10 was a battery of items (similar to those used in the experiments) that allowed me to measure certain personal traits and motivations to engage in luxury consumption. These items will be later used to create a segmentation of respondents and draw profiles to see whether

different types of consumers have different preferences for odd, even or control prices. The items used in this question were mainly taken from the previous questionnaires since the data I analyzed showed good model fit. Some new items were introduced to measure search for hedonism or to improve problematic scales in the previous questionnaires. Please refer to Table 97 for the complete list of items used to measure the intended 6 constructs. Overall, 20 items were included in the questionnaire and they were all measured on 10-point Likert scale.

Table 97 – List of items accompanying the conjoint analysis to measure respondents’ traits

Preference for Uniqueness vs Conformity
I like to buy luxury products that are different from those I see on other people.
I enjoy seeing that other people in the streets have the same luxury product as me.
When I shop for luxury products, I am usually more attracted by limited editions.
When I shop for luxury products, I am usually more interested in the best sellers of a brand.
It is more enjoyable to own a luxury product that nobody else owns.
Preference for loud vs quiet luxury products
Luxury products are more appealing to me when they have a big, visible logo.
I prefer luxury products that do not show their brands.
A luxury product's brands should easily be identifiable by everyone.
Importance of luxury as a status symbol
Owning luxury products is a good way to show others your status.
It is appealing to own luxury because it shows that you are part of an élite.
I like to own luxury products, because it allows me to show a certain social standing.
Preference for hedonic properties of luxury
For me, owning a luxury product is above all about sensorial gratification and pleasure.
The aesthetics of a luxury product are just as important as its functionality.
What makes a luxury product special is, before everything else, the emotions it arouses.
Price-quality schema
If I could not make up my mind between two luxury products, I would go for the one with the higher price so that I am sure of its higher quality.
The price of a luxury product is a good indicator of its quality.
Generally speaking, the higher the price of a luxury product, the higher its quality.
Enjoyment in spending money
The more a luxury product is expensive, the more it is desirable.
Buying a luxury product that is very expensive makes me happy.
It is enjoyable to spend a lot of money.

Questions 11 to 13 were introduced to measure brand perceptions, since in the first experiment I conducted I found that brand liking would explain most of the variance in the perceived luxuriousness dependent variable. Q11 therefore was aimed at measuring the opinion (low vs. high) that the respondent has of the three brands; Q12 measured whether the respondent would like to wear the brand; Q13 consisted in another battery of items to measure different facets of the luxury perception, adapting the BLI of Vigneron & Johnson (2004) to a much shorter version as these items will only be treated as control variables. The items included in question 13 were therefore as follows:

This brand is...

- Noticeable, to measure Conspicuousness;
- Unique, to measure Uniqueness;
- Of exceptional quality, to measure Quality;
- Tasteful, to measure Hedonism;
- Rewarding, to measure Extended Self;
- Luxurious, to measure overall Luxuriousness;
- Affordable, to measure Price image, although this is not part of the original BLI.

The fact that brand perceptions and personal traits are measured after the conjoint analysis, i.e., after that the respondents have already been exposed to the stimuli, is not ideal because perceptions and personal traits might have been biased by the conjoint analysis task. However, given the important length of the whole questionnaire, it was felt that it was necessary to keep the number of questions before the conjoint analysis to a minimum, so that if the respondent abandoned after the conjoint analysis, I would still be able to measure their preferences and I would lose relatively less important information.

The study ended with a standard list of questions on demographics, such as gender, current working situation, occupation, age, monthly income, level of education and country of residence.

IFOP has exclusive access to the server that hosts the data collected. The data were therefore handed over with individual utilities already computed and scaled to sum to a constant of 0 within each attribute.

6.2.2. Study 5 – Data analysis

6.2.2.1. Sample description

340 alumni out of the 11.826 who received the email containing the link to the study completed both the questionnaire and the CBC task. This constitutes a response rate of 2,9%, which lies within the expected response rate range that IFOP had estimated before running the study (i.e., between 2,5 and 3%). All respondents who completed the study are female, 40% of them between the age of 25 and 34, 43,5% between the age of 35 and 49 and 15% between 50 and 64. Only 13 respondents did not indicate what their profession is, while the vast majority declared to be at a senior executive level in a company or to have a liberal profession

(96%). 44% of respondents are resident in France and 44% in Italy, so I can assume that the majority of the sample is familiar with prices in euros, which have been used in the conjoint analysis. 136 respondents (40%) did not buy any luxury product over the previous 24 months, while the remaining 60% of respondents bought luxury products from an average of 2,3 product categories. The higher the declared household monthly income, the higher the number of product categories the respondents purchased from. Please refer to Appendix 4.1.1. for a more detailed description of the sample's demographics.

There are two big improvements compared to the two experiments (Study 3 and 4): the first is that all respondents are female, so I do not have to worry about gender-dependent variance in the results and the second is that there are no students in the sample, so, at least potentially, all respondents belong to the target population, and 60% of the sample have bought at least a luxury product over the previous 24 months.

6.2.2.2. Customers' preferences – aggregated results

The first step was to look at the sample-aggregated utilities and the second was to identify possible segments of consumers to see if each type of respondents might have a specific preference for one price ending or the other. The price attribute has an average importance weight of just 5%, while the combined attribute brand/model accounts for 95% of the choice. This low level of importance of the price attribute is mainly due to the fact that the four price modalities tested in the conjoint analysis cover a very narrow range (i.e., from 1560 to 1640 there is only a 80-euro difference, which in percentage terms with the respect to the lowest price is just above a 5% difference). As Orme (2010) points out, the narrower the range of an attribute, the lowest the importance of that attribute is compared to other attributes. Also, Bastien & Kapferer (2012) suggest that price differences in luxury need to be of at least 30% to be perceptible, let alone to have an impact on purchase intention. Moreover, since in this case, we are dealing with a simulated choice and not a real purchase, it is normal that such small differences in price might not be perceived, since the respondent does not really have to pay the price and might therefore pay little attention to it, when choosing their preferred option 15 times.

Table 98 – Descriptive statistics for price endings’ utilities

	Mean	Std. Deviation	N
1560	1,241	4,587	340
1595	1,957	3,909	340
1600	-0,458	4,671	340
1640	-2,740	4,256	340

The average utility is higher for the price ending in -95 (i.e. 1595), compared to all other price endings. The highest price with a price ending of -40 has the lowest utility among the 4. 39,7% of the sample finds the highest utility³⁹ in the odd price (i.e., 1595), while 30,3% in the lowest price (i.e., 1560), 20,9% in the even price (i.e., 1600) and only 9,1% in the highest price (i.e., 1640). Thus, *the odd price has on average the highest utility and it is also the price that most often has the highest utility among the four options.*

In order to assess whether the four price endings have significantly different utilities it is necessary to run a repeated-measure ANOVA.

Table 99 - Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon ^b		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Utility	,932	23,959	5	,000	,957	,966	,333

The F-statistic of the repeated-measure ANOVA is reliable only under the assumption of sphericity⁴⁰. To assume sphericity, Mauchly’s test should be non-significant. In this case, as we can see in Table 99, the test is highly significant, so the assumption of sphericity has been violated. However, Greenhouse-Geisser and Huynh-Feldt estimates, which are used to account for this violation, are very close to the upper limit of 1, so the data do not deviate substantially from sphericity. To assess significantly different means, we look at a distribution given by a number of degrees of freedom, which has been corrected by either the Greenhouse-Geisser (often considered too conservative) or the Huynh-Feldt estimates (Field, 2013).

³⁹ By highest utility, here, I mean that among the four utilities calculated to sum up to zero, I take the one with the highest value, even if the difference with the second highest utility might be very small.

⁴⁰ Sphericity is a form of compound symmetry which assumes that the variances of the differences between data taken from the same participant are equal. If the data are perfectly spherical the estimates of Greenhouse-Geisser and Huynh-Feldt would be 1. The closer these two estimates are to the lower bound the greater the deviation from sphericity (Field, 2013).

Table 100 - Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Utility	Sphericity Assumed	4449,898	3	1483,299	58,354	,000
	Greenhouse-Geisser	4449,898	2,872	1549,264	58,354	,000
	Huynh-Feldt	4449,898	2,899	1534,763	58,354	,000
	Lower-bound	4449,898	1,000	4449,898	58,354	,000
Error(Utility)	Sphericity Assumed	25850,975	1017	25,419		
	Greenhouse-Geisser	25850,975	973,698	26,549		
	Huynh-Feldt	25850,975	982,898	26,301		
	Lower-bound	25850,975	339,000	76,257		

The means are significantly different even when looking at the distribution with a number of degrees of freedom corrected for the Huynh-Feldt estimate. The next step is to look at contrasts to see which price ending utility differs significantly from any other. Already looking at the means plot in Figure 37 below, we see that the difference in utility between the price ending in -95 and the higher price ending in -40 is more important than the difference in utility between the price ending in -95 and the lower price ending in -60. So, we can assume that the former contrast will be significant, while the latter might not be.

In Table 101 below, we see the pairwise comparisons of all possible pairs of utilities. As we could have guessed by looking at the means plot in Figure 37, the average utility for the price ending in -60 (i.e., 1560) does not differ significantly from the average utility of the price ending in -95. The odd price is significantly preferred to 1600 and 1640, and so is 1560. However, the sample more or less attributes the same utility to 1560 and 1595. Also, we observe how 1600 has a significantly higher utility than 1640. To sum up, 1595 is the preferred price, closely followed by 1560. Both 1595 and 1560 are significantly better than 1600 and 1640; 1600 is also significantly better than 1640. On average, 1595 has the same utility as 1560, which means that even being 35 euros higher, it is as good as the lower price 1560 and that a difference of only 5 euros between 1600 and 1595 impacts significantly customers' preferences.

Figure 37 – Means plot of price endings’ utilities

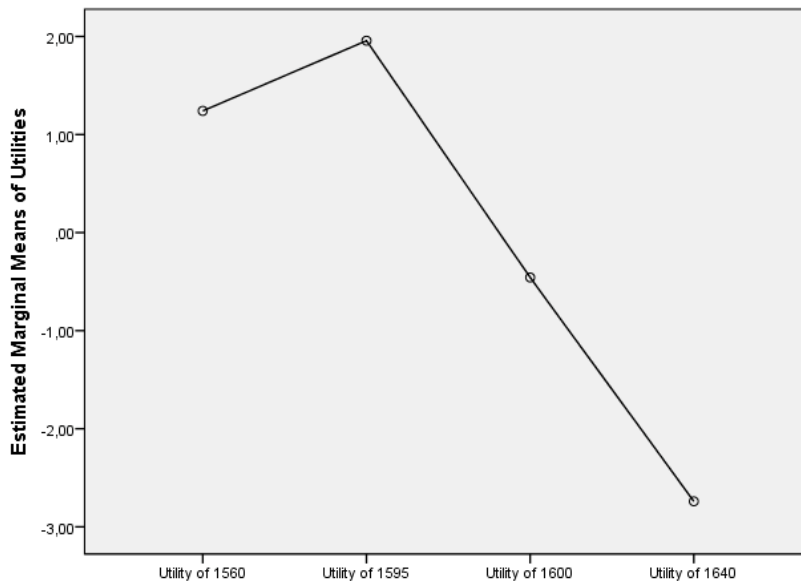


Table 101 - Pairwise Comparisons - Adjustment for multiple comparisons: Bonferroni.

(I) Utility	(J) Utility	Mean Difference (I-J)	Std. Error	Sig. ^b	95% Confidence Interval for Difference ^b	
					Lower Bound	Upper Bound
1560	1595	-,716	,389	,401	-1,749	,317
	1600	1,699	,419	,000	,586	2,811
	1640	3,981*	,380	,000	2,972	4,990
1595	1560	,716	,389	,401	-,317	1,749
	1600	2,414	,364	,000	1,448	3,380
	1640	4,697*	,346	,000	3,778	5,617
1600	1560	-1,699	,419	,000	-2,811	-,586
	1595	-2,414	,364	,000	-3,380	-1,448
	1640	2,283	,416	,000	1,180	3,386
1640	1560	-3,981	,380	,000	-4,990	-2,972
	1595	-4,697	,346	,000	-5,617	-3,778
	1600	-2,283	,416	,000	-3,386	-1,180

6.2.2.3. Demographics and price endings preferences

When looking at the demographic profile of the respondents who have the highest utility⁴¹ for one price or the other, there are no variables whose distribution is dependent on the distribution of preferences. This means that, regardless of the price ending preference, we always observe the same proportion of respondents who are Master- or MBA- educated, the

⁴¹Again, here, I simply consider the highest utility, the utility that has the highest value.

same proportion of respondents for each income range, etc. as I observe in the total sample average. In general, when running crosstabulations with χ^2 tests, demographic variables are not related to price ending preferences.

The only exception I find is that of age (Table 102):

- Respondents who are younger tend to prefer the lowest price available and dislike the rest. There are only 5 respondents in this age group, so interpretation of the expected count vs. the observed count is not really meaningful. However, please notice that, although SPSS suggests accepting a maximum of 20% of cells with expected count <5 and here we have 31,3%, running the same χ^2 test, excluding the 18-24 age group does not impact in any way the results of the test;
- Respondents between 25 and 34 years of age prefer 1600 and dislike 1595 and 1640;
- Respondents between 35 and 49 prefer 1560 and dislike 1600;
- Respondents between 50 and 64 tend to prefer the odd price and 1640, while they dislike 1560 and 1600.

Table 102 – Crosstabulation of two categorical variables: highest utility for a price (i.e., preference for a price, columns) and age groups (rows)⁴².

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25,188 ^a	9	,003
Likelihood Ratio	25,622	9	,002
N of Valid Cases	340		

a. 5 cells (31,3%) have expected count less than 5. The minimum expected count is ,46. including the age groups 18-24 with a count of 5 does not have an impact on the validity of the results.

⁴² Please find in green cells where the observed count is greater than the expected count, therefore indicating an “overrepresentation” of the preference for that price in that age group, and in red cells where the observed count is lower than the expected count, therefore indicating an underrepresentation of the preference for that price in the age group. The cells whose observed and expected counts more or less coincide are highlighted in yellow.

Table 102 (continued)

		Preference for a price ending				Total
		Highest utility for 1560	Highest utility for 1595	Highest utility for 1600	Highest utility for 1640	
Age 18 - 24	Count	4	1	0	0	5
	Expected Count	1,5	2,0	1,0	,5	5,0
	% within Age	80,0%	20,0%	0,0%	0,0%	100,0%
25 - 34	Count	42	45	40	9	136
	Expected Count	41,2	54,0	28,4	12,4	136,0
	% within Age	30,9%	33,1%	29,4%	6,6%	100,0%
35 - 49	Count	49	60	24	15	148
	Expected Count	44,8	58,8	30,9	13,5	148,0
	% within Age	33,1%	40,5%	16,2%	10,1%	100,0%
50 - 64	Count	8	29	7	7	51
	Expected Count	15,5	20,3	10,7	4,7	51,0
	% within Age	15,7%	56,9%	13,7%	13,7%	100,0%
Total	Count	103	135	71	31	340
	Expected Count	103,0	135,0	71,0	31,0	340,0
	% within Age	30,3%	39,7%	20,9%	9,1%	100,0%

While younger respondents might prefer the cheapest price due to financial constraints, we might assume that older respondents prefer odd prices because of more limited cognitive capacities to process the price (as hypothesized by Macé, 2012) or simply because they might pay less attention to it and they therefore believe that the odd price is lower because they truncate it, or they might process it correctly but attach a positive connotation to it. Also, they might appreciate 1640 (slightly) more than expected, because they have the financial resources to acquire more expensive goods.

Table 103 – Crosstabulation of age vs. brand preference⁴².

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30,980 ^a	6	,000
Likelihood Ratio	34,172	6	,000
N of Valid Cases	340		

a. 3 cells (25,0%) have expected count less than 5. The minimum expected count is ,56. Also in this case, including the age groups 18-24 with a count of 5 does not have an impact on the validity of the results.

Table 103 (continued)

Preference for a brand		Age				Total
		18 - 24	25 - 34	35 - 49	50 - 64	
Gucci	Count	0	6	22	10	38
	Expected Count	,6	15,2	16,5	5,7	38,0
	% within pref_marca_coded	0,0%	15,8%	57,9%	26,3%	100,0%
Prada	Count	0	51	70	28	149
	Expected Count	2,2	59,6	64,9	22,4	149,0
	% within pref_marca_coded	0,0%	34,2%	47,0%	18,8%	100,0%
YSL	Count	5	79	56	13	153
	Expected Count	2,3	61,2	66,6	23,0	153,0
	% within pref_marca_coded	3,3%	51,6%	36,6%	8,5%	100,0%
Total	Count	5	136	148	51	340
	Expected Count	5,0	136,0	148,0	51,0	340,0
	% within pref_marca_coded	1,5%	40,0%	43,5%	15,0%	100,0%

It is otherwise plausible that different age groups like different brands, as shown in Table 103, and being the price ending a part of the positioning of the brand, respondents who prefer a given brand might have preference for a price ending associated with it. This would be surprising, given that respondents who prefer YSL prefer the even price and YSL is the brand that, by far among the three, uses odd prices the most⁴³ for the handbag product category. Other than these possible explanations, to the best of my knowledge, there are no other apparent theoretical justifications for this significant relationship between preference for a price ending and age.

Moreover, when running a one-way ANOVA with the preference for price ending as fixed factor (sig. 0,045), I find that respondents who have the highest utility for 1595 are on average those who have spent the most on luxury (i.e., 3628 €, although this amount is only slightly greater than that of respondents who prefer 1600, i.e., 3601; this pairwise comparison is marginally significant with $p=0,06$ in Games-Howell post-hoc tests), although, as we see later in Appendix 4.1.3 (Table 44), the amount spent on luxury products over the previous 24 months is not significantly correlated to the utility of 1595, or to the utility of any other price ending tested in the conjoint analysis.

⁴³ <http://www.ysl.com/fr/shop-product/femme/sacs>

Table 104 – Crosstabulation of highest brand utility vs. highest price ending utility⁴².

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	48,341 ^a	6	,000
Likelihood Ratio	54,384	6	,000
N of Valid Cases	340		

a. 1 cells (8,3%) have expected count less than 5. The minimum expected count is 3,46.

Preference for a brand		Preference for a price ending				Total
		Highest utility for 1560	Highest utility for 1595	Highest utility for 1600	Highest utility for 1640	
Gucci	Count	2	24	9	3	38
	Expected Count	11,5	15,1	7,9	3,5	38,0
	% within brand preference	5,3%	63,2%	23,7%	7,9%	100,0%
Prada	Count	52	59	14	24	149
	Expected Count	45,1	59,2	31,1	13,6	149,0
	% within brand preference	34,9%	39,6%	9,4%	16,1%	100,0%
YSL	Count	49	52	48	4	153
	Expected Count	46,4	60,8	32,0	14,0	153,0
	% within brand preference	32,0%	34,0%	31,4%	2,6%	100,0%
Total	Count	103	135	71	31	340
	Expected Count	103,0	135,0	71,0	31,0	340,0
	% within brand preference	30,3%	39,7%	20,9%	9,1%	100,0%

In Table 104, we can observe the crosstabulation of highest utility per price ending vs. highest utility per brand⁴⁴. As we can see, respondents who find the highest utility in Gucci handbags prefer 1595 to all other prices; respondents who prefer Prada prefer prices in -60 and in -40, (i.e., the lowest and the highest price available); lastly, respondents who prefer YSL prefer 1600 euros.

In Table 105, we observe that respondents who prefer large handbags prefer 1595 euros, those who prefer medium handbags have a very slight preference for 1560 and 1595 euros, while those who prefer small handbags clearly prefer 1600 euros. By looking at the crosstabulation of size preference vs. brand preference in Table 106, we also know that individuals who prefer Gucci also prefer large bags, those who prefer Prada seem to prefer large and medium bags, while those who prefer YSL prefer small bags (χ^2 test is significant at 0,01 level).

⁴⁴ To be sure that the highest utility per brand is a reliable measure of the respondent's preference for a brand or the other, I ran one-way ANOVAs to test whether the overall opinion of a brand (i.e., the adapted scale from the Brand Luxury Index by Vigneron & Johnson, 2004, weighted with overall brand's opinion and respondent's judgement on whether they would be likely to wear it) is indeed significantly higher for respondents who have the highest utility for that brand. Please refer to Appendix 4.1.2.

Table 105 – Crosstabulation of price ending preference vs. size preference⁴².

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	37,555 ^a	6	,000
Likelihood Ratio	34,281	6	,000
N of Valid Cases	340		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 5,74.

Preference for a size		Preference for a price ending				Total
		Highest utility for 1560	Highest utility for 1595	Highest utility for 1600	Highest utility for 1640	
Large	Count	30	49	12	12	103
	Expected Count	31,2	40,9	21,5	9,4	103,0
	% within pref_size_coded	29,1%	47,6%	11,7%	11,7%	100,0%
Medium	Count	56	72	29	17	174
	Expected Count	52,7	69,1	36,3	15,9	174,0
	% within pref_size_coded	32,2%	41,4%	16,7%	9,8%	100,0%
Small	Count	17	14	30	2	63
	Expected Count	19,1	25,0	13,2	5,7	63,0
	% within pref_size_coded	27,0%	22,2%	47,6%	3,2%	100,0%
Total	Count	103	135	71	31	340
	Expected Count	103,0	135,0	71,0	31,0	340,0
	% within pref_size_coded	30,3%	39,7%	20,9%	9,1%	100,0%

Table 106 – Crosstabulation of brand vs size preference⁴².

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17,083 ^a	4	,002
Likelihood Ratio	17,069	4	,002
N of Valid Cases	340		

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 7,04.

Preference for a brand		Preference for a size			Total
		Large	Medium	Small	
Gucci	Count	16	17	5	38
	Expected Count	11,5	19,4	7,0	38,0
	% within brand preference	42,1%	44,7%	13,2%	100,0%
Prada	Count	49	84	16	149
	Expected Count	45,1	76,3	27,6	149,0
	% within brand preference	32,9%	56,4%	10,7%	100,0%
YSL	Count	38	73	42	153
	Expected Count	46,4	78,3	28,4	153,0
	% within brand preference	24,8%	47,7%	27,5%	100,0%
Total	Count	103	174	63	340
	Expected Count	103,0	174,0	63,0	340,0
	% within brand preference	30,3%	51,2%	18,5%	100,0%

6.2.2.1. Personal traits and motivations to engage in luxury consumption

The relationships between variables highlighted by the crosstabulations and the respective significant χ^2 tests are also confirmed by Pearson correlations between the variables, as I later show. Before displaying the pairwise correlations between utilities and other relevant variables, I need to reduce the 20 items used to measure personal traits and motivations to engage in luxury consumption to underlying factors, as I previously did for the two experimentations.

6.2.2.1.1. EFA

Like I did for Studies 3 and 4, also for the questionnaire accompanying the conjoint analysis I ran an Exploratory Factor Analysis (EFA) followed by a Confirmatory Factor Analysis (CFA). Also, similarly to previous analyses, I followed the procedure suggested by Field (2013), i.e., I ran a principal axis factoring analysis with Varimax rotation. After excluding some items that had cross-loadings and caused multicollinearity issues or items that did not load on any factor, I obtained the five factors illustrated in Table 107. Since there are no correlation coefficients $> 0,8$ in the correlation matrix and since its determinant is equal to 0,04 (i.e., well above the suggested threshold of 0,0001), I can assume that there is no issue of multicollinearity among the remaining 16 items. KMO measure of sampling adequacy is $>0,8$ (i.e., meritorious according to Kaiser, 1974) and Barlett's test is significant at 0,01 level. Individual KMOs are all well above 0,5. Moreover, the 5 resulting factors explain 52% of the variance, are interpretable and consistent with the latent variables I originally wanted to measure.

Factor 1 includes all items that indicate that for the respondent it is important that a luxury product is a status symbol and items that indicate the respondent's enjoyment in spending money. I mistakenly imagined that enjoyment in spending money would be a separate construct, but the importance of luxury as a status symbol and the pleasure taken in spending large amounts of money are actually strongly correlated and seem to be the expression of the same trait/motivation to engage in luxury consumption. Factor 2, includes items indicating whether the respondent prefers to stand out thanks to her consumption (i.e., need for uniqueness for high values of Factor 2) or she prefers to conform to what others do (i.e. need for conformity for low values of Factor 2). Factor 3 includes items indicating that the respondent relies on price as an indicator of quality: for high values of this factor, the respondent believes that, even within luxury, the higher the price, the higher the quality of the

product. Factor 4 includes items indicating that the respondent looks for hedonic benefits in luxury consumption. Factor 5 includes items concerning respondents' preference for prominent/loud products (high values of the Factor) or for discreet/quiet products (low values of the Factor).

Table 107 – Exploratory factor analysis; Principal Axis factoring with Varimax rotation; Rotation converged in 6 iterations.

	Factor				
	1	2	3	4	5
Status_3 I like to own luxury products, because it allows me to show a certain social standing.	0,834				
Status_2 It is appealing to own luxury because it shows that you are part of an élite.	0,750				
Status_1 Owning luxury products is a good way to show others your status.	0,618				
Spendthrift_2 Buying a luxury product that is very expensive can make you happy.	0,460				
Spendthrift_1 The more a luxury product is expensive, the more it is desirable.	0,435				
Spendthrift_3 It is enjoyable to spend money.	0,426				
Uniqueness_1 I like to buy luxury products that are different from those I see on other people.		0,784			
Uniqueness_3 It is more enjoyable to own a luxury product that nobody else owns.		0,756			
Uniqueness_2 When I shop for luxury products, I am usually more attracted by limited editions.		0,572			
Price Quality Schema_3 Generally speaking, the higher the price of a luxury product, the higher its quality.			0,822		
Price Quality Schema_2 The price of a luxury product is a good indicator of its quality.			0,744		
Price Quality Schema_1 If I could not make up my mind between two luxury products, I would go for the one with the higher price so that I am sure of its higher quality.			0,456		
Hedonism_1 For me, owning a luxury product is above all about sensorial gratification and pleasure.				0,743	
Hedonism_3 What makes a luxury product special is, before everything else, the emotions it arouses.				0,665	
Brandprominence_1 Luxury products are more appealing to me when they have a big, visible logo.					0,853
Brandprominence_2 I prefer luxury products that do not show their brands. ⁴⁵					0,429

6.2.2.1.2. CFA

In order to assess convergent and discriminant validity, I ran a CFA in Amos SPSS. This led me to exclude one more item (Spendthrift_3 It is enjoyable to spend money) which made the model fit worse, to obtain the resulting path diagram showed in Figure 38.

The path diagram in Figure 38 has good model fit: all statistics (Table 108) and tests confirm both convergent and discriminant validity. The only problematic factor could be Factor 5 on Preference for brand prominence, whose Average Variance Explained (AVE) is <0,5. However, the factor is already reduced to its minimum, given that it only includes two items,

⁴⁵ This item has been inverted to be in the same direction as the other two items measuring the same latent variable, i.e., preference for brand prominence.

so to solve this issue, we would have to consider individual items as observed variables rather than averaging them to measure latent ones. Since the model fit is good, I will keep the two items despite the low AVE.

Table 108 – Confirmatory factor analysis for items in of Question 10

Chi square	CFI	RMSEA	P-close RMSEA					
165,373	,94	0,066	0,02					
Construct	Item	Factor Loading	Sig.	Item Reliability	1-Reliability	Coeff. Alpha	Factor Reliability	AVE
Need for status	Need for status_3	0,837	,00	,70	,30	,79	,81	,52
	Need for status_2	0,841	,00	,71	,29			
	Need for status_1	0,614	,00	,38	,62			
	Spendthrift_2	0,54	,00	,29	,71			
Need for uniqueness	Need for uniqueness_1	0,814	,00	,66	,34	,78	,79	,56
	Need for uniqueness_3	0,817	,00	,67	,33			
	Need for uniqueness_2	0,582	,00	,34	,66			
Price-quality schema	Price-quality schema_3	0,76	,00	,58	,42	,75	,76	,53
	Price-quality schema_2	0,86	,00	,74	,26			
	Price-quality schema_1	0,517	,00	,27	,73			
Hedonism	Hedonism_1	0,84	,00	,71	,29	,74	,75	,60
	Hedonism_3	0,698	,00	,49	,51			
Preference for brand prominence	Preference for brand prominence_2	0,66	,00	,44	,56	,50	,60	,43
	Preference for brand prominence_1	0,651	,00	,42	,58			

Figure 38 – Path diagram of the remaining 15 (out of 20) items of the questionnaire accompanying the conjoint analysis with IFOP.

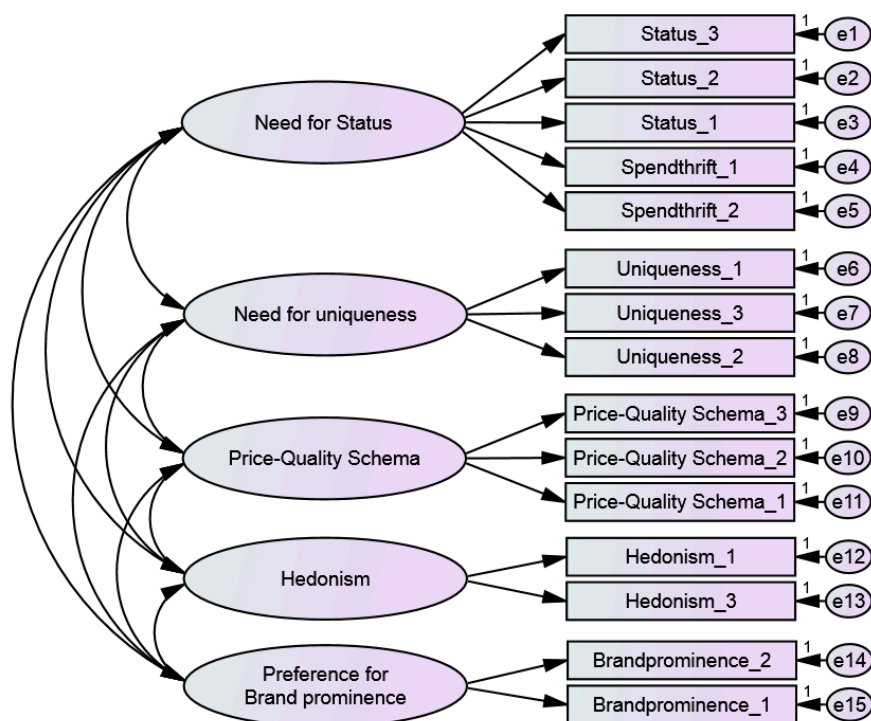


Table 109 - Fornell- Larcker criterion to assess discriminant validity

	Preference for brand prominence	Hedonism	Price-Quality Schema	Need for uniqueness	Need for Status	MAX.
Preference for brand prominence	.4297					.4297 OK
Hedonism	,0188	,5964				,5964 OK
Price-Quality Schema	,0955	,0767	,5282			,5282 OK
Need for uniqueness	,0182	,2520	,0250	,5563		,5563 OK
Need for Status	,2714	,1197	,2381	,1076	,5191	,5191 OK
MAX.	,4297	,5964	,5282	,5563	,5191	
	OK	OK	OK	OK	OK	

As shown above in Table 109 above, the Fornell-Larcker criterion is met: each squared correlation of any construct with any other construct is less than the AVE for the same construct, which indicates discriminant validity.

Table 110 - In yellow: chi-square statistics for each constrained model; in green: differences between each constrained model's chi-square statistics and the unconstrained model's one.

165,373	Status	Uniqueness	PQS	Hedonism	Brand Prominence
Status		298,79	201,176	157,456	76,342
Uniqueness	464,163		278,144	131,05	99,956
PQS	366,549	443,517		163,159	92,316
Hedonism	322,829	296,423	328,532		99,878
Brand Prominence	241,715	265,329	257,689	265,251	

Table 110 shows that the fit of the unconstrained model (please refer to Figure 38, in which there are no constraints on the covariances between latent variables, is significantly better than any model where a covariance between any two of the latent variables is constrained to 1 ($\Delta\chi^2$ is significant; $p < .001$). Chi-square statistics for the unconstrained model is 165,373. Please find chi-square statistics for each constrained model in Table 116 above highlighted in yellow, while differences between each constrained model chi-square statistics and the unconstrained model one highlighted in light green.

The remaining 15 items have then been reduced to underlying dimensions, through a principal axis factoring in SPSS. The rest of the analyses are conducted with the resulting 5 factors.

6.2.2.2. Regressions

In Appendix 4.1.3 (Table 44), I report Pearson correlations to have an idea of the relationships that subsist between different variables, treated as continuous variables (while in the previously reported cross-tabs, they were treated as multi-categorical variables). After observing that utilities for prices endings are mostly correlated to utilities for brands and sizes, and less to personal traits, I run linear regressions, to identify determinants of preferences for a price ending or the other. Unlike correlations, regressions imply a causality direction, in this case it is implied that personal traits and preferences for a brand and size

should determine preferences for price endings, and not the other way round. Also, running regressions allows me to consider several variables at a time, while correlations are calculated pairwise. This shows if, taken together, their effects cancel each other out or make other effects manifest.

Table 111 - Coefficients of brand utility must be interpreted against the baseline “Utility for Prada”, while all coefficient of size utility must be interpreted against the baseline “Utility for medium handbags”. “Utility for Prada” and “Utility for medium handbags” have been automatically omitted because of collinearity given that the sum of all brand utilities is zero, as well as the sum of all size utilities.

VARIABLES	(1) util_1560	(2) util_1595	(3) util_1600	(4) util_1640
Total Utility Gucci	-1.614*** (0.323)	1.056*** (0.274)	0.650* (0.331)	-0.0922 (0.265)
Total Utility YSL	0.415 (0.338)	0.910*** (0.287)	1.164*** (0.347)	-2.489*** (0.277)
Total Utility Large models	1.308*** (0.287)	0.471* (0.243)	-0.520* (0.294)	-1.259*** (0.235)
Total Utility Small models	0.209 (0.295)	-1.120*** (0.250)	1.244*** (0.303)	-0.334 (0.242)
Importance of product status	-0.202 (0.303)	0.573** (0.257)	0.0610 (0.310)	-0.432* (0.248)
Need for uniqueness	0.607** (0.298)	-0.377 (0.253)	-0.0850 (0.305)	-0.145 (0.244)
Price-Quality Schema	-0.537* (0.287)	-0.288 (0.243)	0.366 (0.294)	0.460* (0.235)
Search for hedonism	-0.302 (0.316)	0.545** (0.268)	-0.365 (0.324)	0.122 (0.259)
Preference for Brand Prominence	0.372 (0.337)	-0.457 (0.286)	-0.894** (0.346)	0.979*** (0.276)
Total spent on luxury	-3.73e-06 (4.58e-05)	6.67e-05* (3.88e-05)	-3.94e-05 (4.69e-05)	-2.36e-05 (3.75e-05)
Constant	8.337** (3.333)	-3.142 (2.827)	-5.835* (3.417)	0.640 (2.730)
Observations	340	340	340	340
R-squared	0.224	0.231	0.214	0.396
Age Income and Education effects ⁴⁶	YES	YES	YES	YES
Adj. R-squared	0.165	0.173	0.154	0.350
VIF	1.289	1.301	1.272	1.655

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

There are two ways of interpreting the results: the first is to consider each utility as a preference for a price ending the second is to consider each utility as a preference for the price as a whole: although the price level was kept constant as much as possible, there is still an 80-euro difference between the lowest and the highest price modality. So, it is possible that

⁴⁶ When looking at coefficients of dummy variables for education, we find that higher levels of education push the respondents to prefer 1595 (only marginally significant) and 1600, and dislike 1640.

utilities are an expression of a preference for different price levels, more than for price endings.

If we look at the first regression presented in Table 111, we see that the utility of 1560 is negatively affected by the utility the consumers have for the brand Gucci and positively by the utility for large handbags and by individuals' need for uniqueness. The fact that higher need for uniqueness explains higher utility for the lowest price available is surprising, since usually rarity is associated with higher prices. So, we can say that respondent with a higher need for uniqueness (i.e., respondents who like to have unique luxury products that other people do not have), who also prefer larger models to medium models but dislike Gucci compared to Prada, will have a higher utility for 1560, i.e., for the lowest price available or for the price ending in -60, which is a price ending so far ignored in the literature.

In the second regression, we see that the utility for 1595 is positively affected by both utilities for Gucci and YSL compared to Prada, by how important it is that for the respondent the product is a status symbol and by how important it is for them that the product also has intrinsic hedonic properties. It is negatively affected by the utility for small bags compared to medium bags. In other words, respondents who prefer Gucci and YSL to Prada, who dislike small bags, and who think a luxury product should both be a status symbol and have hedonic properties have a higher utility for 1595.

In the third regression, we see that individuals who have a higher utility for YSL compared to Prada and for small bags compared to medium bags have a higher utility for 1600. These respondents also seem to prefer quiet luxury products, since they indicate that they do not appreciate items which conspicuously show off the brand logo.

Finally, in the fourth regression, we see that the utility for 1640 is negatively impacted by a few factors: utility for YSL, for large handbags, importance of product status all have a negative impact on the utility for 1640. Only individuals who prefer prominent handbags, i.e. individuals who like to show off loud logos, also prefer the highest price available.

So, while at an aggregated level 1595 is preferred by everyone, utilities for 1595 and 1600 are impacted positively by both utilities for Gucci and for YSL compared to Prada. However, preference for a small handbag seems to increase appreciation for 1660 and decrease it for 1595. 1640 is the least preferred price, probably due to the fact that it is the highest price available.

6.2.2.3. Identification of explicative factors of price ending preferences

Given that running linear regressions analyses to identify determinants of price ending utilities seems to point out that only brand and size utilities, but not personal traits or motivations to engage in luxury consumption, have a significant role, I also ran a discriminant function analysis to confirm that indeed measured personal traits are not determinants for the preference of one price ending or the other.

The discriminant function analysis was run following Field (2013). Preference for a price ending was introduced as a fixed factor and brand utilities, size utilities and personal traits as potential discriminant variables.

Already looking at tests of equality of means reported in Table 112, we see that Importance of product status, Need for uniqueness, Price-Quality Schema, Search for hedonism and Preference for Brand Prominence are not significantly different when comparing them across different price ending preferences groups. This already indicates that measured personal traits are not necessarily important in distinguishing a preference or the other.

Table 112 - Tests of Equality of Group Means; factor: highest price ending utility.

	Wilks' Lambda	F	df1	df2	Sig.
Total Utility Gucci	,866	17,390	3	336	,000
Total Utility Prada	,908	11,307	3	336	,000
Total Utility YSL	,867	17,145	3	336	,000
Total Utility Large models	,884	14,661	3	336	,000
Total Utility Medium models	,976	2,788	3	336	,041
Total Utility Small models	,761	35,135	3	336	,000
Importance of product status	,997	,320	3	336	,811
Need for uniqueness	,983	1,944	3	336	,122
Price-Quality Schema	,993	,782	3	336	,505
Search for hedonism	,995	,517	3	336	,671
Preference for Brand Prominence	,983	1,942	3	336	,123

Table 113 - Tests of Equality of population covariance matrices

Box's M		175,876
F	Approx.	1,215
	df1	135
	df2	46477,584
	Sig.	,046

Box's M Tests null hypothesis of equal population covariance matrices and should ideally be non-significant. In this case, it is significant at 0,05 level. In order for the discriminant function analysis to be reliable, we should therefore look at the number of log determinants for each preference group, which should be approximately the same, which is the case here, as shown in Table 114 below.

Table 114 - - Log Determinants; The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

Highest utility for	Rank	Log Determinant
1560	9	31,682
1595	9	32,779
1600	9	33,072
1640	9	32,679
Pooled within-groups	9	33,022

In Table 115, we observe the three “dimensions” (or as I should more correctly call them “variates”) under which the proposed discriminant variables can be grouped explain respectively 61,3% of variance, 25,3 % and 13,4%. If we square the canonical correlation values, we obtain a proxy of effect size, comparable to an R^2 for a regression. In other words, the variables that “load” onto the first variate, explain the most the preference for one price ending or the other.

Table 115 – Percentage of variance explained by each variate

Variate	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation	Canonical Correlation ^{^2}
1	,381	61,3	61,3	,525	28%
2	,157	25,3	86,6	,369	14%
3	,083	13,4	100,0	,277	8%

The next part of the output (Table 116) shows the significance tests of both variates together and then the significance of the whole model once the first variate has been removed and then after only the third variate is left. As we can see, the third variate on its own would be enough to predict more or less correctly the price ending preference. In other words, adding variables that correspond to variate 1 and 2 do not add much to the model's capacity to predict price ending preferences. However, re-running the discriminant function analysis with only the variables that belong to the third variate would correctly predict price ending preference in 43% of cases, while keeping the three variates allows the model to correctly predict around 59% of preferences. Adding the two first variates therefore results in an important improvement.

Table 116 - Wilks' Lambda

Test of Variate(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 3	,578	182,343	27	,000
2 through 3	,798	75,115	16	,000
3	,923	26,548	7	,000

Results shown in Table 117 are the most important for interpretation as they show how each variate is composed. The reported values represent the relative contribution of each variable to group separation. Variate 1 indicates mostly utilities for medium-large handbags; Variate 2 mainly represents Utility for Gucci. Lastly, Variate 3 represents mainly the utility for Prada which is correlated with a preference for prominent luxury products.

Table 117 - Structure Matrix; Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions. Variables ordered by absolute size of correlation within function.

	Variate		
	1	2	3
Total Utility Small models ⁴⁷	-,901*	,075	,209
Total Utility Large models	,566*	-,059	-,317
Total Utility Medium models	,248*	-,009	,134
Need for uniqueness	-,179*	-,136	-,164
Total Utility Gucci	,240	,913*	-,171
Total Utility YSL ³⁵	-,480	-,536*	-,492
Importance of product status	-,067	,078*	-,045
Total Utility Prada	,279	-,401	,744*
Preference for Brand Prominence	,123	,137	,323*
Search for hedonism	-,078	-,052	-,151*
Price-Quality Schema	-,121	,002	,131*

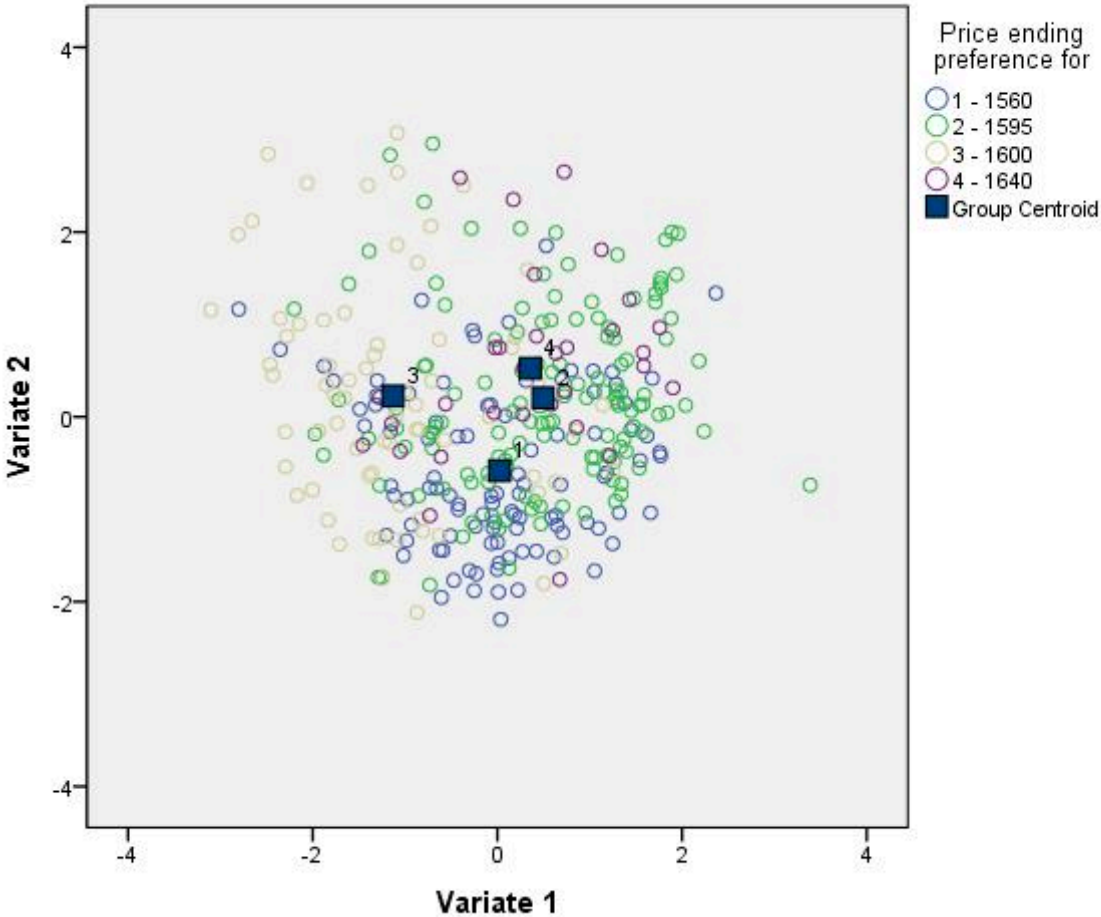
* Largest absolute correlation between each variable and any discriminant function

If we represent the first two functions on a scattered plot as shown in Figure 39, we see that the four groups identified are somehow differentiated along the first two variates. Respondents who are predicted to prefer 1560, have a medium utility for medium and large handbags and tend to have a negative utility for Gucci (they are situated at 0 on the Variate 1 axis and below 0 on the Variate 2 axis). Respondents who are predicted to prefer 1595 and 1640 are nearly overlapping on the graph: they both tend to have a higher than average utility for medium to large handbags, while the second Variate is not a distinctive determinant of these two preferences, since purple and green dots in the scattered plot cover the whole range

⁴⁷ This variable not used in the analysis because of multicollinearity issues with other utilities.

of Variate 2 from -2 to approximately $+3$. Lastly, respondents who are predicted to prefer 1600 tend to have a negative utility for medium to large handbags (we have seen in the regressions and in the correlation tables, how respondents who prefer small bags usually prefer 1600), while, once again the Variate that corresponds to the utility for Gucci does not play a discriminant role. This is why the group centroids for Groups 2, 3 and 4 are all at the same level on the y-axis.

Figure 39 - Canonical Discriminant Functions (Variates)



If we use the model as described in the structure matrix shown in Table 117, we can predict price ending preference correctly in 58,8%. This measure of model fit does not improve if I exclude from the analysis:

- respondents who have not bought luxury over the previous 24 months;
- respondents whose brand and size utilities have an extremely small range (bottom quartile of utility range), which indicated that they are not very sensitive to price changes;

- respondents who do not have a net preference for a price ending (i.e. respondents whose highest price ending utility is less than 30% greater than the second highest price ending utility, which corresponds to the bottom decile of the distribution of differences between highest and second highest utility).

To sum up, the utility respondents have expressed for medium to large handbags, for Gucci and for Prada (which is positively correlated to a preference for prominent handbags) predict correctly price ending preferences in nearly 60% of the case (192 respondents out of 340). It seems that respondents who dislike Gucci and have no clear preference for the size of the handbag prefer 1560; respondents who prefer medium and large bags, but do not have a definite opinion about Gucci either prefer 1595 or 1640; lastly, respondents who dislike medium and large bags, and supposedly prefer small bags, but do not have a definite opinion about Gucci, prefer 1600.

For those respondents whose price ending preference was correctly predicted by the model, I then ran several one-way ANOVA's to provide a more detailed profile of the average group member.

Table 118 – ANOVAs for 192 respondents whose price preference is correctly predicted by the discriminant function analysis model and respective tests of homogeneity of variances.

	ANOVA						Test of Homogeneity of Variances					
		Sum of Squares	df	Mean Square	F	Sig.	Levene Statistic	df1	df2	Sig.	Post-hoc	
Total Utility Gucci	Between Groups	954089,61	3	318029,871	65,136	0,000	8,998	3	188	0,000	Games-Howell	
	Within Groups	917924,85	188	4882,579								
	Total	1872014,46	191									
Total Utility Prada	Between Groups	383412,09	3	127804,029	28,500	0,000	0,691	3	188	0,558	Bonferroni	
	Within Groups	843055,68	188	4484,339								
	Total	1226467,77	191									
Total Utility YSL	Between Groups	675042,62	3	225014,206	40,490	0,000	3,122	3	188	0,027	Games-Howell	
	Within Groups	1044770,56	188	5557,290								
	Total	1719813,18	191									
Total Utility Large models	Between Groups	808904,55	3	269634,850	42,107	0,000	1,592	3	188	0,193	Bonferroni	
	Within Groups	1203878,34	188	6403,608								
	Total	2012782,89	191									
Total Utility Medium models	Between Groups	107194,76	3	35731,585	4,204	0,007	2,281	3	188	0,081	Bonferroni	
	Within Groups	1597760,93	188	8498,728								
	Total	1704955,68	191									
Total Utility Small models	Between Groups	1253526,61	3	417842,204	92,952	0,000	1,363	3	188	0,255	Bonferroni	
	Within Groups	845105,26	188	4495,241								
	Total	2098631,88	191									
Importance of product status	Between Groups	3,15	3	1,049	1,296	0,277	3,129	3	188	0,027	Games-Howell	
	Within Groups	152,06	188	0,809								
	Total	155,20	191									
Need for uniqueness	Between Groups	9,84	3	3,280	3,932	0,009	0,424	3	188	0,736	Bonferroni	
	Within Groups	156,84	188	0,834								
	Total	166,67	191									
Price-Quality Schema	Between Groups	3,74	3	1,247	1,728	0,163	2,790	3	188	0,042	Games-Howell	
	Within Groups	135,64	188	0,721								
	Total	139,38	191									
Search for hedonism	Between Groups	3,30	3	1,100	1,517	0,212	1,916	3	188	0,128	Bonferroni	
	Within Groups	136,29	188	0,725								
	Total	139,58	191									
Preference for Brand Prominence	Between Groups	1,82	3	0,605	1,075	0,361	3,351	3	188	0,020	Games-Howell	
	Within Groups	105,92	188	0,563								
	Total	107,74	191									
Total amount spent on fashion	Between Groups	138282286,26	3	46094095,420	3,571	0,015	6,438	3	188	0,000	Games-Howell	
	Within Groups	2426872619,86	188	12908896,914								
	Total	2565154906,12	191									

In Table 118 report the results of one-way ANOVAs on all variables that I previously included in the discriminant function analysis. We can see how the variables that did not contribute much to determining belongingness to one group or the other are also not significantly different in this analysis. On the right part of Table 118, I also report the results of Levene's test: for all variables with a significant Levene's test, I will interpret Games-Howell's post-hocs, instead of Bonferroni's, because they account for heteroskedasticity (unlike Bonferroni).

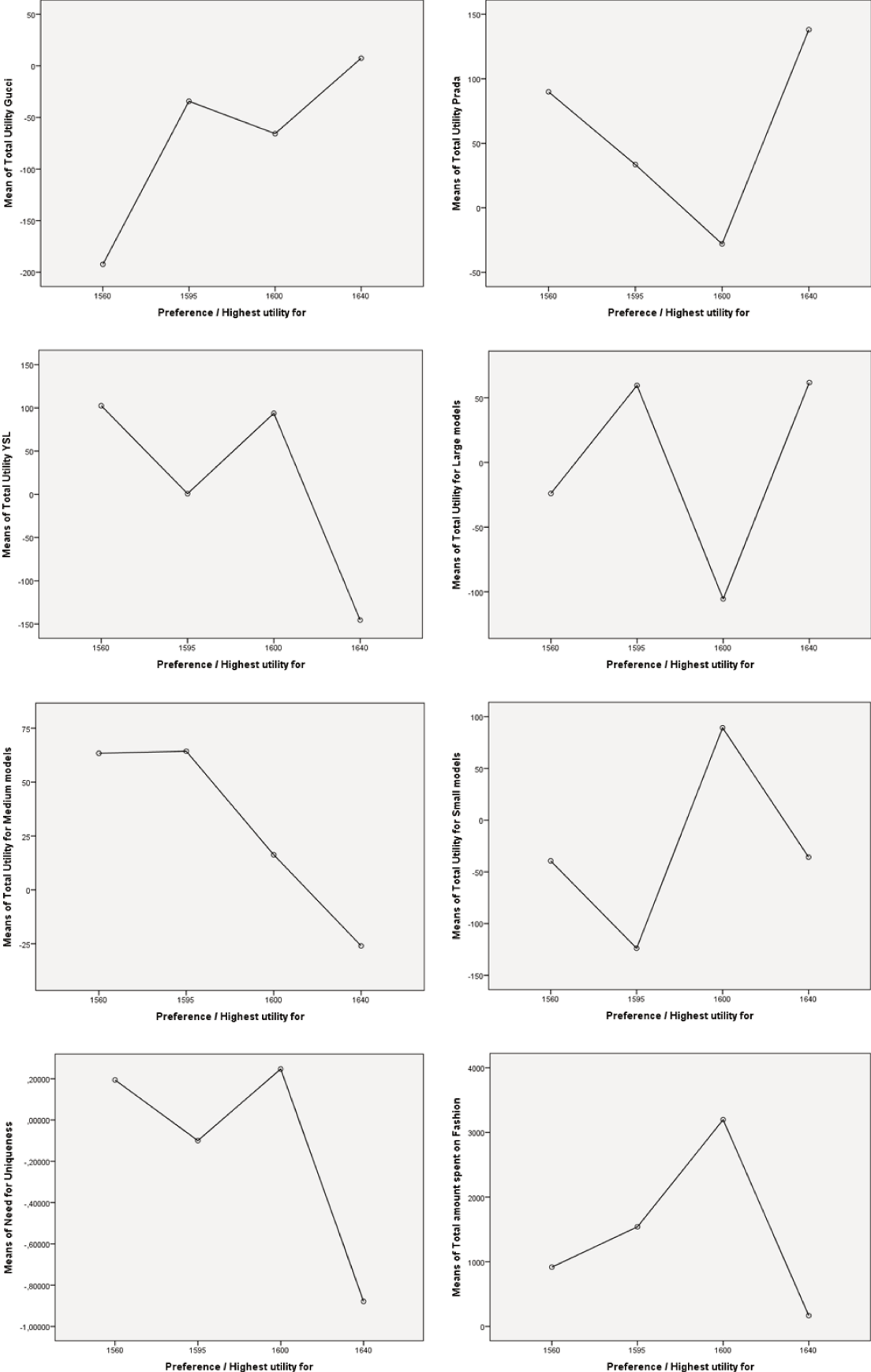
Table 119 – Post hoc – Multiple comparison; Only significant differences are reported.

		(I) Respondents with highest utility for	(J) Respondents with highest utility for	Mean Difference (I-J)	Std. Error	Sig.
Total Utility Gucci	Games-Howell	1560	1595	-158,08	9,285	0,000
			1600	-126,65	16,177	0,000
			1640	-199,81	29,792	0,003
Total Utility Prada	Bonferroni	1560	1595	56,34	11,336	0,000
			1600	117,87	13,916	0,000
		1595	1560	-56,34	11,336	0,000
			1600	61,53	12,838	0,000
		1600	1640	-104,56	28,235	0,002
			1640	-166,09	29,366	0,000
Total Utility YSL	Games-Howell	1560	1595	101,75	12,727	0,000
			1640	248,04	13,186	0,000
		1595	1600	-92,97	13,183	0,000
			1640	146,29	13,123	0,000
		1600	1640	239,26	13,627	0,000
			1640	239,26	13,627	0,000
Total Utility Large models	Bonferroni	1560	1595	-83,53	13,546	0,000
			1600	81,56	16,629	0,000
		1595	1600	165,09	15,341	0,000
			1640	-167,30	35,092	0,000
Total Utility Medium models	Bonferroni	1595	1600	48,03	17,673	0,043
Total Utility Small models	Bonferroni	1560	1595	84,48	11,349	0,000
			1600	-128,65	13,933	0,000
		1595	1600	-213,12	12,853	0,000
			1640	-88,08	28,269	0,013
1600	1640	125,04	29,402	0,000		
	1640	125,04	29,402	0,000		
	1640	125,04	29,402	0,000		
Need for uniqueness	Bonferroni	1595	1640	1,07	0,392	0,041
		1600	1640	1,13	0,401	0,033
		1640	1560	-1,07	0,392	0,041
Total amount spent on fashion	Games-Howell	1595	1640	1373,89	380,936	0,003
		1600	1640	3030,51	938,368	0,013

Interpreting both results of post-hoc multiple comparisons (Table 119) and the means plots in Figure 40, we find that:

- respondents who prefer 1595, 1600 and 1640 all like Gucci significantly more than respondents who prefer the lowest price 1560;

Figure 40 – Means plot only for respondents whose preference was correctly predicted by the discriminant function analysis; only significant ANOVAs.



- respondents who prefer 1600 like Prada the least; respondents who prefer 1560 and 1640 like Prada significantly more than respondents who prefer 1595 and 1600; also, respondents who prefer 1595 like Prada significantly more than respondents who prefer 1600;
- respondents who prefer 1560 and 1600 like YSL significantly more than respondents who prefer 1595 and 1640; respondents who prefer 1595 also like YSL significantly more than respondents who prefer 1640. Respondents who prefer the highest price 1640, like YSL the least;
- respondents who prefer 1595 and 1640 like large handbags significantly more than respondents who prefer 1560 and 1600; also, respondents who prefer 1560 like large bags significantly more than respondents who prefer the round price 1600;
- respondents who prefer 1595 like medium models significantly more than respondents who prefer 1600;
- Respondents who prefer 1560 and 1640 like small handbags (evening bags) significantly more than respondents who prefer 1595 and significantly less than respondents who prefer 1600; moreover, respondents who prefer 1600 like small bags significantly more than respondents who prefer 1595;
- Respondents who prefer 1595 and 1600 both have a higher need for uniqueness than respondents who prefer 1640 and have spent significantly more than respondents who prefer 1640 on luxury fashion products over the past 24 months. They probably express their higher need for uniqueness by buying more products that are slightly less expensive, but spend more overall.

Moreover, when running repeated measures ANOVAS (as I did in section 6.2.2.2. for the whole sample) for preference-defined sub-group of respondents, we find that their preference is well defined. In other words, respondents who prefer 1560 to other prices, prefer it significantly to all other prices; respondents who prefer 1595 to other prices, prefer it significantly to all other prices, etc. All repeated-measures ANOVAs and the respective Bonferroni post-hoc multiple comparisons are highly significant at 0,01 level.

6.2.2.4. Cluster analysis

As I did for the two experimentations (Studies 3 and 4), also for the conjoint analysis study, I ran a cluster analysis with personal traits and tried to explain preference for one price ending or the other through the belongingness to a cluster group. Please refer to Appendix 4.1.4. I hereafter report the main results of this analysis. Before deciding to classify respondents in 4 clusters, I first tried classifying them also in 2 and in 3 clusters. The results show that no matter the number of clusters (2, 3 or 4) there is always one that scores negatively compared to the average on all dimensions (need for consumption related status, need for uniqueness, Price- quality schema, search for hedonism and preference for brand prominence), and there is always another one that scores positively on all dimensions. Differentiating the classification further to identify four clusters rather than only two or three, allows me to identify also two groups that alternate positive scores to negative on the five dimensions.

Table 120 – Results of cluster analysis and resulting clusters’ descriptions

	Cluster 1	Cluster 2	Cluster 3	Cluster 4
Number of respondents per cluster	132	91	72	45
Need for uniqueness	+	+	--	-
Price-Quality schema	-	++	-	+
Need for status	-	++	--	++
Hedonism	+	+	--	-
Preference for brand prominence	-	+	-	+++
Average spending on fashion	€ 2.638	€ 4.073	€ 1.710	€ 3.537
Max spent on fashion	€ 31.200	€ 30.450	€ 28.000	€ 27.550
Min spent on fashion	€ -	€ -	€ -	€ -
Average spent on luxury	€ 2.743	€ 4.091	€ 1.710	€ 3.234
Description	Respondents in cluster 1 do not care about status or signaling it. They prefer luxury products that are unique and rare, do not think that higher prices necessarily buy better quality and appreciate luxury also for its hedonic features. They are Patricians .	Respondents in cluster 2 prefer unique luxury products to signal status; they use price as an indicator of quality (the more expensive, the higher the quality) and they appreciate luxury also for its hedonic features. They like products that are somehow prominent. They are Snob .	Respondents in cluster 3, like respondents in cluster 3, do not care about status or signaling it. However, they like to conform in their luxury consumption, they will not buy the most expensive product to have the highest quality and do not care for hedonic attributes of products. They are Low Profile . ⁴⁸	Respondents in cluster 4 like luxury products that signal status and allow them to conform, rather than being unique in their luxury consumption. They use price as an indicator of quality, do not give much importance to hedonic aspects of consumption and like prominent luxury products. They are Parvenus .

⁴⁸ They are quite similar to Excursionists in Study 3 (Experiment 1). However, the amount they have spent on luxury over the past 2 years, is quite substantial and probably higher than one would expect an Excursionist to spend. This is why I assign them different “labels”.

Please notice that this cluster analysis was conducted on all respondents, both those who had purchased and who had not purchased luxury products prior to the study. Excluding respondents who reportedly did not buy any luxury product yields very similar results, with profiles of the average respondent per cluster extremely comparable to those illustrated in Table 120. I therefore prefer to present results on the whole sample to benefit from a larger sample size (340 vs. 204 respondents).

Table 121 below, shows that despite the existence of four different groups of respondents in the observed sample, from a statistical perspective, they all have similar preferences for price endings, as the Pearson Chi-Square test is non-significant. Approximately 30% of each cluster prefer the lowest price in -60, 40% the odd price, 20% the even price and less than 10% prefer the highest price in -40. Only Parvenus make an exception in that they have a lower preference (in %) for the lowest price in -60 and a much higher preference for the highest price in -40. This can easily be explained by their high need for status and enjoyment in showing off their possessions.

Table 121 – Cross tabulation of Preference for a price ending vs. Cluster belongingness

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,989 ^a	9	,351
Likelihood Ratio	8,656	9	,470
N of Valid Cases	340		

a. 1 cells (6,3%) have expected count less than 5. The minimum expected count is 4,01.

		Cluster Number of Case				Total
		Patricians	Snob	Low Profile	Parvenus	
Highest utility for 1560	Count	39	31	23	10	103
	Expected Count	40,6	27,3	21,8	13,3	103,0
	% within Cluster	29,1%	34,4%	31,9%	22,7%	30,3%
1595	Count	55	35	29	16	135
	Expected Count	53,2	35,7	28,6	17,5	135,0
	% within Cluster	41,0%	38,9%	40,3%	36,4%	39,7%
1600	Count	30	19	13	9	71
	Expected Count	28,0	18,8	15,0	9,2	71,0
	% within Cluster	22,4%	21,1%	18,1%	20,5%	20,9%
1640	Count	10	5	7	9	31
	Expected Count	12,2	8,2	6,6	4,0	31,0
	% within Cluster	7,5%	5,6%	9,7%	20,5%	9,1%
Total	Count	134	90	72	44	340
	Expected Count	134,0	90,0	72,0	44,0	340,0
	% within Cluster	100,0%	100,0%	100,0%	100,0%	100,0%

6.2.2.5. Mediation analysis with Process

In general, there is no direct effect of cluster membership on price ending preference as shown below in Table 122, as also observed in the cross-tabs in previous Table 121. The only exception is the utility for 1640, i.e., the highest price with the smallest price ending, which is significantly and positively impacted by the fact that the respondents belong to clusters of Parvenus or “low profile” customers. This is reasonable for Parvenus, since they score high on consumption-related need for status and they heavily rely on price as an indicator of price. However, this seems surprising for those respondents that I have called “low profile”, since they declare not to care about the product’s status, nor to rely on price as an indicator of quality. One way to make sense of these results, is to speculate that “Parvenus” prefer 1640 because it is the highest price, while “Low profile” respondents prefer it because it is the lowest price ending available. However, it is not possible to reliably interpret these results, given the current data.

Table 122 – Main effects of cluster membership on price ending utility compared to baseline “Patricians”.

VARIABLES	(1) util_1560	(2) util_1595	(3) util_1600	(4) util_1640
Snobs	-0.0507 (0.629)	0.0124 (0.531)	-0.180 (0.641)	0.218 (0.567)
Low profile Consumers	-0.0297 (0.685)	-1.120* (0.579)	-0.196 (0.699)	1.346** (0.619)
Parvenus	-0.608 (0.809)	-0.831 (0.683)	-0.475 (0.825)	1.914*** (0.730)
Constant	9.100** (3.614)	-4.237 (3.052)	-3.592 (3.687)	-1.271 (3.262)
Observations	340	340	340	340
R-squared	0.052	0.069	0.048	0.103
Age Income and Education effects	YES	YES	YES	YES
Adj. R-squared	0.00192	0.0196	-0.00191	0.0558
VIF	1.055	1.074	1.051	1.115

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

I next ran several mediation analyses, in which we see that brand and size utilities mediate significantly the relationship between cluster membership and price ending utility.

To run mediation analyses, I used the SPSS macro PROCESS Hayes (2013) as illustrated in the template reported back in Figure 21 (page 192). I introduced cluster membership as the independent variable X, total utility for a size or for a brand as mediator M and utility for a price ending as the dependent variable Y. For the entire outputs, please refer to Appendices 4.1.5.1. to 4.1.5.11..

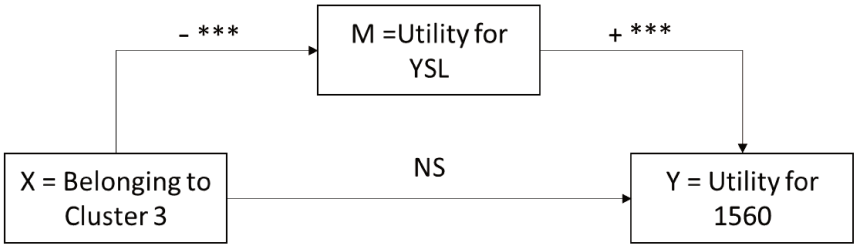
I hereafter report only significant results. All cluster-related effects are to be interpreted compared to the baseline “Patricians”, i.e., individuals who mainly buy luxury products that are unique, because they do not like to conform to the masses, and who mainly search for hedonic properties in luxury consumption. They are not concerned with showing off status, which is why they prefer discreet luxury products.

6.2.2.5.1. Preferences of “low-profile” consumers vs. Patricians’.

Members of Cluster 3 are respondents whom I have defined as “low-profile consumers”, because from what they declare in the questionnaire they are not concerned with status, about feeling unique through consumption (they want to conform), about acquiring goods that are prominent or hedonic, and they do not rely on price as an indicator of quality. However, they still have spent on average around 1700 euros on luxury over the previous 24 months.

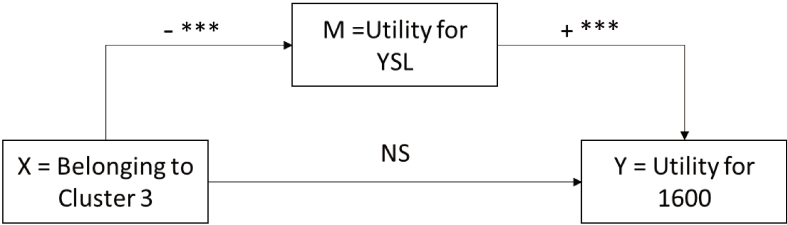
Belonging to Cluster 3, has a negative effect on the total utility for YSL, which in turn has a positive impact on the utility for 1560 and 1600. Overall, the indirect effect of being a low-profile consumer on the preference for the lowest price available is mediated by the utility for YSL and is negative. In other words, these respondents do not appreciate YSL, whose utility would otherwise have a positive effect on the utility for 1560 and 1600. The negative effect of belonging to Cluster 3 on the utility for YSL is stronger than the positive effect of the total utility of YSL on the utility of 1560 and 1600. Please refer to Figures 41 and 42.

Figure 41 – Mediation, Model 4 of Process⁴⁹; negative mediated effect of X on Y through M. Please refer to Appendix 4.1.5.1. for the entire output.



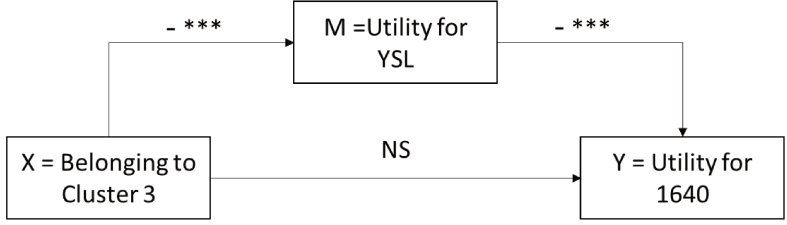
⁴⁹ Model Templates for PROCESS for SPSS and SAS; © 2013-2015 Andrew F. Hayes and The Guilford Press

Figure 42 - Mediation, Model 4 of Process templates⁴⁹; negative mediated effect of X on Y through M. Please refer to Appendix 4.1.5.2. for the entire output.



Low-profile consumers do not appreciate YSL. Because for increasing values of utility for YSL, the utility for 1640 decreases, the overall mediated effect turns out to be positive. In other words, the stronger low-profile consumers dislike YSL, the more they appreciate the highest price 1640. This is surprising, since we would expect relatively uninterested-in-luxury respondents to possibly prefer the lowest price rather than the highest price.

Figure 43 - Mediation, Model 4 of Process templates⁴⁹; positive mediated effect of X on Y through M. Please refer to Appendix 4.1.5.3. for the entire output.



Low-profile consumers seem to appreciate more Prada (than YSL), whose utility in its turn has a negative impact on the utility of 1595 and of 1600. Overall, the mediated effect of being a consumer of cluster 3 on the utility for 1595 and of 1600 is negative. In other words, the more they like Prada, the less they appreciate the odd price 1595 and 1600.

Figure 44 - Mediation, Model 4 of Process templates⁴⁹; negative mediated effect of X on Y through M. Please refer to Appendix 4.1.5.4. for the entire output.

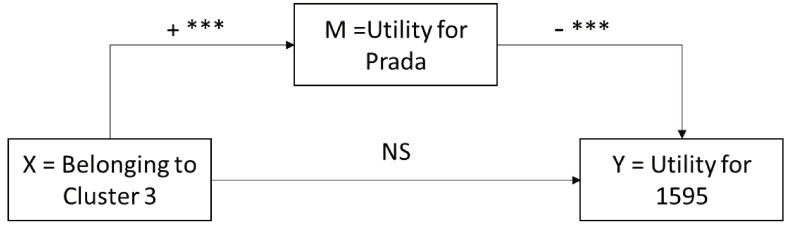
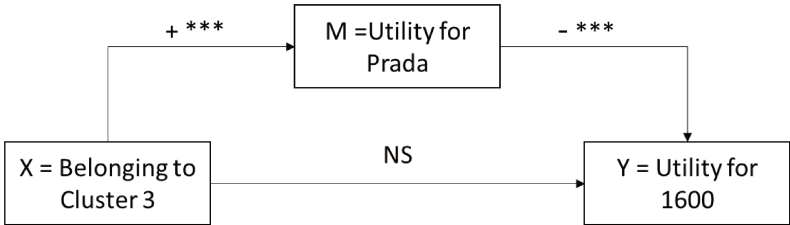
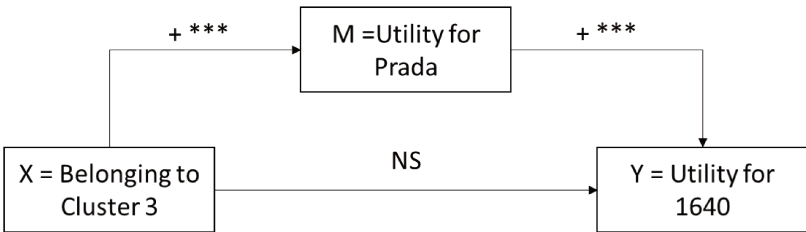


Figure 45 - Mediation, Model 4 of Process templates⁴⁹; negative mediated effect of X on Y through M. Please refer to Appendix 4.1.5.5. for the entire output.



Belonging to Cluster 3 has a positive effect on the utility of Prada, which in turn has a positive effect on the utility for 1640. The overall mediated effect of being a “low-profile” consumer on the utility of 1640 is positive and significant and mediated by the utility of Prada. In other words, the more respondents of Cluster 3 appreciate Prada, the more they like the highest price 1640.

Figure 46 - Mediation, Model 4 of Process templates⁴⁹; positive mediated effect of X on Y through M. Please refer to Appendix 4.1.5.6. for the entire output.



6.2.2.5.1. Preferences of “Parvenus” consumers vs. Patricians’.

Members of Cluster 4 are “Parvenus” because they declare that for them the product’s status is very important, they heavily rely on price as an indicator of quality and they enjoy very prominent products. They seem to dislike large tote bags, whose utility is otherwise positively correlated to the utility of 1560. The overall effect of being a Parvenus on the utility of 1560 and of 1595 is negative when mediated by the utility for large bags. In other words, being a Parvenu has a negative effect on the appreciation of large handbags. Moreover, the more Parvenus dislike large bags, the more they dislike the lowest prices 1560 and 1595.

Figure 47 - Mediation, Model 4 of Process templates⁴⁹; negative mediated effect of X on Y through M. Please refer to Appendix 4.1.5.7. for the entire output.

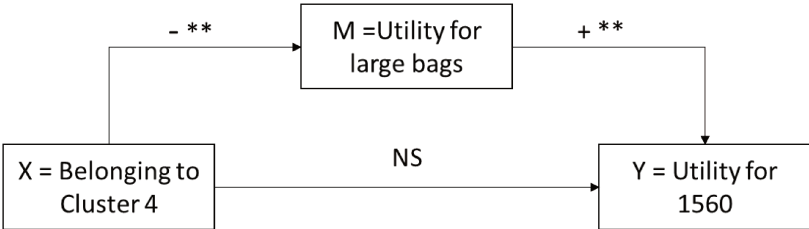
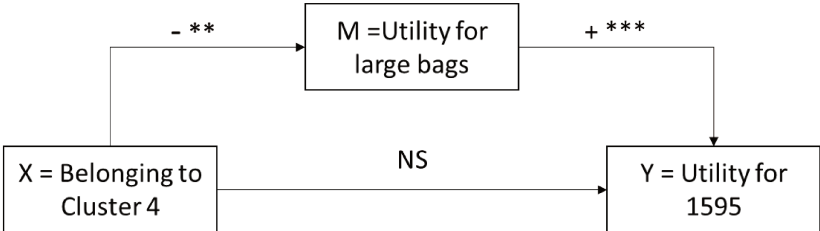
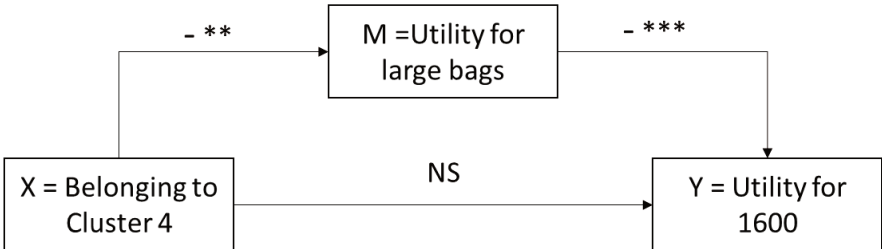


Figure 48 - Mediation, Model 4 of Process templates⁴⁹; negative mediated effect of X on Y through M. Please refer to Appendix 4.1.5.8. for the entire output.



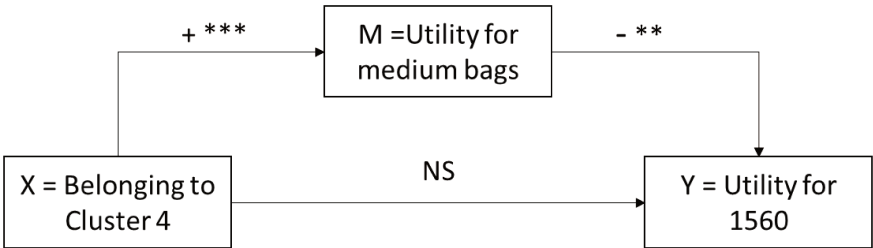
Parvenus do not appreciate large bags. Because for increasing values of utility for large bags, the utility for 1600 decreases, the overall mediated effect turns out to be positive. In other words, the stronger Parvenus dislike large bags, the more they appreciate 1600.

Figure 49 - Mediation, Model 4 of Process templates⁴⁹; positive mediated effect of X on Y through M. Please refer to Appendix 4.1.5.9. for the entire output.



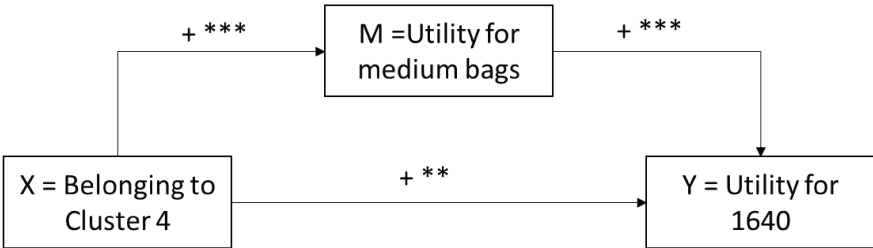
Parvenus seem to prefer medium handbags, whose utility in turn has a negative impact on the utility for 1560. In this case, the negative effect of the utility for medium bags on the utility for 1560 is stronger than the effect of cluster membership on the utility for medium handbags. The overall mediated effect is negative and significant. The more Parvenus like medium bags, the less they appreciate the lowest price 1560.

Figure 50 - Mediation, Model 4 of Process templates⁴⁹; negative mediated effect of X on Y through M. Please refer to Appendix 4.1.5.10. for the entire output.



Parvenus seem to prefer medium handbags, whose utility in turn has a positive impact on the utility for 1640. The more Parvenus like medium bags, the more they appreciate the highest price 1640.

Figure 51 - Mediation, Model 4 of Process templates⁴⁹; positive mediated effect of X on Y through M. Please refer to Appendix 4.1.5.11. for the entire output.



Moreover, I find that being a Parvenu has a positive direct effect on the utility for the highest price 1640, which was already shown in linear regressions in Table 122.

6.3. Study 5 – discussion and limitations

In the first three empirical chapters of this thesis, I showed that different price endings are used in the luxury women handbags product category, I identified their determinants and then I tested their perceptions on the customer’s side. In this chapter I wanted to test whether the observed perceptions, are translated in actual preferences.

Very interestingly, we observe that at an aggregated level, the whole sample prefers the odd price condition to all other conditions: 1595 has the highest utility among the four prices and it is the price that has most often the highest utility. On average, 1595 is clearly preferred to a price that is just 5 euros higher, and, in statistical terms, it is appreciated approximately just as much as a price that is 35 euros lower (i.e., the average utility for 1560 and 1595 are not significantly different, although 1595 has a somewhat higher utility than 1560). So, we observe in this sample of potential and actual consumers of luxury goods that an odd price does create a peak in demand, just like the ones that have been described in the literature on

odd pricing outside of a luxury context (Anderson & Simester, 2003; Gabor & Granger, 1979). Several steps in the analysis later, we observe that price ending preferences are in general not segment-dependent, in that approximately 30%, 40%, 20% and less than 10% of Patricians, Snobs and Low profile respondents, prefer 1560, 1595, 1600 and 1640 respectively. The only exception is that of Parvenus, who dislike the lowest price (in % terms) and prefer the highest price instead, as more than 20% of them express their highest utility for 1640 euros. These findings disconfirm all hypotheses from 14 to 19, which predicted that consumers of luxury goods, regardless of the main motivation for which they engage in luxury consumption, should all prefer an even price to an odd price. The only characteristic that was expected to predict a preference for an odd price was Preference for Brand Prominence. Indeed we find that Parvenus who manifest the strongest preference for prominent products prefer odd prices, but they are also the only segment that expresses a preference for the highest price most often.

Another part of the analysis was to identify consumer-dependent characteristics that might explain a preference for a price ending or the other. When running linear regressions, we observed that the **price ending in -60** (and therefore the lowest price option) is preferred by individuals who prefer large tote bags and tend to have a high need for uniqueness but disliked by individuals who appreciate Gucci. The **odd price** is appreciated more by individuals who like Gucci, YSL and individuals who search for hedonic properties in luxury consumption (which clearly disconfirms hypothesis 18), while it is disliked by individuals who like small evening clutches. The **even price 1600** is particularly appreciated by individuals who like YSL and small evening clutches, but disliked by individuals who like prominent bags. Lastly, the **highest price with an ending in -40** is clearly disliked by individuals who appreciate YSL and small evening clutches, while it is appreciated by individuals who enjoy conspicuous consumption of luxury goods.

While any difference in utility or appreciation between 1600 and 1595 can clearly be reconducted to a price-ending effect, because there is only a 5-euro difference between the two prices (i.e., 0,3% difference), it is difficult to infer whether respondents with a higher utility for 1640 really appreciate the highest price or the price ending, because, as previously mentioned, there is also an 80-euro difference between the highest and the lowest tested prices, so some respondents might have expressed their utility in terms of price level rather than in terms of price endings. Moreover, because the prices are, in percentage terms, quite

close to one another, while the 9 modalities combining brand/model attributes are well distinct, it is normal to observe sharp preferences for the latter and less pronounced one for the former (Orme, 2010).

What is interesting here is that we realize that respondents' appreciation or utility for one price or the other is mainly driven by brand and model preferences, more than by any personal traits. This was both confirmed by the linear regression analyses and by the discriminant function analyses, which showed that the other choice-based conjoint utilities are more than enough (i.e., without personal traits or personal motivations to engage in luxury consumption) to explain price ending preferences.

There are only 11 significant effects that were found, that can be linked to the respondent's profile.

In general, I found that if the respondent can be described as a "low-profile" consumer (i.e., low on all measured traits) or as a Parvenu (i.e., high in need for status and preference for brand prominence) then they will have a preference for a type of price ending and these preferences will be also explained by their brand and model utilities. Otherwise, if the respondent belongs to the "Patrician" or "Snob" clusters, they will not have any specific preference in terms of price ending. A possible explanation is that these two groups of consumers might be more interested in the hedonic aspects of luxury consumption and therefore pay less attention to the price attribute. Individuals who are buying luxury mainly for its hedonic qualities, for self-indulgence in the emotional or sensory value a luxury product conveys (Hirschman & Holbrook, 1982) are known to pay less attention to the price attribute than consumers who engage in consumption for functional/utilitarian reasons (Wakefield & Inman, 2003).

In the mediation analyses conducted at last, we observe that 1640 is also appreciated by respondents that have been defined "low-profile". This is surprising if we consider that 1640 the highest price, because this group of respondents is reportedly not interested in showing off status thanks to the consumption of expensive products, but it is plausible if we consider that they might have expressed a preference for the price ending -40. As we have seen in chapter 4, "other" endings are used by luxury brands on women handbags with the same patterns as prices in -90 and in -95, so 1640 as an "other" price, i.e., with a price ending that is typical of relatively less expensive, lower-quality products, has a reason for being the preferred price

ending of low-profile respondents. Moreover, this appreciation is explained by an appreciation of the brand Prada, and accompanied by a dislike for YSL. Respondents of this group dislike the other three price endings, only thought the mediated effect of brand utilities, but not as a direct effect. Lastly, Parvenus respondents like the highest price, which is also explained by an appreciation of the brand Prada, while they dislike other prices. This dislike is either accompanied by a dislike to large tote bags, or for YSL models in general.

In general, odd prices are preferred at an aggregated level, i.e., overall there is a clear preference for odd prices, both in terms of extent of the preference and number of respondents who prefer this price. However, this preference is not explained by cluster belongingness. We only observe that individuals who prefer large bags and Gucci prefer odd prices to other prices, but other customers do not dislike the pricing technique either, except for low profile consumers who like Prada and Parvenus who dislike large tote bags. So, in general, I would suggest using some odd prices because it is likely that at an aggregated level there will be a benefit from this pricing technique.

6.3.1. Study 5 – Limitations

CBC does have its disadvantages: first of all, as I previously mentioned, several respondents got in touch in order to report that the choice task crashed, because they were exposed to 15 similar choice sets and did not notice that the three items were actually changing every time they clicked on “next”. Having to choose so many times among such similar items is not something that a consumer would do in real life. Moreover, given the similarity of the options, some respondents probably ignored some attributes that they deemed unimportant and used shortcut heuristics or even selected options randomly at some point of the task.

Secondly, assuming that respondents do pay attention to all attributes of all options in all 15 sets, then this is a lot of information for them to process and can therefore become cognitively difficult to handle.

Thirdly, although choices in a conjoint analysis context are probably the best proxy for purchase intention, especially since we are mimicking purchases of very expensive items, the fact that the respondent chooses a pricey handbag on a screen tells us little information about what she would choose in a store and if she would spend the money to acquire the good.

Fourthly, for such high prices, it is extremely difficult to test the price ending without changing the price level: since luxury brands do not use 1, 2, 3, 4,6,7,8,9 as rightmost digits, this implies that going from 0 to 5 to 0 or from 0 to 0 will consist in a bigger absolute change in price, not of just a few units or cents.

Fifthly, we made a strong assumption that respondents would make exactly the same choices if they were presented the 15 choices once again in a different order. We can reasonably accept, at this point, that this is not the case, because it is more likely that after the first few choices, respondents started to pay less attention, especially those who informed me that there was a “bug” preventing the questionnaire to go on.

Lastly, it is possible that the three brands are not so comparable after all. Both Gucci and YSL have been undergoing some major changes in their management and artistic directions. As on-going transformations, it is hard to take utilities and brand luxury indices as reliable measures of brand appreciation or opinion, because not all respondents and consumers might be aware of these changes. Also, this could explain why measured personal traits and motivations to engage in luxury consumption do not differ significantly from one brand preference to the other, possibly because the two brands are still serving some of their ancient target and some of the new one, before completing the transition.

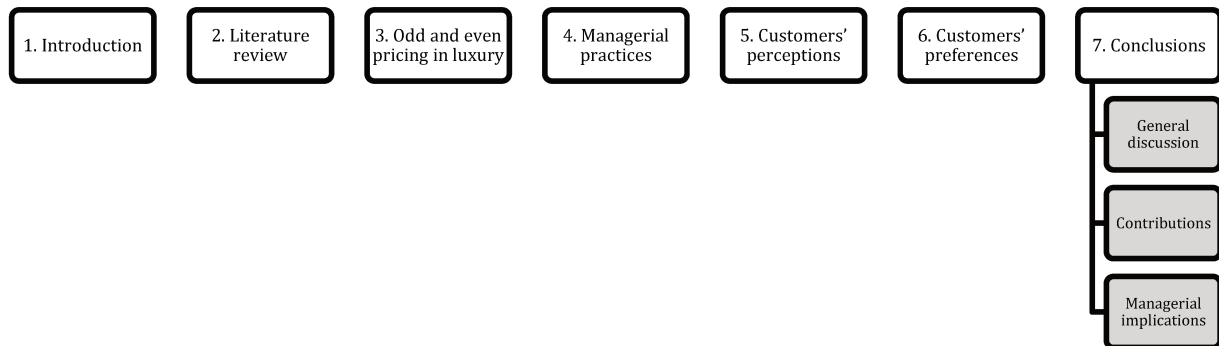
6.3.2. Study 5 – Contributions

This study contributes to the literature on odd pricing and luxury pricing by bringing new insights into customers’ preference for women bags (tote, handbags and clutches) and their prices at a medium price range. Also, it gives a theoretical (but also managerial) contribution in that it shows how customers prefer certain types of prices mostly according to the brand and the model they like, more than as a function of their personal traits, as it had instead been hypothesized. From a theoretical point of view, this is interesting, because in marketing we tend to create explicative models around personal traits and motivations to engage in consumption, while sometimes it might be the case that brand and model preferences do not depend on the personality of the consumer but are exogenous and given. If this were the case, than market research should be more brand-oriented than customer-centered.

Another methodological contribution of this study is that I find that need for conformity is hardly measurable per se, since respondents in general prefer to give low scores to items measuring need for uniqueness, rather than giving high scores to items measuring need for

conformity. This can most likely be linked to the framing effect (Tversky & Kahneman, 1981), according to which people react to a particular choice in different ways depending on how it is presented. Also, in the analysis of the items measuring personal traits, I find that the enjoyment in spending money is a strong component of the consumption-related need for status, instead of being a dimension of its own.

Progress – This chapter will deal with point 7.



7. Conclusions

7.1. General discussion and conclusions

This thesis investigates price endings (i.e., the leftmost digits of a price) in the luxury context of women handbags. On the one hand, previous literature exists on odd and even prices in the FMCG, and it mostly investigates the use of 9-ending vs. 0-ending prices, their effects on sales, on price and quality perceptions. On the other hand, a very limited body of literature has been developed on luxury pricing. To the best of my knowledge, no research has ever brought the two subjects together. This is most likely due to the commonly-held belief that individuals who purchase luxury products are not sensitive to price in general: it follows that they should pay little to no attention to price endings, which carry little monetary value compared to the leftmost figures of a price (i.e., compared to the figures representing thousands and hundreds; Schindler & Wiman, 1989). Anecdotal evidence, such as the one reported in Appendix 1, shows that also in luxury we can observe prices ending in -9. The curiosity raised by this and other anecdotal evidence, together with the important impact price endings have on unit revenues and margins (Simmons & Schindler, 2003) motivated this research.

This dissertation focuses on luxury women handbags, which accounted for 44 billion retail sales in 2016, and presents four main empirical parts, each responding to specific research questions.

1. What price endings are used and how can odd and even prices be defined in a luxury context?

Chapter 3 builds the foundation of the research by establishing what price endings are used in the chosen product category and by proposing a definition of odd and even prices that is suitable to higher prices. By observing more than a thousand references in euros and a thousand more in dollars, for a total of nine well-known luxury brands (Chanel, Coach, Dior, Fendi, Gucci, Lancel, Louis Vuitton, Prada, Yves Saint Laurent) in Spring 2014, I find that decimal figures are never used and that nearly the totality of prices end in -0 . In another context, this would lead the researcher to state that all observed prices are even. However, given that luxury prices are in the order of thousands or hundreds of euros/dollars, to identify different types of price endings, we need to look at the first salient rightmost digit (Legohérel et al., 2013; Simmons & Schindler, 2003). In this case, this means looking at the second rightmost digit. Looking at the two rightmost digits' distributions in the euro and dollar samples, I identify four types of price endings, two of which have already been discussed in the literature:

- ***Odd prices***, usually defined as “prices whose rightmost digits cause it to fall just below a round number” (Schindler & Warren, 1988), here are prices that end up to 10 euros below a round hundred or thousand (e.g., 990€, 1295\$, 2090€, etc.). They represent 30% of the euro sample and 21% of the dollar sample;
- ***Even prices***, normally defined as prices ending in -0 (Legohérel et al., 2013), are here prices that end with at least two zeros, i.e., in -00 (e.g., 1300\$, 2000€, etc.). They represent 23% and 24% of the euro and dollar samples respectively.

Prices other than odd and even have never been discussed or defined in the literature. However, they represent a substantial percentage of the observed samples, so they certainly deserve to be investigated further:

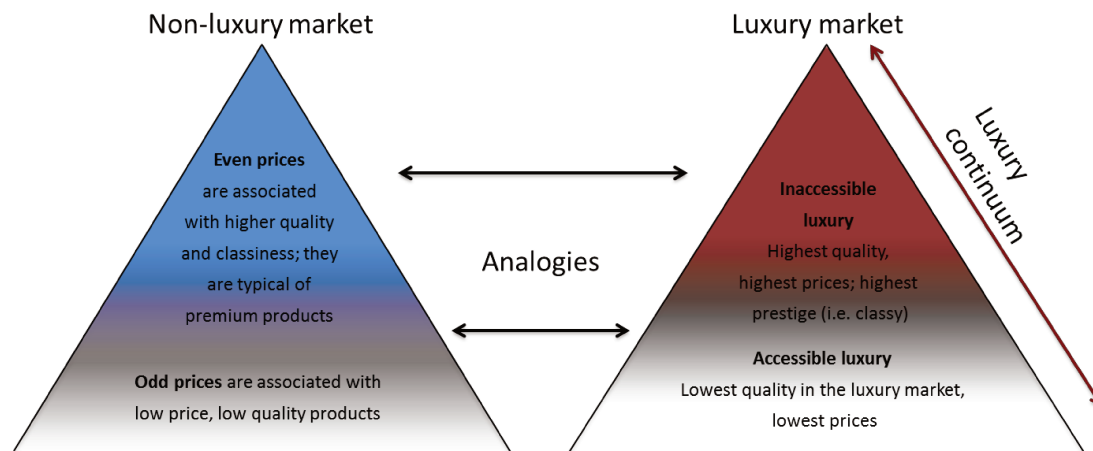
- ***Prices ending in -50*** (e.g., 650\$, 1650€, 2050\$, etc.) represent 24% of the observed euro sample and 31% of the dollar sample;
- ***“Other” prices***, ending in -10 , -20 , -30 , etc. (e.g., 730\$, 1110€, 1980\$, etc.) represent 23% of both euro and dollar samples.

2. What determinants drive the use of different price endings?

Chapter 4 highlights the paradox of using odd prices in a luxury context, bringing forward previous findings on this practice. On the one hand, odd prices are typical of FMCG (Harris & Bray, 2007) and several authors find that odd prices have a low-price, low-quality, low-prestige connotation, while even prices are more spontaneously considered full prices, with high-quality and high-prestige connotations (Naipaul & Parsa, 2001; Quigley & Notarantonio, 1992; Schindler, Parsa, & Naipaul, 2011; Schindler, 1984, 2001, 2006; Schindler & Kibarian, 2001). On the other hand, luxury (or prestige) pricing is defined as “setting a rather high price to suggest high quality or high status” (Perreault & McCarthy, 1999). In fact, higher prices are known to be correlated with higher levels of perceived quality and prestige (Lichtenstein et al., 1993; Rao & Monroe, 1989). If findings related to odd and even prices were relevant also in a luxury context, then we should observe mainly even prices and no odd prices at all in the luxury women handbag category. Instead, as Chapter 3 has revealed, four types of price endings are widespread in this product category and odd prices account for at least 1/5 of prices (dollar sample).

Given the first counterintuitive results, to understand how price endings are determined, I make the assumption that pricing managers might reproduce price ending patterns they have observed elsewhere, either as customers or as pricing managers in a non-luxury company, and apply them to the possibly oversimplified context of luxury handbags (Gavetti, Rivkin, & Auton, 2005). In other words, if handbags prices are treated like non-luxury prices, because of odd and even prices connotations, it would make sense to observe more odd prices among accessible handbags and more even prices among inaccessible handbags. Also, given that a brand's handbags cover a wide price range, from accessible to inaccessible, and that the transition from one to the other is rather smooth through intermediate luxury handbags, we could expect the transition from a prevalence of odd prices to a prevalence of even prices to be progressive and possibly accompanied by a more intense use of other price endings. Please refer to Figure 52 that illustrates how the use of odd and even prices in a non-luxury context might be reproduced in a luxury one.

Figure 52 - Analogies between the non-luxury and the luxury market, reported from Figure 8 in Ch. 4.



Results from Chapter 4 confirm the hypotheses that (relatively) inaccessible handbags (i.e., more expensive, more discrete in terms of logo and of better quality, such as handbags made of python or crocodile leather), have less odd and more even prices compared to more accessible luxury products (i.e., less expensive, more conspicuous and of inferior quality, such as handbags made of canvas that show a repeated monogram), which in turn have more prices ending in -90 (i.e., odd prices). Prices ending in -50 are most likely used for handbags that are in the middle of the luxury range (i.e., intermediate luxuries), while the residual category of “other” prices, are mainly used like odd prices. Interestingly, when the price of a handbag is increased from one season to the next, as it happens for most permanent items, its price ending will most likely change. In other words, although it is well established that odd and other prices are more typical of handbags that are cheaper, made of lower-quality materials and that are more prominent, while even prices are more typical of bags that are more expensive, made of higher-quality materials and more discreet, there seem to be no fixed and consistent rules for managers to set a price ending for any given item season after season: for example, the same identical bag can be odd-priced in season n , have a price ending in -50 in season $n+1$ and be even-priced season $n+2$.

In general, prices are less carefully determined and less detailed as the price goes up (i.e., as the number of price figures increase, it becomes less likely that the rightmost digits will be different from -00). Also, when the price increase for a specific product from one season to the next is more substantial, the resulting price ending is more likely to be even, while, if the price increase is rather limited, the resulting price ending is more likely to be odd or “other”.

Limiting the price increase and using an odd or an “other” price ending as a result should strengthen the “accessible” connotation of the product.

3. How do customers perceive price endings?

Chapter 5 investigates how customers perceive price endings. Considered the above-mentioned literature on odd and even prices, I expected:

- odd prices to have a negative effect on perceived expensiveness, quality, prestige, and uniqueness and therefore on product luxuriousness, and
- even prices to have a positive effect on all of the above.

Surprisingly, I find that not only these two kinds of price endings do not have the same effects on perceptions of the product’s price, quality, prestige, etc., but for respondents who declared to be habitual consumers of luxury products, odd and even prices have effects that are the opposite of what had been hypothesized. For example, I find that even prices can be perceived as applied to lower-quality, lower-prestige products, which are, overall, perceived as less luxurious than exactly the same products that have been odd-priced. This is surprising as it goes against most findings in the literature on odd and even prices, and suggests that luxury product might behave differently from other categories of product. Despite these favorable perceptions of odd prices, pricers should be aware that individuals who heavily rely on price as a quality indicator still prefer an even price and are skeptical about the “fairness” of an odd price, as it gives the impression of having been inaccurately calculated.

Other important findings are that the a-priori opinion that the respondent has of the stimulus brand is much more important in determining how prestigious and luxurious the product is than the price ending itself. Moreover, the more the respondent is accustomed to luxury, the more demanding they will be in determining what luxury is terms of price.

4. What price endings do customers prefer?

The last empirical part, Chapter 6, aims at understanding what preferences customers might have in terms of price endings. As I explain in section 6.1, hypotheses drawn from existing literature would lead me to believe that basically all customers of luxury goods, regardless of their profile, should prefer even prices over odd prices. However, given the results on perceptions of price endings in Chapter 5, surprising results could not be excluded. Indeed, I find that, at an aggregated level, odd prices are preferred, both in terms of number of

preferences (they are preferred by 40% of the sample) and in terms of higher appreciation: given the four price modalities that have been tested (i.e., 1560, 1595, 1600 and 1640 euros), on average, 1595 euros has the highest appreciation (i.e., utility): it is significantly more appreciated than 1600 euros, despite the small difference in price, and it is appreciated just as much as 1560 euros, i.e., as a 35-lower price. From the customer's perspective 1560 and 1595 are equivalent and both better than 1600. From the company's perspective this means they are able to set a price ending in -95, benefitting from 35 euros of extra revenue, while also benefitting from the same level of demand of the lower price, i.e., 1560 euros. It seems that the well-known underestimation effect (Bizer & Schindler, 2005; Coulter, 2007; Manning & Sprott, 2009; Schindler & Wiman, 1989) works also with higher prices. Price endings below -60 have not been tested, but we cannot exclude that 1595 might have an equivalent utility to lower prices above 1500, which would allow companies to benefit from an even stronger odd pricing effect (Schindler and Warren, 1988).

The interesting finding here is that all clusters that have been identified in the sample are equally likely to prefer an odd price: 40% of Parvenus, 40% of Patricians, 40% of Snobs and 40% of Low Profile respondents prefer an odd price to all other price endings. Approximately 30% of each segment prefers the lowest price in -60, about 20% of each segment prefer 1600 and as little as 9% of each group prefers the highest price in -40. There is only one exception: Parvenus are less likely than other groups to prefer the lowest price, i.e., 1560, and more likely to prefer the highest price available, i.e., 1640, which is consistent with their declared need to show off status and enjoyment in spending money. I cannot infer from the data whether the expressed preferences for 1560 and 1640 are due to an essentially different price level (i.e., +/- 80 euros) or to different price endings (i.e., -60 vs. -40).

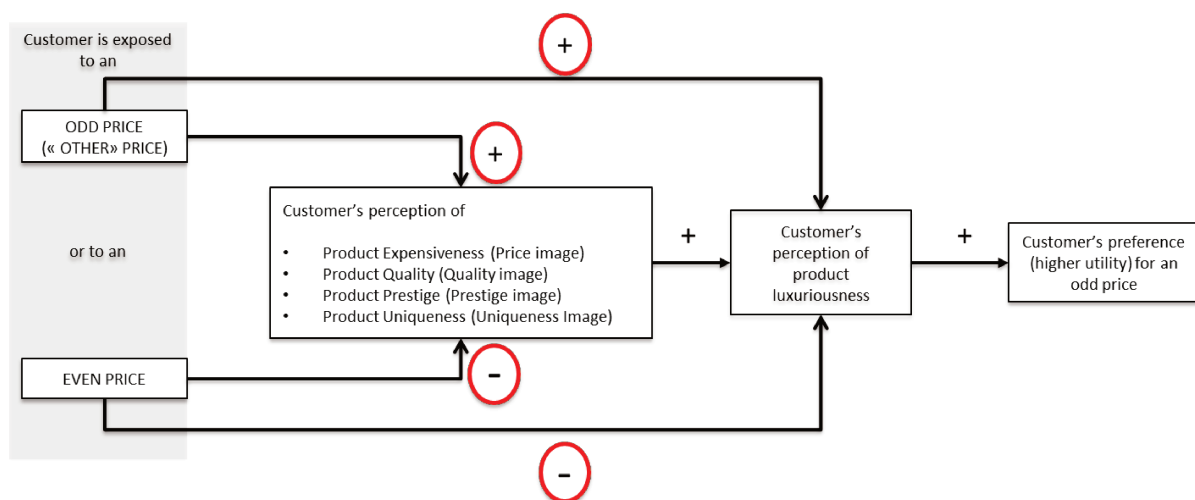
5. Creating the bigger picture

After looking at managerial practices and customers' perceptions of and preferences for different types of price endings, it is important to look at the bigger picture. Odd and "other" prices are applied mainly to accessible handbags, 50-ending prices to intermediate ones and even prices are prevalently applied to relatively inaccessible bags.

Customers seem to appreciate odd prices, regardless of their profile, both in terms of perceptions of luxury (i.e. expensiveness, prestige, quality, uniqueness) and in terms of preferences (i.e., the same product has a bigger chance of being bought when odd-priced than

when even-priced, for example). It seems therefore that the complete conceptual framework, that I proposed back on page 258, needs substantial revision, at least for prices that correspond to the price range that I have tested in my studies⁵⁰. So to conclude my analysis, I propose a revised conceptual framework that should be reliable at least for handbags in the medium price range⁵¹. I hereafter omit proposed moderators, such as Price-quality schema, Prestige sensitivity, etc., because results are mostly inconclusive.

Figure 53 – Revised complete conceptual framework



For lower prices, the original conceptual framework that I proposed in section 6.1., could still be relevant (i.e., odd prices might still have the hypothesized negative effect on perceived luxuriousness in favor of even prices), as more accessible luxury products are more likely to be like the rest of the non-luxury market (Kastanakis & Balabanis, 2012). Also, I cannot exclude that it could be appropriate to describe perceptions of price endings and customers' preferences, for much higher prices than the ones I have tested. From what I observe in my studies, it is possible that starting from a certain price threshold, which I am unable to define from present data, odd prices might adopt a luxury connotation, so that they are interpreted as the highest price ending possible, before moving to the next hundred, rather than being seen as a reduction from it, as instead supported by the perceived gain effect (Choi et al., 2012;

⁵⁰ In all my studies, I have tested prices that mostly belong to a medium price range: in Study 3 the stimuli were 1700 and 1790 euros; in Study 4 the average prices in the four conditions were 1711, 1807, 1087, 1817 euros and in Study 5 the four conjoint analysis modalities were 1560, 1595, 1600, 1640 euros.

⁵¹ In my analyses I defined a low price range as up to 1000 €/€; a medium price range for prices between 1000 and 2000 €/€ and a high price range for prices >2000€/€. However, this might not be the same classification intended by pricing managers and by customers.

Schindler & Kirby, 1997). From this said threshold, that I leave to future research to investigate, odd prices might be seen as “luxury odd prices”.

7.2. Contributions and further research

Given that, in previous literature, odd prices have been investigated mainly in product categories priced less than 100\$, no research has ever provided a definition or a description of odd prices that might be applicable to high prices. Adapting the common definition of odd prices as “prices whose rightmost digits cause it to fall just below a round number” (Schindler & Warren, 1988), I make a first contribution, which is both empirical and conceptual. Based on sample observation, I propose a definition of odd prices in a luxury context as “prices whose ending is up to 10 euros or dollars below any given hundred”. Also, I propose a definition of even prices as “prices ending with at least two zeros, with no decimal figures”. These definitions could also be adopted when investigating price endings for other products whose price is relatively high (e.g., for durable products such as cars, white goods, etc.). In previous literature, alternative price endings have been ignored, so I also contribute by identifying two additional categories of price endings, such as endings in -50 and in “other” figures, such as -10, -20, -30, etc. I leave to future research to define what “odd” and “even” means for prices in the order of hundreds of thousands of euros or dollars and for other currencies that have a much lower value, as could be the case of the Chinese yuan. I also leave to future research to observe the distribution of price endings in other luxury product categories, to confirm the existence of alternative price endings such as -50 and “other” and their relevance.

I then make a contribution by building a bridge between two seemingly unrelated and scarce fields of literature, the one on price endings and the other on luxury pricing.

On the one hand, I am hoping that the determinants of the use of price endings that I identify (product quality and logo prominence) will be of interest to other researchers who study the effectiveness of different price endings, in that they have never been studied before, and they might be relevant in other, non-luxury, contexts. Moreover, I contribute to the existing theories on price endings’ image effects, by finding that low-price, low-quality and low-prestige connotations exist in a FMCG context, and they probably still hold true in an accessible luxury context, but they do not subsist when applied to more expensive products that belong to the category of intermediate luxuries. On the contrary, I find that odd prices’ image effects might be reversed in this context, i.e., odd prices are likely to be interpreted as

more prestigious and luxurious than other prices. As I have mentioned, this positive effect of odd prices could be explained by the fact that -90 and -95 are the highest price endings possible. Another possible explanation is that, in general, handbags' prices are so high that they nullify any negative connotations odd endings might otherwise have.

Also, I contribute by confirming that an odd pricing effect, which Schindler and Warren (1988) define as "a greater than expected price elasticity around prices which are just below a round number", subsists also in this luxury context, at an aggregated level and at least as far as preferences are concerned, and that customers manifest a higher preference for odd prices, regardless of their profile. Because all of my findings are related to a medium price range, further research is needed to understand to which price ranges it applies and how customers might react when faced with different price endings at different levels of luxury (i.e., accessible and inaccessible). Moreover, this research is specific to women handbags. A completely different conceptual framework might be needed for other product categories. For example, it would probably not be appropriate to stretch the current findings to predict perceptions of luxury for an odd-priced luxury car, as the F-type Jaguar illustrated in Appendix 1.

On the other hand, I contribute to the literature on luxury pricing by showing that, despite their limited monetary value compared to leftmost digits, price endings are also important in a luxury context and that customers do pay attention to them. Also, I point out that a positive opinion of a brand plays a much bigger role in determining higher perceived luxuriousness than price endings and that the more a customer has purchased luxury products, the higher the price threshold she will adopt to define where luxury starts, which confirms results from Kapferer & Laurent (2016), who find that "the degree of immersion in luxury and financial resources influences the luxury price frontier of each consumer".

Next, I contribute to research on luxury by showing that customers' segmentation is not stable: of course luxury goods' consumers are not all the same, they are heterogeneous. However, it is impossible to know what clusters will constitute the customer base of a brand, until it is surveyed to understand what motivations push different individuals to engage in luxury consumption. Although there are some recurring segments, like Parvenus or relatively uninterested consumers, it would be best to never adopt a segmentation a priori borrowing from existing literature, but it would be best to re-segment every time the customer base changes and interpret the emerging segments with the help of the existing literature.

Finally, a very important limitation of my studies, motivates me to leave to future research the investigation of price endings with real consumers of luxury goods with real luxury products as stimuli. For example, I was not able to measure perceived hedonism, intended as the set of intangible characteristics, including sensorial and emotional gratification, because I was only able to run my studies with pictures of women handbags and I could not expose respondents to real products. Given the importance of the hedonic aspect of luxury consumption, it is surely essential to conduct more research on price endings and on luxury pricing more in general, with better stimuli and real consumers of the tested categories. Additionally, it would be interesting to analyze sales data as price endings change from one season to the next to observe customers' reaction to price endings, since preferences derived from a conjoint analysis are only a proxy of purchase intention.

7.3. Managerial implications

I conclude this piece of research with some practical recommendations for pricing managers of luxury firms. From what I observe, luxury firms are currently imitating pricing policies from non-luxury contexts, possibly expecting consumers of luxury goods to interpret odd and even prices according to FMCG connotations. Current findings show that, at least for handbags belonging to the intermediate luxury range, consumers might actually prefer odd prices, because of a higher perception of prestige, quality and overall luxury. This is reflected in a solid 40% preference for this price ending, against all theorized predictions. Also, "other" prices are likely to be perceived as more prestigious than and to be preferred to even prices. This is true for habitual consumers of luxury brands, regardless of their profile.

A first recommendation would be survey every new customer base, because each population of luxury consumers is composed by several sub-groups, but it is not possible to know a priori which ones.

Secondly, given the current price ending practices, I suggest that managers continue to adopt odd prices mostly for accessible handbags, even prices for inaccessible ones. Also, 50-endings seem to be good compromise between the odd and even to accompany the transition. I suggest for the intermediate luxury range to adopt odd prices for at least 2 handbags out of 5 to please customers who have a preference for odd prices⁵². In particular, I would suggest using an odd price on items that present at least one of the elements typical of accessible

⁵² Also because, as Choi, Li, Rangan, Chatterjee, & Singh (2014) show, odd prices are effective in increasing the purchase intention for a hedonic product, through what they call the odd-ending price justification effect (OPJE).

luxury, either price, canvas material or logo prominence. Applying an odd price to a discreet exotic leather handbag might create too much of a contrast.

Moreover, given results of conjoint analysis, I would suggest that Gucci keeps their intense odd pricing practice, in particular on products targeted at older audiences and for large cabas, while I would suggest more even prices for YSL (at the moment they have mostly 90-ending prices), especially for small evening bags.

8. Bibliography

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1. Appendix 1

1.1. Examples

Figure 1 – Prices for a room at the Four Seasons in Las Vegas

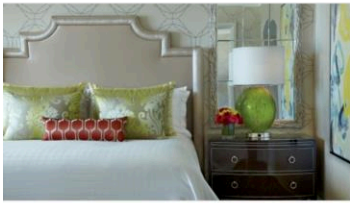
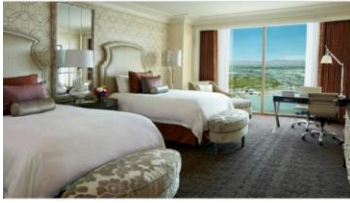
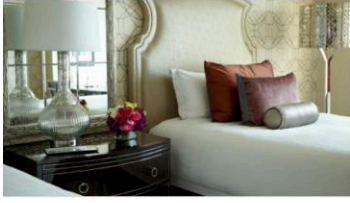
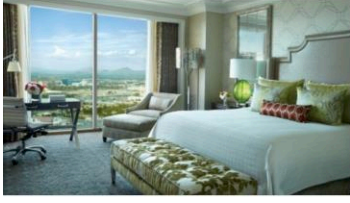
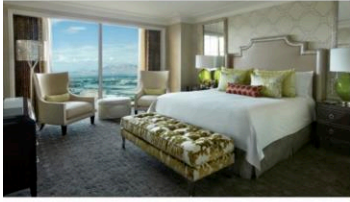
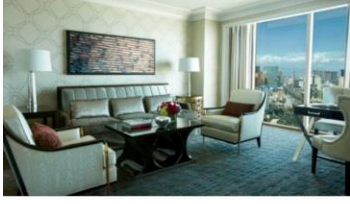
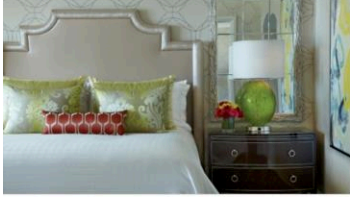
GUEST ROOMS		
	<p>SUPERIOR ACCESSIBLE ROOM</p> <p>VIEW Mountains and surrounding desert</p> <p>BED OPTIONS One king bed</p> <p>ROOM SIZE 500 sq.ft. (46 m2) View floorplan</p> <p>View more details</p>	<p>from USD289 average per night</p> <p>SELECT ROOM</p>
	<p>DELUXE ACCESSIBLE ROOM WITH ROLL-IN SH...</p> <p>VIEW Mountains and surrounding desert</p> <p>BED OPTIONS Two double beds</p> <p>ROOM SIZE 550 sq.ft. (51 m2) View floorplan</p> <p>View more details</p>	<p>from USD339 average per night</p> <p>SELECT ROOM</p>
	<p>DELUXE ACCESSIBLE ROOM</p> <p>VIEW Mountains and surrounding desert</p> <p>BED OPTIONS Two double beds</p> <p>ROOM SIZE 550 sq.ft. (51 m2) View floorplan</p> <p>View more details</p>	<p>from USD339 average per night</p> <p>SELECT ROOM</p>
	<p>STRIP-VIEW ACCESSIBLE ROOM WITH ROLL-IN...</p> <p>VIEW Las Vegas strip</p> <p>BED OPTIONS One king bed</p> <p>ROOM SIZE 500 sq.ft. (46 m2) (average size)</p> <p>View more details</p>	<p>from USD589 average per night</p> <p>SELECT ROOM</p>
SUITES		
	<p>ONE-BEDROOM ACCESSIBLE SUITE WITH ROL...</p> <p>VIEW Mountains and desert</p> <p>BED OPTIONS One king bed</p> <p>ROOM SIZE 1,100 sq.ft. (102 m2) View floorplan</p> <p>View more details</p>	<p>from USD719 average per night</p> <p>SELECT ROOM</p>
	<p>STRIP-VIEW ONE-BEDROOM ACCESSIBLE SUIT...</p> <p>VIEW Las Vegas strip</p> <p>BED OPTIONS One king bed</p> <p>ROOM SIZE 1,100 sq.ft. (102 m2)</p> <p>View more details</p>	<p>from USD769 average per night</p> <p>SELECT ROOM</p>
	<p>SUNRISE/SUNSET ACCESSIBLE SUITE WITH RO...</p> <p>VIEW Sunset/sunrise, including mountains and sur...</p> <p>BED OPTIONS One king bed</p> <p>ROOM SIZE 1,500 sq.ft. (139 m2)</p> <p>View more details</p>	<p>from USD1,399 average per night</p> <p>SELECT ROOM</p>

Figure 2 – Entry level price for a Jaguar F-type

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ACCEPTER

LANGUAGE - FRANCE (FRENCH) RECHERCHEZ UN CONCESSIONNAIRE RECHERCHER LIENS RAPIDES

À PROPOS DE JAGUAR OFFRES SPÉCIALES FLEET & BUSINESS L'EXPÉRIENCE JAGUAR FINANCEMENTS ACTUALITÉS

JAGUAR RACING

JAGUAR

GAMME XE XF XJ **F-TYPE** F-PACE VÉHICULES D'OCCASION VOTRE JAGUAR

APERÇU ÉQUIPEMENTS MODÈLES ACCESSOIRES GALERIE TARIFS ET SPÉCIFICATIONS

F-TYPE

Puissante, agile et unique. Une véritable sportive signée Jaguar.

À PARTIR DE
65 890 €

ACCÉLÉRATION
0-100km/h en 3,5 secondes

VITESSE MAXIMALE
322 km/h

TOUCHEZ POUR INTERAGIR

La gamme F-TYPE propose des voitures de sport comme seul Jaguar sait les créer, avec des performances exaltantes, une maniabilité irréprochable, ainsi qu'un raffinement et une convivialité remarquables au quotidien. Découvrez la dernière descendante d'une lignée de voitures illustres.

2. Appendix 2 – Appendices to Chapter 4

2.1. Additional analysis of cross-section data from Spring 2014 as Multinomial logit models

Table 1 – Multinomial logit euro sample cross section baseline even prices and canvas

VARIABLES	(1) Even € ¹	(2) 50-end €	(3) Odd €	(4) Other-end €
Leather dummy		-0.479 (0.339)	-2.770*** (0.333)	-1.867*** (0.341)
Exotic leather dummy		-3.009*** (0.646)	-8.371*** (1.270)	-10.48*** (1.249)
Logo visibility ²		-0.266 (0.231)	0.654** (0.291)	0.0850 (0.300)
Euro ³		-0.463*** (0.128)	-0.911*** (0.168)	-1.822*** (0.213)
Constant		17.27 (618.0)	19.60 (618.0)	17.46 (618.0)
Observations	925	925	925	925
Brand effects	YES	YES	YES	YES
Log Likelihood	-911.1	-911.1	-911.1	-911.1
Likelihood Ratio	741.3	741.3	741.3	741.3
Prob < χ^2	0	0	0	0

Compared to an even price:

- both odd and other prices are significantly less likely to be used when the material goes from canvas to leather;
- all prices are less likely to be used than even prices when the material goes from canvas to exotic;
- odd prices are more likely to be used than even prices as the logo becomes prominent;
- all prices are less likely to be used than even prices as price goes up.

Table 2 Multinomial logit dollar sample cross section baseline even prices and canvas

VARIABLES	(1) Even \$ ²	(2) 50-end \$	(3) Odd \$	(4) Other-end \$
Leather dummy		0.207 (0.242)	-0.256 (0.332)	-0.426* (0.252)
Exotic leather dummy		-2.023*** (0.426)	-6.300*** (1.102)	-6.124*** (0.888)
Logo visibility ³		0.381 (0.234)	0.173 (0.296)	0.797*** (0.270)
Dollar ³		-0.156*** (0.0544)	-0.642*** (0.151)	-0.570*** (0.106)
Constant		4.002*** (1.037)	4.142*** (1.064)	2.806*** (1.076)
Observations	980	980	980	980
Brand effects	YES	YES	YES	YES
Log Likelihood	-977.6	-977.6	-977.6	-977.6
Likelihood Ratio	682.6	682.6	682.6	682.6
Prob < χ^2	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

¹ Baseline category in the multinomial logit

² As residual of regression on Material included as leather dummy and exotic leather dummy; canvas is the baseline

Compared to an even price:

- in the dollar sample, the distinction between canvas and leather is less defined;
- all price endings are less likely to be used than even prices when going from canvas to exotic leather;
- logo visibility is only a significant predictor for other price endings;
- as price goes up all price endings are less likely to be used than even prices.

2.2. Additional analysis of cross-section data from Spring 2014, material by material

In the following 6 tables, please find the logistic regressions for cross-sectional data collected in Spring 2014 for 9 brands. All coefficients, when significantly different from zero, are in the expected direction.

Table 3 – All brands Spring 2014; Material: Canvas, Currency: Euro

VARIABLES	(1) Odd €	(2) Even €	(3) 50-end €	(4) Other-end €
Logo Visibility1	2.322** (0.924)	0.0612 (0.819)	-2.035*** (0.728)	-0.000132 (0.945)
Euro1	0.00674 (0.173)	0.988*** (0.236)	0.601*** (0.217)	-3.160*** (0.595)
Constant	-0.764 (0.591)	-1.779*** (0.624)	-1.296** (0.645)	-1.021 (1.108)
Observations	248	238	225	248
Brand effects	YES	YES	YES	YES
Log Likelihood	-153.4	-53.53	-60.47	-113
Likelihood Ratio	36.58	30.28	36.03	91.62
Prob < ^2	2.13e-06	1.30e-05	9.35e-07	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 4 – All brands Spring 2014; Material: Leather, Currency: Euro

VARIABLES	(1) Odd €	(2) Even €	(3) 50-end €	(4) Other-end €
Logo Visibility1	0.925*** (0.262)	0.130 (0.241)	-0.417** (0.196)	-0.350 (0.307)
Euro1	-0.411* (0.215)	1.201*** (0.186)	-0.192 (0.151)	-0.876*** (0.209)
Constant	0.218 (0.246)	0.625** (0.248)	-0.607*** (0.214)	-3.590*** (0.539)
Observations	604	436	592	470
Brand effects	YES	YES	YES	YES
Log Likelihood	-252.4	-224.2	-353.4	-177.7
Likelihood Ratio	213.2	114.2	43.55	120.4
Prob < ^2	0	0	6.93e-07	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 5 – All brands Spring 2014; Material: Exotic Leather, Currency: Euro³

VARIABLES	(1) Odd €	(2) Even €	(3) 50-end €	(4) Other-end €
Logo Visibility1		0.622 (0.873)	-0.157 (0.837)	1.847 (1.283)
Euro1	-1.532 (1.766)	0.548** (0.225)	-0.282* (0.164)	-0.295 (0.298)
Constant	-5.451 (3.415)	-1.822* (1.016)	0.515 (0.850)	-3.716*** (1.022)
Observations	28	56	52	63
Brand effects	YES	YES	YES	YES
Log Likelihood	-3.625	-24.11	-24.35	-9.959
Likelihood Ratio	1.379	18.79	7.472	4.203
Prob < ^2	0.240	0.000863	0.0583	0.122

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 6 – All brands Spring 2014; Material: Canvas, Currency: Dollar

VARIABLES	(1) Odd \$	(2) Even \$	(3) 50-end \$	(4) Other-end \$
Logo Visibility1	-0.660 (0.712)	-0.833 (0.754)	0.0719 (0.691)	0.510 (0.843)
Dollar1	-0.457 (0.386)	0.227** (0.114)	0.0715 (0.109)	-0.310** (0.147)
Constant	-0.589 (0.810)	-1.093* (0.653)	-1.182* (0.680)	-1.224 (0.798)
Observations	238	252	252	252
Brand effects	YES	YES	YES	YES
Log Likelihood	-70.24	-125.7	-131.8	-150.2
Likelihood Ratio	39.84	17.96	22.01	40.56
Prob < ^2	1.61e-07	0.00299	0.000522	1.15e-07

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

³ Not enough observations for odd-priced and other-priced exotic leather handbags

Table 7 – All brands Spring 2014; Material: Leather, Currency: Dollar

VARIABLES	(1) Odd \$	(2) Even \$	(3) 50-end \$	(4) Other-end \$
Logo Visibility1	0.190 (0.236)	-0.216 (0.264)	-0.0718 (0.196)	-0.132 (0.284)
Dollar1	-0.865*** (0.172)	0.904*** (0.134)	0.0477 (0.0750)	-0.893*** (0.171)
Constant	-1.024*** (0.270)	-4.041*** (1.011)	0.0958 (0.198)	-2.051*** (0.340)
Observations	574	627	546	502
Brand effects	YES	YES	YES	YES
Log Likelihood	-291.3	-235.2	-344.3	-187.5
Likelihood Ratio	114.9	138.9	46.73	245.6
Prob < ^2	0	0	2.12e-08	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8 – All brands Spring 2014; Material: Exotic Leather, Currency: Dollar

VARIABLES	(1) Odd \$	(2) Even \$	(3) 50-end \$	(4) Other-end \$
Logo Visibility1	1.091 (1.199)	-1.510** (0.623)	1.078 (0.739)	1.729 (1.502)
Dollar1	-0.768 (0.527)	0.125** (0.0614)	-0.320** (0.138)	0.0939 (0.0661)
Constant	-4.586*** (1.612)	0.161 (0.725)	0.757 (0.882)	-3.970*** (1.062)
Observations	67	86	86	67
Brand effects	YES	YES	YES	YES
Log Likelihood	-11.05	-39.15	-26.32	-11
Likelihood Ratio	8.205	19.50	26.97	2.490
Prob < ^2	0.0165	0.000626	2.02e-05	0.288

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

2.3. Additional analysis of panel data as cross-sections

2.3.1. Louis Vuitton

Odd price for Louis Vuitton in Euro, season by season. As expected, for Louis Vuitton (euro) the number of odd prices observed over the four seasons is in general too low to confirm any hypothesis at the season level. However, for season 3, where odd prices constitute 30% of the observed sample, all predictors have significantly different-from-zero coefficients, two of which in the hypothesized direction: as expected, the higher the quality, the lower the probability to observe an odd ending and when the logo is visible it is, on the contrary, more likely to observe an odd ending. The surprising finding here is that as prices in euros increase, also the probability of observing an odd price significantly increases, which disconfirms my hypothesis. Please refer to Table 7 below. The Prob > chi2 of the regression for season 3 is equal to zero, therefore the hypothesis that all coefficients are equal to zero can be rejected at 1 percent significance level. Therefore, the variables of this restricted model are statistically significant.

Table 9 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is odd price in €.

VARIABLES	(1) Odd €	(2) Odd €	(3) Odd €	(4) Odd €
Material	-0.371 (0.422)	-4.296 (1,144)	-3.124*** (0.455)	0.121 (0.568)
Logo Visibility1	1.320 (0.806)	15.91 (4,310)	2.533* (1.310)	-0.385 (0.807)
Euro1	-0.0803 (0.282)	-0.162 (0.301)	0.225*** (0.0827)	-0.374 (0.324)
Constant	-2.093*** (0.589)	0.472 (793.6)	3.284*** (0.493)	-3.765*** (0.943)
Observations	318	337	314	283
Log Likelihood	-80.53	-63.99	-129.3	-38.05
Likelihood Ratio	4.063	12.51	134.3	3.675
Prob < ^2	0.255	0.00582	0	0.299

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Odd price for Louis Vuitton in Dollar, season by season. Despite the small number of odd prices observed in dollars, hypotheses concerning the impact of price and of material quality are confirmed from season 2 to 4. The higher the quality and the higher the price, the lower the probability of observing an odd price. The hypothesis concerning the role of logo visibility is never confirmed: whether the logo is visible or not, it has not impact on price endings. Moreover, in season 1 none of the tree hypotheses is confirmed. Please refer to Table 8 below.

Table 10 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is odd price in \$.

VARIABLES	(1) Odd \$	(2) Odd \$	(3) Odd \$	(4) Odd \$
Material	-1.120 (0.727)	-1.460* (0.869)	-2.223** (0.998)	-3.009*** (1.136)
Logo Visibility1	-0.754 (0.737)	-1.062 (0.781)	-1.073 (0.898)	-0.819 (0.973)
Dollar1	-0.365 (0.265)	-0.734** (0.335)	-0.916** (0.378)	-1.193*** (0.435)
Constant	-1.161 (0.899)	-1.444 (1.057)	-0.388 (1.164)	0.579 (1.263)
Observations	292	323	314	296
Log Likelihood	-76.25	-53.08	-51.74	-49.33
Likelihood Ratio	3.577	9.109	10.97	14.11
Prob < ^2	0.311	0.0279	0.0119	0.00276

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

For both euros and dollars, including price in the regressions as Euro2 or as Dollar2 (i.e., as the residual of Equation 4 and Equation 5 respectively, where price is regressed on material, volume and logo visibility) does not improve the models, although it shows a marginally significant negative coefficient for material and Dollar2 in season 1, which was otherwise non-significant.

Moving on to even prices, as expected, it is easier to confirm all hypotheses, because the number of even prices is much higher. Please refer to Table 9.

Even price for Louis Vuitton in Euro, season by season. All hypotheses are confirmed at 1% significance level, except for the role of logo visibility in season 1, which has a non-significant coefficient. In general, the higher the quality of the material and the higher the price are, the higher the probability of observing an even ending is. Also, when the logo is visible, it is highly unlikely that the product will be even-priced. The Prob>chi2 test is always highly significant, so we can reject the null hypothesis that the coefficients of the three predictors are zero for all the four seasons observed. The same is true, when I substitute Euro1 with Euro2 in the regressions, where all hypotheses are confirmed at 1% significance level, except for logo visibility in season 1, which remains non-significant.

Table 11 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is even price in €.

VARIABLES	(1) Even €	(2) Even €	(3) Even €	(4) Even €
Material	1.545*** (0.267)	1.919*** (0.257)	1.763*** (0.262)	1.730*** (0.293)
Logo Visibility1	0.160 (0.398)	-1.520*** (0.331)	-0.930*** (0.343)	-1.186*** (0.430)
Euro1	0.881*** (0.195)	0.715*** (0.157)	0.540*** (0.146)	0.601*** (0.160)
Constant	-3.868*** (0.460)	-4.163*** (0.456)	-4.230*** (0.488)	-4.806*** (0.600)
Observations	318	337	314	283
Log Likelihood	-124.5	-143.4	-127.8	-86.26
Likelihood Ratio	43.88	117.7	94.21	88.32
Prob < χ^2	1.60e-09	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Even price for Louis Vuitton in Dollar, season by season. As for even prices in dollars, we find a similar pattern: all hypotheses concerning material and price in dollars are confirmed at 1% significance level: when the quality of the material and the prices increase, we are more likely to observe an even price. As for logo visibility, we find an effect at 5% significance level only in season 2, which confirms that when the logo is visible, it is less likely to observe an even price. Please refer to Table 10. Including Dollar2 instead of Dollar1 in the regression (i.e., as the residual of Equation 5, where price is regressed on material, volume and logo visibility) does not improve the model, and all hypotheses are confirmed like in the models proposed in Table 10, at the same significance level.

Table 12 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is even price in \$.

VARIABLES	(1) Even \$	(2) Even \$	(3) Even \$	(4) Even \$
Material	2.257*** (0.414)	0.917*** (0.229)	0.707*** (0.201)	0.822*** (0.206)
Logo Visibility1	0.560 (0.462)	-0.991** (0.390)	-0.0373 (0.357)	0.129 (0.373)
Dollar1	0.675*** (0.169)	0.448*** (0.116)	0.374*** (0.0963)	0.325*** (0.0900)
Constant	-5.035*** (0.666)	-2.864*** (0.405)	-2.019*** (0.345)	-2.331*** (0.366)
Observations	292	323	314	296
Log Likelihood	-101.5	-138.9	-171.2	-153.8
Likelihood Ratio	37.62	52.05	39.23	45.50
Prob < χ^2	3.40e-08	0	1.55e-08	7.24e-10

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 13 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is a 50-ending price in €.

VARIABLES	(1) 50-end €	(2) 50-end €	(3) 50-end €	(4) 50-end €
Material	1.229*** (0.292)	-0.462** (0.188)	0.727*** (0.200)	0.821*** (0.239)
Logo Visibility	-0.887** (0.406)	0.262 (0.352)	0.0376 (0.390)	0.592 (0.518)
Euro1	-0.170 (0.186)	-0.116 (0.108)	-0.0859 (0.0636)	-0.0316 (0.0521)
Constant	-4.429*** (0.567)	-0.273 (0.306)	-3.118*** (0.418)	-3.734*** (0.516)
Observations	318	337	314	283
Log Likelihood	-92.94	-192.3	-119	-84.09
Likelihood Ratio	42.82	8.625	16.44	14.50
Prob < ^2	2.69e-09	0.0347	0.000922	0.00230

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 14 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is a 50-ending price in \$.

VARIABLES	(1) 50-end \$	(2) 50-end \$	(3) 50-end \$	(4) 50-end \$
Material	1.669*** (0.371)	0.930*** (0.190)	0.357** (0.166)	0.319* (0.177)
Logo Visibility	-0.141 (0.425)	0.761* (0.414)	0.102 (0.342)	-0.350 (0.349)
Dollar1	0.565*** (0.155)	0.00461 (0.0411)	-0.0386 (0.0437)	-0.0463 (0.0435)
Constant	-3.982*** (0.579)	-3.307*** (0.393)	-1.685*** (0.313)	-1.648*** (0.335)
Observations	292	323	314	296
Log Likelihood	-117.9	-127.9	-174.3	-162.7
Likelihood Ratio	25.23	29.35	5.549	5.202
Prob < ^2	1.38e-05	1.89e-06	0.136	0.158

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 15 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is a price with an “other” ending in €.

VARIABLES	(1) Other end €	(2) Other end €	(3) Other end €	(4) Other end €
Material	-2.146*** (0.312)	-1.439*** (0.268)	-1.921*** (0.407)	-2.966*** (0.404)
Logo Visibility	-0.157 (0.339)	0.797** (0.351)	-0.616 (0.397)	0.539 (0.408)
Euro1	-0.667*** (0.186)	-0.710*** (0.172)	-1.521*** (0.261)	-1.196*** (0.219)
Constant	3.694*** (0.458)	1.560*** (0.371)	1.437*** (0.507)	5.611*** (0.665)
Observations	318	337	314	283
Log Likelihood	-169.8	-197.9	-158.1	-107.2
Likelihood Ratio	76.58	54.49	65.41	133.1
Prob < χ^2	0	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 16 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is a price with an “other” ending in \$.

VARIABLES	(1) Other end \$	(2) Other end \$	(3) Other end \$	(4) Other end \$
Material	-2.965*** (0.424)	-3.218*** (0.407)	-1.933*** (0.339)	-1.946*** (0.348)
Logo Visibility	-0.276 (0.390)	0.319 (0.391)	0.0103 (0.378)	0.363 (0.394)
Dollar1	-0.957*** (0.163)	-1.135*** (0.162)	-0.748*** (0.140)	-0.738*** (0.145)
Constant	4.392*** (0.575)	4.920*** (0.574)	2.305*** (0.460)	2.420*** (0.478)
Observations	292	323	314	296
Log Likelihood	-158	-150.5	-179.6	-167.7
Likelihood Ratio	72.83	136.7	65.25	67.71
Prob < χ^2	0	0	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

2.3.2. Gucci

Odd price for Gucci, season by season. When looking at each season independently, I confirm that material and price in euro and in dollars have a negative impact on the probability of observing an odd price, while there is no effect on this of the logo visibility variable. Results are very similar when using Euro2 and Dollar2 instead of Euro1 and Dollar1, although they become slightly less significant for the dollar observation (Dollar2). Please refer to Table 15 and 16 for the results with Euro1 and Dollar1 respectively.

Table 17 - Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is odd price in €

VARIABLES	(1) Odd €	(2) Odd €	(3) Odd €	(4) Odd €
Material	-0.862* (0.442)	-2.393*** (0.661)	-3.038*** (0.719)	-4.541*** (1.369)
Logo Visibility1	-0.118 (0.371)	-0.195 (0.402)	-0.237 (0.428)	-1.610* (0.842)
Euro1	-0.934*** (0.339)	-1.707*** (0.460)	-1.996*** (0.505)	-2.008** (0.872)
Constant	0.621 (0.797)	2.603** (1.092)	3.790*** (1.185)	5.486** (2.178)
Observations	181	211	207	164
Log Likelihood	-105.8	-91.96	-88.06	-36.97
Likelihood Ratio	10.77	23.89	32.71	21.73
Prob < ^2	0.0130	2.64e-05	3.71e-07	7.43e-05

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 18 - Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is odd price in \$

VARIABLES	(1) Odd \$	(2) Odd \$	(3) Odd \$	(4) Odd \$
Material	-0.959*** (0.314)	-2.359*** (0.666)	-2.540*** (0.677)	-1.363* (0.817)
Logo Visibility1	-0.485 (0.318)	-0.0977 (0.321)	0.126 (0.323)	0.137 (0.538)
Dollar1	-0.184** (0.0882)	-0.612*** (0.195)	-0.606*** (0.203)	-0.205 (0.237)
Constant	1.225** (0.585)	2.991*** (1.120)	3.512*** (1.129)	0.601 (1.424)
Observations	266	274	280	182
Log Likelihood	-161	-139.4	-144.9	-65.40
Likelihood Ratio	22.34	26	37.66	7.309
Prob < ^2	5.53e-05	9.52e-06	3.34e-08	0.0627

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

All models are significantly better than corresponding models with only the constant as predictor as shown by the Prob > chi2 that is always <0,05 except for season 4 in dollars, where the coefficients of the predictors are not, in any case, significantly different from zero.

Even price for Gucci, season by season. Interestingly, while for Louis Vuitton all hypotheses were confirmed for even prices, for Gucci, even though there are many observations of even endings, I can only confirm hypotheses concerning the role of Material and price in euros, but not those concerning logo visibility: as expected, as prices and material quality increase we have a bigger chance to observe an even ending, however, whether the logo is visible or not does not seem to have any impact on the price ending determination. If I replace Euro1 with Euro2, then I find a significant effect of logo visibility only in season 1: if the logo is visible then it is less likely to observe an even price. I cannot reject the null hypotheses that the coefficient is zero for this predictor for the other three seasons. Please refer to Table 17 and 18 for results on the determinants of even endings, with Euro1 and Euro2 respectively.

Table 19 - Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is even price in €; price is operationalized as Euro 1.

VARIABLES	(1) Even €	(2) Even €	(3) Even €	(4) Even €
Material	3.980*** (0.739)	2.233*** (0.443)	2.412*** (0.446)	3.599*** (0.661)
Logo Visibility1	-0.958 (0.619)	0.233 (0.350)	0.623 (0.391)	0.575 (0.517)
Euro1	1.137*** (0.440)	1.152*** (0.304)	1.324*** (0.328)	1.746*** (0.460)
Constant	-9.557*** (1.572)	-4.698*** (0.845)	-5.236*** (0.876)	-7.486*** (1.302)
Observations	181	211	207	164
Log Likelihood	-57.91	-117.3	-109.2	-76.44
Likelihood Ratio	70.20	46.45	52.68	69.66
Prob < χ^2	0	4.56e-10	0	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 20 - Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is even price in €; price is operationalized as Euro 2.

VARIABLES	(1) Even €	(2) Even €	(3) Even €	(4) Even €
Material	3.714*** (0.668)	1.854*** (0.393)	2.043*** (0.390)	3.584*** (0.643)
Logo Visibility1	-1.440** (0.587)	-0.309 (0.326)	-0.0404 (0.347)	-0.417 (0.414)
Euro2	0.835* (0.468)	0.816*** (0.295)	0.914*** (0.301)	1.909*** (0.488)
Constant	-9.051*** (1.436)	-4.012*** (0.759)	-4.608*** (0.787)	-7.465*** (1.270)
Observations	181	211	207	164
Log Likelihood	-60.07	-122.1	-114.9	-75.96
Likelihood Ratio	65.88	36.92	41.20	70.63
Prob < χ^2	0	4.78e-08	5.92e-09	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

When looking at the dollar sample, the results confirm again that, as expected, when the quality of the material increases, it is more likely to observe an even price and the coefficient of this predictor is significantly different from zero at 1% significance level for all four seasons, both including Dollar1 and Dollar2 in the regression. Logo visibility has a significant negative impact on the probability of observing an even ending in season 3 when including price as Dollar1, and in season 2 to 4 when including price as Dollar2 (although only marginally in season 4). This confirms the hypothesis that more discreet handbags are usually even-priced. Lastly, there is some evidence in season 2 and 3 (both with Dollar1 and Dollar2) that as price increases, we are more likely to observe an even price at a 5% and 10% significance level respectively. Please refer to Tables 19 and 20.

Table 21 - Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is even price in \$; price is operationalized as Dollar1.

VARIABLES	(1) Even \$	(2) Even \$	(3) Even \$	(4) Even \$
Material	3.572*** (0.416)	1.878*** (0.318)	2.477*** (0.329)	1.910*** (0.381)
Logo Visibility1	-0.313 (0.525)	-0.487 (0.325)	-1.087*** (0.375)	-0.545 (0.389)
Dollar1	0.0567 (0.0433)	0.221** (0.0885)	0.111* (0.0622)	0.122 (0.0898)
Constant	-9.434*** (1.050)	-4.671*** (0.659)	-6.162*** (0.763)	-4.415*** (0.799)
Observations	266	274	280	182
Log Likelihood	-80.10	-138	-127.8	-99.49
Likelihood Ratio	140.1	61.75	101.7	45.32
Prob < χ^2	0	0	0	7.90e-10

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 22 - Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is even price in \$; price is operationalized as Dollar2.

VARIABLES	(1) Even \$	(2) Even \$	(3) Even \$	(4) Even \$
Material	3.586*** (0.417)	1.792*** (0.299)	2.467*** (0.327)	1.844*** (0.356)
Logo Visibility1	-0.344 (0.525)	-0.664** (0.319)	-1.157*** (0.373)	-0.657* (0.379)
Dollar2	0.0475 (0.0414)	0.182** (0.0801)	0.0928* (0.0559)	0.0807 (0.0678)
Constant	-9.471*** (1.052)	-4.525*** (0.637)	-6.160*** (0.763)	-4.326*** (0.773)
Observations	266	274	280	182
Log Likelihood	-80.39	-139.2	-128.3	-100.2
Likelihood Ratio	139.5	59.37	100.7	43.92
Prob < χ^2	0	0	0	1.57e-09

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 23 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is a 50-ending price in €.

VARIABLES	(1) 50-end €	(2) 50-end €	(3) 50-end €	(4) 50-end €
Material	-0.0213 (0.338)	-0.194 (0.289)	-0.356 (0.302)	-1.236*** (0.387)
Logo Visibility1	0.0107 (0.393)	-0.514 (0.326)	-0.947*** (0.348)	0.0839 (0.408)
Euro1	-0.109 (0.166)	-0.202 (0.171)	-0.286 (0.219)	-0.750** (0.307)
Constant	-1.196* (0.675)	-0.342 (0.572)	0.103 (0.608)	2.080*** (0.760)
Observations	181	211	207	164
Log Likelihood	-96.43	-131.1	-130.9	-102.1
Likelihood Ratio	0.824	4.500	9.329	19.11
Prob < ^2	0.844	0.212	0.0252	0.000260

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 24 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is a 50-ending price in \$.

VARIABLES	(1) 50-end \$	(2) 50-end \$	(3) 50-end \$	(4) 50-end \$
Material	-0.613** (0.251)	-0.436 (0.269)	-1.052*** (0.405)	-3.308*** (0.829)
Logo Visibility1	-0.852** (0.375)	0.121 (0.312)	-0.0870 (0.313)	-0.734* (0.411)
Dollar1	-0.0319 (0.0423)	-0.0734 (0.0669)	-0.255** (0.125)	-0.848*** (0.246)
Constant	-0.0338 (0.509)	-0.390 (0.533)	0.908 (0.723)	5.462*** (1.420)
Observations	266	274	280	182
Log Likelihood	-136.3	-144.5	-152.6	-104.1
Likelihood Ratio	11.42	3.960	16.10	36.18
Prob < ^2	0.00968	0.266	0.00108	6.85e-08

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 25 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is a price with an “other” ending in €.

VARIABLES	(1) Other-end €	(2) Other-end €	(3) Other-end €	(4) Other-end €
Material	-3.174*** (0.710)	-7.600*** (1.771)	-8.097*** (2.266)	-4.936*** (1.529)
Logo Visibility1	-0.116 (0.442)	0.774 (0.728)	0.680 (0.880)	-1.661** (0.797)
Euro1	-1.052** (0.480)	-4.015*** (1.104)	-4.660*** (1.436)	-3.070*** (0.971)
Constant	4.524*** (1.188)	9.349*** (2.512)	9.721*** (3.208)	5.895** (2.399)
Observations	181	211	207	164
Log Likelihood	-83.29	-42.24	-34.92	-35.30
Likelihood Ratio	40.74	47.81	37.79	20.24
Prob < ^2	7.41e-09	2.34e-10	3.13e-08	0.000151

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 26 – Each observed season is treated like a cross section; all predictors are introduced together; the dependent variable is a price with an “other” ending in €.

VARIABLES	(1) Other-end \$	(2) Other-end \$	(3) Other-end \$	(4) Other-end \$
Material	-2.541*** (0.877)	-0.827*** (0.320)	-0.840*** (0.284)	-0.425 (0.444)
Logo Visibility1	1.176*** (0.433)	0.0929 (0.317)	0.449 (0.407)	1.270* (0.674)
Dollar1	-0.385 (0.245)	-0.0969 (0.0877)	0.0370 (0.0442)	0.0529 (0.0477)
Constant	2.877** (1.448)	0.333 (0.600)	-0.235 (0.565)	-1.740* (0.927)
Observations	266	274	280	182
Log Likelihood	-98.60	-140.4	-103.7	-49.06
Likelihood Ratio	47.79	9.740	11.28	5.497
Prob < ^2	2.36e-10	0.0209	0.0103	0.139

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

2.4. Additional analysis of panel data for both brands, material by material

Please find in the following tables the details of the logistic regressions run for both brands together as panel data, one material at a time. Results that go against the expected findings are highlighted in red.

Table 27 – Panel data for both brands; Material: Canvas; Currency: Euro.

VARIABLES	(1) Odd €	(2) Even €	(3) 50-end €	(4) Other-end €
Logo Visibility1	1.743** (0.872)	-1.357** (0.568)	-0.438 (0.599)	0.537 (0.553)
Euro1	1.129***	1.016*** (0.330)	0.195 (0.263)	-1.124*** (0.204)
Constant	-2.119*** (0.341)	-2.206*** (0.399)	-2.415*** (0.396)	0.518** (0.258)
Observations	757	757	757	757
Season effects	YES	YES	YES	YES
Brand effects	YES	YES	YES	YES
Log Likelihood	-271.3	-156.8	-262.6	-403.2
Likelihood Ratio	208.4	33.25	84.27	210.2
Prob < ^2	0	9.37e-06	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 28 – Panel data for both brands; Material: Leather; Currency: Euro.

VARIABLES	(1) Odd €	(2) Even €	(3) 50-end €	(4) Other-end €
Logo Visibility1	0.317 (0.196)	-0.151 (0.157)	-0.127 (0.149)	0.0983 (0.169)
Euro1	-0.707*** (0.176)	1.271*** (0.118)	-0.297*** (0.112)	-0.859*** (0.123)
Constant	-1.245*** (0.246)	-0.682*** (0.210)	-1.031*** (0.197)	-2.524*** (0.229)
Observations	999	999	999	999
Season effects	YES	YES	YES	YES
Brand effects	YES	YES	YES	YES
Log Likelihood	-364.6	-530.4	-570.6	-436.4
Likelihood Ratio	105.4	187.6	67.66	233.4
Prob < ^2	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 29 – Panel data for both brands; Material: Exotic Leather; Currency: Euro.⁴

VARIABLES	(1) Odd €	(2) Even €	(3) 50-end €
Logo Visibility1	-0.174 (1.236)	-0.261 (0.378)	0.484 (0.391)
Euro1	-1.112* (0.672)	0.270*** (0.0945)	-0.194** (0.0769)
Constant	-3.997*** (1.506)	1.772*** (0.461)	-2.286*** (0.522)
Observations	93	212	212
Season effects	YES	YES	YES
Brand effects	YES	YES	YES
Log Likelihood	-13.67	-102.4	-95.26
Likelihood Ratio	5.647	26.87	23.30
Prob < ^2	0.227	0.000153	0.000701

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 30 – Panel data for both brands; Material: Canvas; Currency: Dollar.

VARIABLES	(1) Odd \$	(2) Even \$	(3) 50-end \$	(4) Other-end \$
Logo Visibility1	-0.435 (0.462)	-0.442 (0.544)	-0.383 (0.444)	1.085** (0.539)
Dollar1	-0.422** (0.199)	0.547*** (0.140)	0.0717 (0.141)	-0.250** (0.116)
Constant	-0.145 (0.286)	-3.420*** (0.393)	-1.207*** (0.272)	-0.510** (0.237)
Observations	808	808	808	808
Season effects	YES	YES	YES	YES
Brand effects	YES	YES	YES	YES
Log Likelihood	-239.9	-310.9	-342.4	-486.9
Likelihood Ratio	84.81	39.51	37.88	124.6
Prob < ^2	0	5.69e-07	1.19e-06	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

⁴ Note for “Other-end €” as dependent variable: 109 failures so coefficients for the logistic regression could not be computed.

Table 31 – Panel data for both brands; Material: Leather; Currency: Dollar.

VARIABLES	(1) Odd \$	(2) Even \$	(3) 50-end \$	(4) Other-end \$
Logo Visibility1	-0.191 (0.178)	-0.0693 (0.164)	0.122 (0.143)	0.0676 (0.156)
Dollar1	-0.485*** (0.110)	0.686*** (0.0804)	0.397*** (0.0717)	-0.971*** (0.0947)
Constant	-1.179*** (0.262)	-0.986*** (0.239)	-0.140 (0.199)	-3.267*** (0.260)
Observations	1,066	1,066	1,066	1,066
Season effects	YES	YES	YES	YES
Brand effects	YES	YES	YES	YES
Log Likelihood	-450.9	-509	-625.8	-512.3
Likelihood Ratio	167.3	116.6	54.43	225.1
Prob < ^2	0	0	6.03e-10	0

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 32 – Panel data for both brands; Material: Exotic Leather; Currency: Dollar.

VARIABLES	(1) Odd \$	(2) Even \$	(3) 50-end \$	(4) Other-end \$
Logo Visibility1	0.649 (0.604)	-0.780** (0.319)	0.607 (0.370)	0.818 (0.893)
Dollar1	-0.277** (0.121)	0.0916*** (0.0270)	-0.135*** (0.0421)	0.0537 (0.0336)
Constant	-2.324*** (0.532)	1.360*** (0.313)	-2.621*** (0.466)	-19.25 (5,049)
Observations	203	319	319	245
Season effects	YES	YES	YES	YES
Brand effects	YES	YES	YES	YES
Log Likelihood	-54.95	-164.3	-120.3	-34.12
Likelihood Ratio	16.28	41.17	58.92	8.904
Prob < ^2	0.00267	2.68e-07	7.45e-11	0.113

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

2.5. Additional analysis of panel data for both brands with Multinomial logistic regressions

Table 33 – Panel data euro Gucci and Louis Vuitton with brand and season effects

VARIABLES	(1) Even € ²	(2) 50-end €	(3) Odd €	(4) Other-end €
Leather dummy		-0.911*** (0.188)	-2.075*** (0.211)	-2.065*** (0.180)
Exotic leather dummy		-2.940*** (0.328)	-6.827*** (0.712)	-9.788*** (0.754)
Logo visibility ⁵		0.285* (0.151)	0.582*** (0.210)	0.494*** (0.171)
Euro ⁵		-0.338*** (0.0765)	-0.726*** (0.131)	-1.361*** (0.112)
Constant		0.999*** (0.246)	1.374*** (0.275)	1.908*** (0.240)
Observations	2,011	2,011	2,011	2,011
Brand and Season effects	YES	YES	YES	YES
Log Likelihood	-2041	-2041	-2041	-2041
Likelihood Ratio	1218	1218	1218	1218
Prob < ^2	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 34 - Panel data dollar Gucci and Louis Vuitton with brand and season effects

VARIABLES	(1) Even \$ ²	(2) 50-end \$	(3) Odd \$	(4) Other-end \$
Leather dummy		0.112 (0.156)	-0.223 (0.196)	-0.778*** (0.145)
Exotic leather dummy		-1.786*** (0.216)	-4.599*** (0.545)	-7.008*** (0.508)
Logo visibility ⁵		0.440*** (0.150)	-0.0333 (0.195)	0.619*** (0.161)
Dollar ⁵		-0.0755*** (0.0236)	-0.428*** (0.0814)	-0.618*** (0.0618)
Constant		0.552*** (0.210)	0.896*** (0.241)	1.262*** (0.204)
Observations	2,223	2,223	2,223	2,223
Brand and Season effects	YES	YES	YES	YES
Log Likelihood	-2401	-2401	-2401	-2401
Likelihood Ratio	1050	1050	1050	1050
Prob < ^2	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

⁵ As residual of regression on Material included as leather dummy and exotic leather dummy; canvas is the baseline.

2.6. Additional analysis for both brands, different operationalization of Logo Visibility and Material; panel data.

In the following tables, prices in euros and in dollars are included in the regressions as residuals of material, logo visibility because both these variables are already accounted for by the 5 dummies. In general, all dummies' coefficients compared to the baseline “Canvas / Visible logo” should be:

- Negative when predicting an odd price;
- Positive when predicting an even price.

In columns 1 and 2, the absolute values of coefficients of dummies “No Visible Logo” should be greater than those of dummies “Visible Logo” with the same material, if Logo Visibility were a significant and positive predictor of the use of an odd price and a significant and negative predictor of the use of an even price.

Table 35 – Panel data; both brands; dummy baseline: Canvas with visible logo; Currency: Euro.

VARIABLES	(1) Odd €	(2) Even €	(3) 50-end €	(4) Other-end €
Canvas / No visible Logo	-1.591** (0.775)	1.741*** (0.501)	0.441 (0.517)	-0.366 (0.546)
Leather/ Visible Logo	-0.634*** (0.187)	1.979*** (0.189)	0.503*** (0.158)	-1.344*** (0.154)
Leather / No Visible Logo	-1.139*** (0.191)	2.292*** (0.183)	0.583*** (0.152)	-1.530*** (0.157)
Exotic Leather / Visible Logo	-3.138*** (1.026)	3.217*** (0.327)	0.905*** (0.305)	
Exotic Leather / No Visible Logo	-3.294*** (0.607)	4.113*** (0.280)	-0.312 (0.267)	-3.578*** (0.602)
Euro2	-0.0383 (0.0733)	0.446*** (0.0783)	-0.0898** (0.0452)	-0.364*** (0.0789)
Constant	-0.424** (0.189)	-2.985*** (0.215)	-1.608*** (0.183)	-0.319* (0.171)
Observations	2,011	2,011	2,011	1,949
Brand effects	YES	YES	YES	YES
Season effects	YES	YES	YES	YES
Log Likelihood	-736.4	-906.4	-997.8	-940.9
Likelihood Ratio	225.2	527.1	150.1	682.4
Prob < χ^2	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Table 36 – Panel data; both brands; dummy baseline: Canvas with visible logo; Currency: Dollar.

VARIABLES	(1) dodd2	(2) deven2	(3) d502	(4) dother2
Canvas / No visible Logo	0.213 (0.423)	0.545 (0.454)	0.905** (0.395)	-1.195** (0.512)
Leather/ Visible Logo	-0.249 (0.215)	0.736*** (0.163)	0.679*** (0.149)	-1.238*** (0.154)
Leather / No Visible Logo	-0.262 (0.199)	0.930*** (0.156)	0.686*** (0.144)	-1.433*** (0.154)
Exotic Leather / Visible Logo	-1.413*** (0.516)	1.906*** (0.269)	1.085*** (0.265)	-3.813*** (0.728)
Exotic Leather / No Visible Logo	-2.044*** (0.339)	3.374*** (0.223)	-0.486** (0.239)	-3.321*** (0.418)
Dollar2	-0.131*** (0.0466)	0.140*** (0.0291)	-0.0235 (0.0206)	-0.219*** (0.0457)
Constant	-0.279 (0.184)	-2.525*** (0.185)	-1.680*** (0.164)	-0.356** (0.149)
Observations	2,223	2,223	2,223	2,223
Brand effects	YES	YES	YES	YES
Season effects	YES	YES	YES	YES
Log Likelihood	-765.6	-1060	-1150	-1130
Likelihood Ratio	311.5	475	116.6	621
Prob < ^2	0	0	0	0

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

2.7. Additional analysis: transition matrices for each brand individually

Table 37 – Louis Vuitton – Panel – Transition matrices in euros

All references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Missing	Total
Even	100	2	28	49	50	229
%	43,67	0,87	12,23	21,4	21,83	100
Odd	3	13	6	90	29	141
%	2,13	9,22	4,26	63,83	20,57	100
-50	32	50	37	25	28	172
%	18,6	29,07	21,51	14,53	16,28	100
Other	37	54	70	211	55	427
%	8,67	12,65	16,39	49,41	12,88	100
Missing	51	8	22	46	707	834
%	6,12	0,96	2,64	5,52	84,77	100
Total	223	127	163	421	869	1,803
%	12,37	7,04	9,04	23,35	48,2	100

All references, If price increase > 0

	Even	Odd	-50	Other	Missing	Total
Even	43	1	26	40	28	138
%	31,16	0,72	18,84	28,99	20,29	100
Odd	2	1	4	90	26	123
%	1,63	0,81	3,25	73,17	21,14	100
-50	29	47	15	18	23	132
%	21,97	35,61	11,36	13,64	17,42	100
Other	35	41	70	149	44	339
%	10,32	12,09	20,65	43,95	12,98	100
Missing	51	8	22	46	707	834
%	6,12	0,96	2,64	5,52	84,77	100
Total	160	98	137	343	828	1,566
%	10,22	6,26	8,75	21,9	52,87	100

No missing references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Total
Even	100	2	29	50	181
%	55,25	1,1	16,02	27,62	100
Odd	3	13	6	90	112
%	2,68	11,61	5,36	80,36	100
-50	32	50	37	26	145
%	22,07	34,48	25,52	17,93	100
Other	37	54	70	213	374
%	9,89	14,44	18,72	56,95	100
Total	172	119	142	379	812
%	21,18	14,66	17,49	46,67	100

No missing references, if price increase > 0

	Even	Odd	-50	Other	Total
Even	43	1	27	41	112
%	38,39	0,89	24,11	36,61	100
Odd	2	1	4	90	97
%	2,06	1,03	4,12	92,78	100
-50	29	47	15	19	110
%	26,36	42,73	13,64	17,27	100
Other	35	41	70	150	296
%	11,82	13,85	23,65	50,68	100
Total	109	90	116	300	615
%	17,72	14,63	18,86	48,78	100

Table 38 – Louis Vuitton – Panel – Transition matrices in dollars

All references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Missing	Total
Even	108	3	28	32	31	202
%	53,47	1,49	13,86	15,84	15,35	100
Odd	3	17	5	21	4	50
%	6,00	34,00	10,00	42,00	8,00	100
-50	36	1	90	25	27	179
%	20,11	0,56	50,28	13,97	15,08	100
Other	57	17	50	310	64	498
%	11,45	3,41	10,04	62,25	12,85	100
Missing	40	4	31	55	744	874
%	4,58	0,46	3,55	6,29	85,13	100
Total	244	42	204	443	870	1,803
%	13,53	2,33	11,31	24,57	48,25	100

All references, If price increase > 0

	Even	Odd	-50	Other	Missing	Total
Even	26	3	28	30	29	116
%	22,41	2,59	24,14	25,86	25	100
Odd	3	2	5	19	4	33
%	9,09	6,06	15,15	57,58	12,12	100
-50	35	1	16	25	24	101
%	34,65	0,99	15,84	24,75	23,76	100
Other	57	16	50	197	58	378
%	15,08	4,23	13,23	52,12	15,34	100
Missing	40	4	31	55	744	874
%	4,58	0,46	3,55	6,29	85,13	100
Total	161	26	130	326	859	1,502
%	10,72	1,73	8,66	21,7	57,19	100

No missing references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Total
Even	108	3	28	32	171
%	63,16	1,75	16,37	18,71	100
Odd	3	17	5	21	46
%	6,52	36,96	10,87	45,65	100
-50	36	1	90	26	153
%	23,53	0,65	58,82	16,99	100
Other	57	17	50	312	436
%	13,07	3,9	11,47	71,56	100
Total	204	38	173	391	806
%	25,31	4,71	21,46	48,51	100

No missing references, if price increase > 0

	Even	Odd	-50	Other	Total
Even	26	3	28	30	87
%	29,89	3,45	32,18	34,48	100
Odd	3	2	5	19	29
%	10,34	6,9	17,24	65,52	100
-50	35	1	16	26	78
%	44,87	1,28	20,51	33,33	100
Other	57	16	50	199	322
%	17,7	4,97	15,53	61,8	100
Total	121	22	99	274	516
%	23,45	4,26	19,19	53,1	100

Table 39 – Gucci – Panel – Transition matrices in euros

All references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Missing	Total
Even	106	2	15	0	71	194
%	54,64	1,03	7,73	0	36,6	100
Odd	21	52	27	5	33	138
%	15,22	37,68	19,57	3,62	23,91	100
-50	26	7	87	4	61	185
%	14,05	3,78	47,03	2,16	32,97	100
Other	13	10	15	27	17	82
%	15,85	12,2	18,29	32,93	20,73	100
Missing	58	26	69	12	961	1,126
%	5,15	2,31	6,13	1,07	85,35	100
Total	224	97	213	48	1,143	1,725
%	12,99	5,62	12,35	2,78	66,26	100

No missing references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Total
Even	106	2	15	0	123
%	86,18	1,63	12,2	0	100
Odd	21	52	27	5	105
%	20	49,52	25,71	4,76	100
-50	26	7	87	4	124
%	20,97	5,65	70,16	3,23	100
Other	13	10	15	27	65
%	20	15,38	23,08	41,54	100
Total	166	71	144	36	417
%	39,81	17,03	34,53	8,63	100

All references, If price increase > 0

	Even	Odd	-50	Other	Missing	Total
Even	20	0	8	0	37	65
%	30,77	0	12,31	0	56,92	100
Odd	17	0	20	4	9	50
%	34	0	40	8	18	100
-50	19	5	15	2	31	72
%	26,39	6,94	20,83	2,78	43,06	100
Other	13	8	13	0	5	39
%	33,33	20,51	33,33	0	12,82	100
Missing	58	26	69	12	961	1,126
%	5,15	2,31	6,13	1,07	85,35	100
Total	127	39	125	18	1,043	1,352
%	9,39	2,88	9,25	1,33	77,14	100

No missing references, if price increase > 0

	Even	Odd	-50	Other	Total
Even	20	0	8	0	28
%	71,43	0	28,57	0	100
Odd	17	0	20	4	41
%	41,46	0	48,78	9,76	100
-50	19	5	15	2	41
%	46,34	12,2	36,59	4,88	100
Other	13	8	13	0	34
%	38,24	23,53	38,24	0	100
Total	69	13	56	6	144
%	47,92	9,03	38,89	4,17	100

Table 40 – Gucci – Panel – Transition matrices in dollars

All references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Missing	Total
Even	113	4	7	11	110	245
%	46,12	1,63	2,86	4,49	44,9	100
Odd	26	91	31	14	74	236
%	11,02	38,56	13,14	5,93	31,36	100
-50	17	15	80	17	66	195
%	8,72	7,69	41,03	8,72	33,85	100
Other	11	5	14	53	61	144
%	7,64	3,47	9,72	36,81	42,36	100
Missing	83	51	75	18	678	905
%	9,17	5,64	8,29	1,99	74,92	100
Total	250	166	207	113	989	1,725
%	14,49	9,62	12	6,55	57,33	100

No missing references, both prices that have been increased and prices that have been kept the same

	Even	Odd	-50	Other	Total
Even	113	4	7	11	135
%	83,7	2,96	5,19	8,15	100
Odd	26	91	31	14	162
%	16,05	56,17	19,14	8,64	100
-50	17	15	80	17	129
%	13,18	11,63	62,02	13,18	100
Other	11	5	14	53	83
%	13,25	6,02	16,87	63,86	100
Total	167	115	132	95	509
%	32,81	22,59	25,93	18,66	100

All references, If price increase > 0

	Even	Odd	-50	Other	Missing	Total
Even	26	3	5	10	72	116
%	22,41	2,59	4,31	8,62	62,07	100
Odd	21	10	24	10	44	109
%	19,27	9,17	22,02	9,17	40,37	100
-50	12	13	10	16	29	80
%	15	16,25	12,5	20	36,25	100
Other	9	2	9	9	43	72
%	12,5	2,78	12,5	12,5	59,72	100
Missing	83	51	75	18	678	905
%	9,17	5,64	8,29	1,99	74,92	100
Total	151	79	123	63	866	1,282
%	11,78	6,16	9,59	4,91	67,55	100

No missing references, if price increase > 0

	Even	Odd	-50	Other	Total
Even	26	3	5	10	44
%	59,09	6,82	11,36	22,73	100
Odd	21	10	24	10	65
%	32,31	15,38	36,92	15,38	100
-50	12	13	10	16	51
%	23,53	25,49	19,61	31,37	100
Other	9	2	9	9	29
%	31,03	6,9	31,03	31,03	100
Total	68	28	48	45	189
%	35,98	14,81	25,4	23,81	100

2.8. Additional analyses on price ending transitions and price increases

2.8.1. Percentage price increases histograms

Figure 3 – Percentage price increase distribution for Euro prices, positively skewed

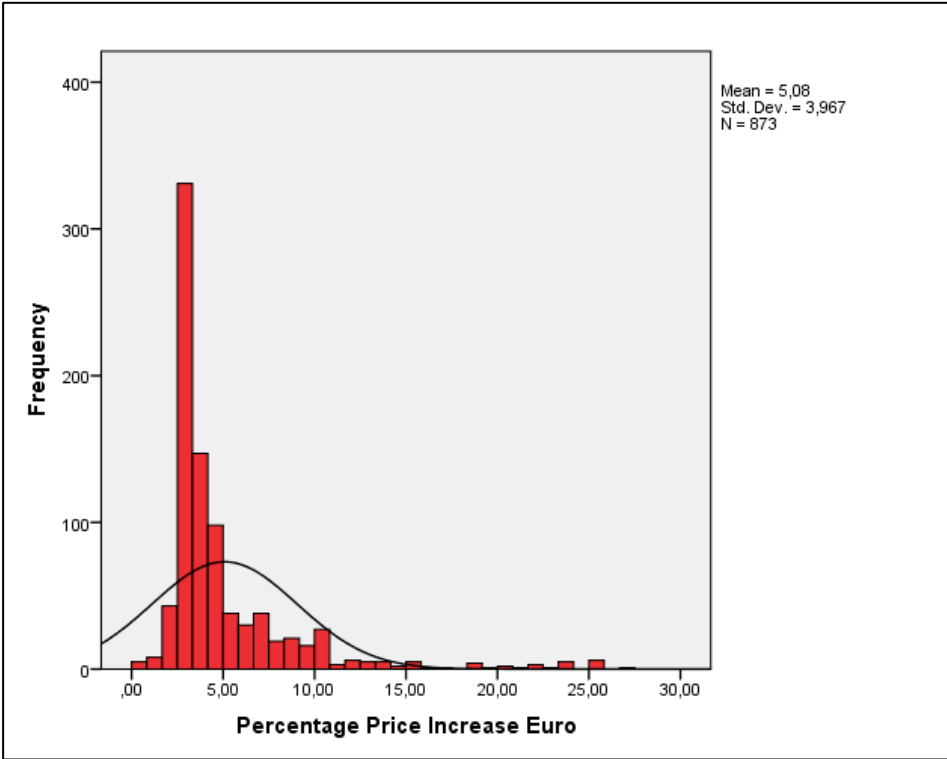
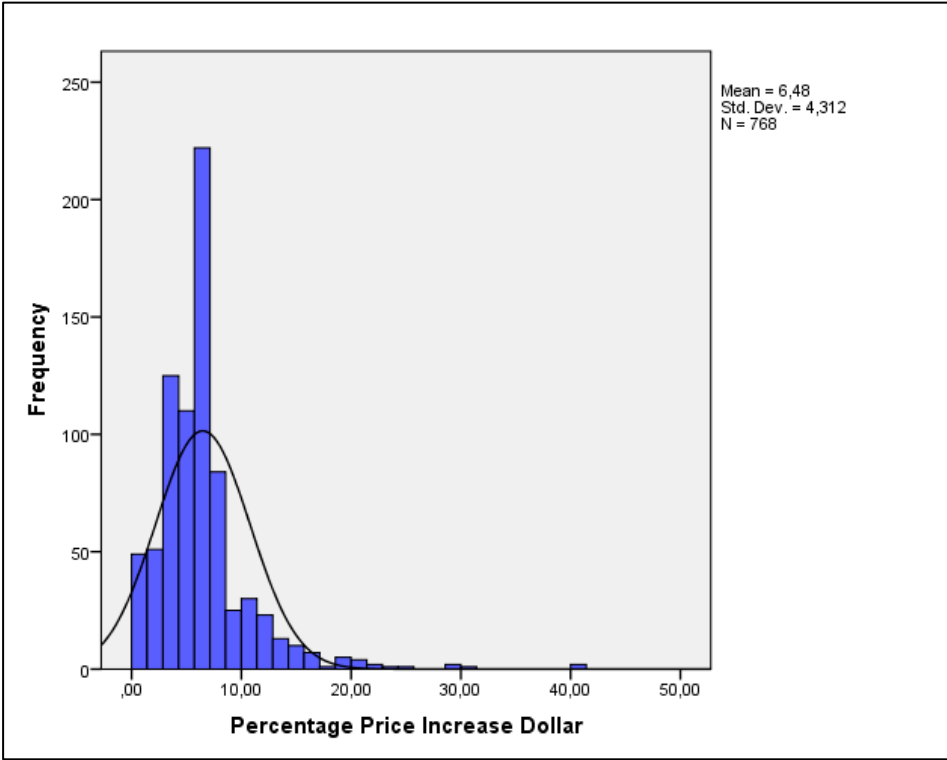


Figure 4 - Percentage price increase distribution for Dollar prices, positively skewed



2.8.2. ANOVA's Games-Howell post-hoc tests

Table 41 – Games Howell post-hoc tests; factor: Type of price ending transition; Dependent variable: percentage price increase in euros.

(I) Price ending transition	(J) Price ending transition	(I-J)	Std. Error	Sig.
Other to Other	Even to Even	-2,69504*	,64148	,005
	Even to 50	-3,06112	,87904	,069
	Even to Odd	-,94342	,50707	,825
	Even to Other	,06127	,25948	1,000
	50 to Even	-1,90013*	,47351	,011
	50 to 50	-4,45706*	,76377	,000
	50 to Odd	-,82662	,25568	,105
	50 to Other	-1,19808	,55717	,723
	Odd to Even	-6,62732*	1,14521	,000
	Odd to 50	-5,57825*	1,05837	,001
	Odd to Odd	-,64264	,24197	,374
	Odd to Other	-,42198	,31170	,993
	Other to Even	-3,22387*	,82840	,021
	Other to 50	-1,45065	,46422	,136
	Other to Odd	-,33737	,28999	,999
Even to Even	Other to Other	2,69504*	,64148	,005
	Even to 50	-,36608	1,03528	1,000
	Even to Odd	1,75162	,74580	,598
	Even to Other	2,75632*	,60534	,002
	50 to Even	,79491	,72340	,999
	50 to 50	-1,76202	,93938	,879
	50 to Odd	1,86842	,60372	,155
	50 to Other	1,49696	,78073	,861
	Odd to Even	-3,93228	1,26910	,180
	Odd to 50	-2,88321	1,19132	,542
	Odd to Odd	2,05240	,59804	,067
	Odd to Other	2,27307*	,62949	,038
	Other to Even	-,52883	,99265	1,000
	Other to 50	1,24439	,71736	,934
	Other to Odd	2,35767*	,61903	,021
Even to 50	Other to Other	3,06112	,87904	,069
	Even to Even	,36608	1,03528	1,000
	Even to Odd	2,11770	,95783	,684
	Even to Other	3,12240*	,85302	,047
	50 to Even	1,16099	,94049	,997

	50 to 50	-1,39594	1,11519	,996
	50 to Odd	2,23450	,85187	,410
	50 to Other	1,86304	,98526	,870
	Odd to Even	-3,56620	1,40421	,462
	Odd to 50	-2,51713	1,33434	,873
	Odd to Odd	2,41848	,84786	,280
	Odd to Other	2,63915	,87033	,195
	Other to Even	-,16275	1,16041	1,000
	Other to 50	1,61047	,93585	,933
	Other to Odd	2,72375	,86279	,151
Even to Odd	Other to Other	,94342	,50707	,825
	Even to Even	-1,75162	,74580	,598
	Even to 50	-2,11770	,95783	,684
	Even to Other	1,00469	,46050	,696
	50 to Even	-,95672	,60740	,941
	50 to 50	-3,51364*	,85327	,024
	50 to Odd	,11679	,45836	1,000
	50 to Other	-,25466	,67465	1,000
	Odd to Even	-5,68390*	1,20674	,006
	Odd to 50	-4,63483*	1,12466	,018
	Odd to Odd	,30078	,45086	1,000
	Odd to Other	,52144	,49181	,993
	Other to Even	-2,28046	,91157	,494
	Other to 50	-,50723	,60019	1,000
	Other to Odd	,60604	,47835	,973
Even to Other	Other to Other	-,06127	,25948	1,000
	Even to Even	-2,75632*	,60534	,002
	Even to 50	-3,12240*	,85302	,047
	Even to Odd	-1,00469	,46050	,696
	50 to Even	-1,96141*	,42325	,002
	50 to 50	-4,51833*	,73367	,000
	50 to Odd	-,88790*	,14251	,000
	50 to Other	-1,25935	,51514	,533
	Odd to Even	-6,68859*	1,12536	,000
	Odd to 50	-5,63953*	1,03686	,000
	Odd to Odd	-,70391*	,11613	,000
	Odd to Other	-,48325	,22824	,752
	Other to Even	-3,28515*	,80074	,012
	Other to 50	-1,51192*	,41284	,033
	Other to Odd	-,39865	,19756	,810
50 to Even	Other to Other	1,90013*	,47351	,011

	Even to Even	-,79491	,72340	,999
	Even to 50	-1,16099	,94049	,997
	Even to Odd	,95672	,60740	,941
	Even to Other	1,96141*	,42325	,002
	50 to 50	-2,55692	,83376	,175
	50 to Odd	1,07351	,42094	,450
	50 to Other	,70206	,64981	,999
	Odd to Even	-4,72719*	1,19303	,029
	Odd to 50	-3,67812	1,10993	,109
	Odd to Odd	1,25750	,41275	,182
	Odd to Other	1,47816	,45713	,110
	Other to Even	-1,32374	,89334	,981
	Other to 50	,44948	,57212	1,000
	Other to Odd	1,56276	,44261	,052
50 to 50	Other to Other	4,45706*	,76377	,000
	Even to Even	1,76202	,93938	,879
	Even to 50	1,39594	1,11519	,996
	Even to Odd	3,51364*	,85327	,024
	Even to Other	4,51833*	,73367	,000
	50 to Even	2,55692	,83376	,175
	50 to Odd	3,63044*	,73234	,002
	50 to Other	3,25898*	,88396	,037
	Odd to Even	-2,17026	1,33508	,954
	Odd to 50	-1,12119	1,26138	1,000
	Odd to Odd	3,81442*	,72766	,001
	Odd to Other	4,03508*	,75372	,000
	Other to Even	1,23318	1,07573	,999
	Other to 50	3,00641*	,82852	,044
	Other to Odd	4,11968*	,74501	,000
50 to Odd	Other to Other	,82662	,25568	,105
	Even to Even	-1,86842	,60372	,155
	Even to 50	-2,23450	,85187	,410
	Even to Odd	-,11679	,45836	1,000
	Even to Other	,88790*	,14251	,000
	50 to Even	-1,07351	,42094	,450
	50 to 50	-3,63044*	,73234	,002
	50 to Other	-,37146	,51324	1,000
	Odd to Even	-5,80070*	1,12449	,002
	Odd to 50	-4,75163*	1,03591	,005
	Odd to Odd	,18399	,10737	,930
	Odd to Other	,40465	,22391	,911

	Other to Even	-2,39725	,79951	,206
	Other to 50	-,62403	,41047	,977
	Other to Odd	,48925	,19254	,451
50 to Other	Other to Other	1,19808	,55717	,723
	Even to Even	-1,49696	,78073	,861
	Even to 50	-1,86304	,98526	,870
	Even to Odd	,25466	,67465	1,000
	Even to Other	1,25935	,51514	,533
	50 to Even	-,70206	,64981	,999
	50 to 50	-3,25898*	,88396	,037
	50 to Odd	,37146	,51324	1,000
	Odd to Even	-5,42924*	1,22864	,008
	Odd to 50	-4,38017*	1,14812	,030
	Odd to Odd	,55544	,50655	,999
	Odd to Other	,77610	,54332	,984
	Other to Even	-2,02580	,94036	,724
	Other to 50	-,25257	,64307	1,000
	Other to Odd	,86070	,53116	,952
Odd to Even	Other to Other	6,62732*	1,14521	,000
	Even to Even	3,93228	1,26910	,180
	Even to 50	3,56620	1,40421	,462
	Even to Odd	5,68390*	1,20674	,006
	Even to Other	6,68859*	1,12536	,000
	50 to Even	4,72719*	1,19303	,029
	50 to 50	2,17026	1,33508	,954
	50 to Odd	5,80070*	1,12449	,002
	50 to Other	5,42924*	1,22864	,008
	Odd to 50	1,04907	1,52291	1,000
	Odd to Odd	5,98468*	1,12145	,002
	Odd to Other	6,20534*	1,13854	,001
	Other to Even	3,40345	1,37308	,503
	Other to 50	5,17667*	1,18938	,011
	Other to Odd	6,28995*	1,13279	,001
Odd to 50	Other to Other	5,57825*	1,05837	,001
	Even to Even	2,88321	1,19132	,542
	Even to 50	2,51713	1,33434	,873
	Even to Odd	4,63483*	1,12466	,018
	Even to Other	5,63953*	1,03686	,000
	50 to Even	3,67812	1,10993	,109
	50 to 50	1,12119	1,26138	1,000
	50 to Odd	4,75163*	1,03591	,005

	50 to Other	4,38017*	1,14812	,030
	Odd to Even	-1,04907	1,52291	1,000
	Odd to Odd	4,93561*	1,03261	,003
	Odd to Other	5,15628*	1,05114	,002
	Other to Even	2,35438	1,30153	,904
	Other to 50	4,12760*	1,10600	,040
	Other to Odd	5,24088*	1,04491	,002
Odd to Odd	Other to Other	,64264	,24197	,374
	Even to Even	-2,05240	,59804	,067
	Even to 50	-2,41848	,84786	,280
	Even to Odd	-,30078	,45086	1,000
	Even to Other	,70391*	,11613	,000
	50 to Even	-1,25750	,41275	,182
	50 to 50	-3,81442*	,72766	,001
	50 to Odd	-,18399	,10737	,930
	50 to Other	-,55544	,50655	,999
	Odd to Even	-5,98468*	1,12145	,002
	Odd to 50	-4,93561*	1,03261	,003
	Odd to Other	,22066	,20811	1,000
	Other to Even	-2,58124	,79524	,121
	Other to 50	-,80801	,40207	,813
	Other to Odd	,30526	,17393	,923
Odd to Other	Other to Other	,42198	,31170	,993
	Even to Even	-2,27307*	,62949	,038
	Even to 50	-2,63915	,87033	,195
	Even to Odd	-,52144	,49181	,993
	Even to Other	,48325	,22824	,752
	50 to Even	-1,47816	,45713	,110
	50 to 50	-4,03508*	,75372	,000
	50 to Odd	-,40465	,22391	,911
	50 to Other	-,77610	,54332	,984
	Odd to Even	-6,20534*	1,13854	,001
	Odd to 50	-5,15628*	1,05114	,002
	Odd to Odd	-,22066	,20811	1,000
	Other to Even	-2,80190	,81915	,077
	Other to 50	-1,02867	,44751	,625
	Other to Odd	,08460	,26240	1,000
Other to Even	Other to Other	3,22387*	,82840	,021
	Even to Even	,52883	,99265	1,000
	Even to 50	,16275	1,16041	1,000
	Even to Odd	2,28046	,91157	,494

	Even to Other	3,28515*	,80074	,012
	50 to Even	1,32374	,89334	,981
	50 to 50	-1,23318	1,07573	,999
	50 to Odd	2,39725	,79951	,206
	50 to Other	2,02580	,94036	,724
	Odd to Even	-3,40345	1,37308	,503
	Odd to 50	-2,35438	1,30153	,904
	Odd to Odd	2,58124	,79524	,121
	Odd to Other	2,80190	,81915	,077
	Other to 50	1,77322	,88846	,820
	Other to Odd	2,88650	,81114	,055
Other to 50	Other to Other	1,45065	,46422	,136
	Even to Even	-1,24439	,71736	,934
	Even to 50	-1,61047	,93585	,933
	Even to Odd	,50723	,60019	1,000
	Even to Other	1,51192*	,41284	,033
	50 to Even	-,44948	,57212	1,000
	50 to 50	-3,00641*	,82852	,044
	50 to Odd	,62403	,41047	,977
	50 to Other	,25257	,64307	1,000
	Odd to Even	-5,17667*	1,18938	,011
	Odd to 50	-4,12760*	1,10600	,040
	Odd to Odd	,80801	,40207	,813
	Odd to Other	1,02867	,44751	,625
	Other to Even	-1,77322	,88846	,820
	Other to Odd	1,11328	,43267	,428
Other to Odd	Other to Other	,33737	,28999	,999
	Even to Even	-2,35767*	,61903	,021
	Even to 50	-2,72375	,86279	,151
	Even to Odd	-,60604	,47835	,973
	Even to Other	,39865	,19756	,810
	50 to Even	-1,56276	,44261	,052
	50 to 50	-4,11968*	,74501	,000
	50 to Odd	-,48925	,19254	,451
	50 to Other	-,86070	,53116	,952
	Odd to Even	-6,28995*	1,13279	,001
	Odd to 50	-5,24088*	1,04491	,002
	Odd to Odd	-,30526	,17393	,923
	Odd to Other	-,08460	,26240	1,000
	Other to Even	-2,88650	,81114	,055

Other to 50	-1,11328	,43267	,428
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Table 42 - Games Howell post-hoc tests; factor: Type of price ending transition; Dependent variable: percentage price increase in dollars.

(I) Price ending transition	(J) Price ending transition	(I-J)	Std. Error	Sig.
Other to Other	Even to Even	-3,65757	1,23327	,206
	Even to 50	,41048	,88620	1,000
	Even to Odd	-2,44404	2,02551	,989
	Even to Other	-,48412	,87711	1,000
	50 to Even	-,26712	,76731	1,000
	50 to 50	-1,99002	,90056	,687
	50 to Odd	-1,05709	,84887	,996
	50 to Other	-,57853	,83561	1,000
	Odd to Even	-2,83358	1,26191	,662
	Odd to 50	-1,02944	,77325	,993
	Odd to Odd	-1,76513	,89277	,821
	Odd to Other	,87079	,61152	,986
	Other to Even	,18658	,64940	1,000
	Other to 50	-,23438	,61355	1,000
	Other to Odd	,84937	,71305	,998
Even to Even	Other to Other	3,65757	1,23327	,206
	Even to 50	4,06806	1,29005	,133
	Even to Odd	1,21354	2,23195	1,000
	Even to Other	3,17346	1,28382	,501
	50 to Even	3,39045	1,21147	,290
	50 to 50	1,66756	1,29996	,996
	50 to Odd	2,60048	1,26470	,785
	50 to Other	3,07904	1,25584	,515
	Odd to Even	,82399	1,57204	1,000
	Odd to 50	2,62813	1,21524	,719
	Odd to Odd	1,89244	1,29457	,983
	Odd to Other	4,52837*	1,11930	,012
	Other to Even	3,84416	1,14044	,081
	Other to 50	3,42319	1,12041	,176
	Other to Odd	4,50694*	1,17784	,022
Even to 50	Other to Other	-,41048	,88620	1,000
	Even to Even	-4,06806	1,29005	,133
	Even to Odd	-2,85452	2,06057	,971

	Even to Other	-,89460	,95529	1,000
	50 to Even	-,67761	,85559	1,000
	50 to 50	-2,40050	,97687	,514
	50 to Odd	-1,46757	,92943	,964
	50 to Other	-,98901	,91734	,999
	Odd to Even	-3,24407	1,31745	,514
	Odd to 50	-1,43993	,86092	,946
	Odd to Odd	-2,17562	,96969	,663
	Odd to Other	,46031	,71918	1,000
	Other to Even	-,22390	,75165	1,000
	Other to 50	-,64486	,72091	1,000
	Other to Odd	,43888	,80728	1,000
Even to Odd	Other to Other	2,44404	2,02551	,989
	Even to Even	-1,21354	2,23195	1,000
	Even to 50	2,85452	2,06057	,971
	Even to Other	1,95992	2,05668	,999
	50 to Even	2,17691	2,01231	,996
	50 to 50	,45402	2,06679	1,000
	50 to Odd	1,38695	2,04480	1,000
	50 to Other	1,86551	2,03933	,999
	Odd to Even	-,38955	2,24790	1,000
	Odd to 50	1,41460	2,01458	1,000
	Odd to Odd	,67890	2,06341	1,000
	Odd to Other	3,31483	1,95821	,892
	Other to Even	2,63062	1,97037	,975
	Other to 50	2,20966	1,95884	,993
	Other to Odd	3,29340	1,99225	,907
Even to Other	Other to Other	,48412	,87711	1,000
	Even to Even	-3,17346	1,28382	,501
	Even to 50	,89460	,95529	1,000
	Even to Odd	-1,95992	2,05668	,999
	50 to Even	,21699	,84617	1,000
	50 to 50	-1,50590	,96863	,971
	50 to Odd	-,57297	,92077	1,000
	50 to Other	-,09441	,90857	1,000
	Odd to Even	-2,34947	1,31136	,907
	Odd to 50	-,54532	,85156	1,000
	Odd to Odd	-1,28102	,96139	,992
	Odd to Other	1,35491	,70795	,858
	Other to Even	,67070	,74091	1,000
	Other to 50	,24974	,70970	1,000

	Other to Odd	1,33348	,79729	,946
50 to Even	Other to Other	,26712	,76731	1,000
	Even to Even	-3,39045	1,21147	,290
	Even to 50	,67761	,85559	1,000
	Even to Odd	-2,17691	2,01231	,996
	Even to Other	-,21699	,84617	1,000
	50 to 50	-1,72289	,87045	,828
	50 to Odd	-,78997	,81686	1,000
	50 to Other	-,31140	,80308	1,000
	Odd to Even	-2,56646	1,24061	,772
	Odd to 50	-,76232	,73797	1,000
	Odd to Odd	-1,49801	,86239	,920
	Odd to Other	1,13792	,56625	,812
	Other to Even	,45371	,60696	1,000
	Other to 50	,03274	,56844	1,000
	Other to Odd	1,11649	,67462	,951
50 to 50	Other to Other	1,99002	,90056	,687
	Even to Even	-1,66756	1,29996	,996
	Even to 50	2,40050	,97687	,514
	Even to Odd	-,45402	2,06679	1,000
	Even to Other	1,50590	,96863	,971
	50 to Even	1,72289	,87045	,828
	50 to Odd	,93293	,94313	1,000
	50 to Other	1,41149	,93122	,977
	Odd to Even	-,84357	1,32716	1,000
	Odd to 50	,96057	,87569	,999
	Odd to Odd	,22488	,98283	1,000
	Odd to Other	2,86081*	,73680	,026
	Other to Even	2,17660	,76853	,285
	Other to 50	1,75564	,73849	,573
	Other to Odd	2,83938	,82302	,072
50 to Odd	Other to Other	1,05709	,84887	,996
	Even to Even	-2,60048	1,26470	,785
	Even to 50	1,46757	,92943	,964
	Even to Odd	-1,38695	2,04480	1,000
	Even to Other	,57297	,92077	1,000
	50 to Even	,78997	,81686	1,000
	50 to 50	-,93293	,94313	1,000
	50 to Other	,47856	,88133	1,000
	Odd to Even	-1,77649	1,29264	,989
	Odd to 50	,02765	,82244	1,000

	Odd to Odd	-,70804	,93570	1,000
	Odd to Other	1,92788	,67264	,311
	Other to Even	1,24367	,70725	,908
	Other to 50	,82271	,67449	,995
	Other to Odd	1,90646	,76611	,505
50 to Other	Other to Other	,57853	,83561	1,000
	Even to Even	-3,07904	1,25584	,515
	Even to 50	,98901	,91734	,999
	Even to Odd	-1,86551	2,03933	,999
	Even to Other	,09441	,90857	1,000
	50 to Even	,31140	,80308	1,000
	50 to 50	-1,41149	,93122	,977
	50 to Odd	-,47856	,88133	1,000
	Odd to Even	-2,25506	1,28398	,918
	Odd to 50	-,45091	,80876	1,000
	Odd to Odd	-1,18660	,92369	,994
	Odd to Other	1,44932	,65584	,686
	Other to Even	,76511	,69129	,999
	Other to 50	,34415	,65773	1,000
	Other to Odd	1,42790	,75140	,866
Odd to Even	Other to Other	2,83358	1,26191	,662
	Even to Even	-,82399	1,57204	1,000
	Even to 50	3,24407	1,31745	,514
	Even to Odd	,38955	2,24790	1,000
	Even to Other	2,34947	1,31136	,907
	50 to Even	2,56646	1,24061	,772
	50 to 50	,84357	1,32716	1,000
	50 to Odd	1,77649	1,29264	,989
	50 to Other	2,25506	1,28398	,918
	Odd to 50	1,80414	1,24429	,982
	Odd to Odd	1,06845	1,32188	1,000
	Odd to Other	3,70438	1,15078	,151
	Other to Even	3,02017	1,17135	,446
	Other to 50	2,59920	1,15186	,655
	Other to Odd	3,68295	1,20780	,201
Odd to 50	Other to Other	1,02944	,77325	,993
	Even to Even	-2,62813	1,21524	,719
	Even to 50	1,43993	,86092	,946
	Even to Odd	-1,41460	2,01458	1,000
	Even to Other	,54532	,85156	1,000
	50 to Even	,76232	,73797	1,000

	50 to 50	-,96057	,87569	,999
	50 to Odd	-,02765	,82244	1,000
	50 to Other	,45091	,80876	1,000
	Odd to Even	-1,80414	1,24429	,982
	Odd to Odd	-,73569	,86768	1,000
	Odd to Other	1,90024	,57427	,105
	Other to Even	1,21602	,61445	,827
	Other to 50	,79506	,57643	,989
	Other to Odd	1,87881	,68137	,323
Odd to Odd	Other to Other	1,76513	,89277	,821
	Even to Even	-1,89244	1,29457	,983
	Even to 50	2,17562	,96969	,663
	Even to Odd	-,67890	2,06341	1,000
	Even to Other	1,28102	,96139	,992
	50 to Even	1,49801	,86239	,920
	50 to 50	-,22488	,98283	1,000
	50 to Odd	,70804	,93570	1,000
	50 to Other	1,18660	,92369	,994
	Odd to Even	-1,06845	1,32188	1,000
	Odd to 50	,73569	,86768	1,000
	Odd to Other	2,63593	,72726	,092
	Other to Even	1,95172	,75939	,464
	Other to 50	1,53075	,72897	,745
	Other to Odd	2,61450	,81449	,164
Odd to Other	Other to Other	-,87079	,61152	,986
	Even to Even	-4,52837*	1,11930	,012
	Even to 50	-,46031	,71918	1,000
	Even to Odd	-3,31483	1,95821	,892
	Even to Other	-1,35491	,70795	,858
	50 to Even	-1,13792	,56625	,812
	50 to 50	-2,86081*	,73680	,026
	50 to Odd	-1,92788	,67264	,311
	50 to Other	-1,44932	,65584	,686
	Odd to Even	-3,70438	1,15078	,151
	Odd to 50	-1,90024	,57427	,105
	Odd to Odd	-2,63593	,72726	,092
	Other to Even	-,68421	,39190	,930
	Other to 50	-1,10517	,32911	,070
	Other to Odd	-,02143	,49021	1,000
Other to Even	Other to Other	-,18658	,64940	1,000
	Even to Even	-3,84416	1,14044	,081

	Even to 50	,22390	,75165	1,000
	Even to Odd	-2,63062	1,97037	,975
	Even to Other	-,67070	,74091	1,000
	50 to Even	-,45371	,60696	1,000
	50 to 50	-2,17660	,76853	,285
	50 to Odd	-1,24367	,70725	,908
	50 to Other	-,76511	,69129	,999
	Odd to Even	-3,02017	1,17135	,446
	Odd to 50	-1,21602	,61445	,827
	Odd to Odd	-1,95172	,75939	,464
	Odd to Other	,68421	,39190	,930
	Other to 50	-,42096	,39506	,999
	Other to Odd	,66278	,53672	,996
Other to 50	Other to Other	,23438	,61355	1,000
	Even to Even	-3,42319	1,12041	,176
	Even to 50	,64486	,72091	1,000
	Even to Odd	-2,20966	1,95884	,993
	Even to Other	-,24974	,70970	1,000
	50 to Even	-,03274	,56844	1,000
	50 to 50	-1,75564	,73849	,573
	50 to Odd	-,82271	,67449	,995
	50 to Other	-,34415	,65773	1,000
	Odd to Even	-2,59920	1,15186	,655
	Odd to 50	-,79506	,57643	,989
	Odd to Odd	-1,53075	,72897	,745
	Odd to Other	1,10517	,32911	,070
	Other to Even	,42096	,39506	,999
	Other to Odd	1,08375	,49274	,692
Other to Odd	Other to Other	-,84937	,71305	,998
	Even to Even	-4,50694	1,17784	,022
	Even to 50	-,43888	,80728	1,000
	Even to Odd	-3,29340	1,99225	,907
	Even to Other	-1,33348	,79729	,946
	50 to Even	-1,11649	,67462	,951
	50 to 50	-2,83938	,82302	,072
	50 to Odd	-1,90646	,76611	,505
	50 to Other	-1,42790	,75140	,866
	Odd to Even	-3,68295	1,20780	,201
	Odd to 50	-1,87881	,68137	,323
	Odd to Odd	-2,61450	,81449	,164

Odd to Other	,02143	,49021	1,000
Other to Even	-,66278	,53672	,996
Other to 50	-1,08375	,49274	,692

3. Appendix 3 – Appendices to Chapter 5

3.1. Study 3 – First experiment (of two)

Questionnaire

STUDY INSTRUCTIONS

Thank you for your interest in our study. This questionnaire is part of a research project carried out at ESCP EUROPE in the Department of Marketing. It will take you no longer than 10 minutes.

Your answers are completely anonymous, so please try to answer as sincerely as possible.

If you have any questions, please send an email to annalisa.fraccaro@gmail.com

To begin, please click on "Next".

Thanks again for your participation!

*** 1. Have you purchased at least 1 luxury item over the last year? Do not worry about what luxury might mean, just think about what luxury is for you.**

Yes

No

Please think about the last luxury product you have purchased.

***2. What brand was it?**

<input type="radio"/> Armani	<input type="radio"/> Fendi	<input type="radio"/> Loro Piana
<input type="radio"/> Bulgari	<input type="radio"/> Gucci	<input type="radio"/> Louis Vuitton
<input type="radio"/> Burberry	<input type="radio"/> Guerlain	<input type="radio"/> Prada
<input type="radio"/> Cartier	<input type="radio"/> Hermès	<input type="radio"/> Rolex
<input type="radio"/> Chanel	<input type="radio"/> Hugo Boss	<input type="radio"/> Salvatore Ferragamo
<input type="radio"/> Chopard	<input type="radio"/> IWC	<input type="radio"/> Tiffany&Co
<input type="radio"/> Coach	<input type="radio"/> Kenzo	<input type="radio"/> Versace
<input type="radio"/> Dior	<input type="radio"/> Lancôme	<input type="radio"/> Yves Saint Laurent
<input type="radio"/> Dolce&Gabbana	<input type="radio"/> Lancel	
<input type="radio"/> Other (please specify)		

Questionnaire

*3. What product was it?

- Accessory (Scarf, Gloves, Belt, etc.) Handbag/Briefcase Wallet
 Clothing Jewel (earrings, bracelet, necklace, etc.) Watch
 Cover for Smartphone/Tablet/Computer Shoes
 Other (please specify)

*4. How much did you spend approximately in Euros?

5. For the following statements, please state to what extent you agree or disagree

	Strongly disagree			Neither agree nor disagree			Strongly agree
Generally speaking, the higher the price of the product, the higher the quality.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The old saying "You get what you pay for" is generally true.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The price of a product is a good indicator of its quality.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You always have to pay a bit more for the best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Questionnaire

6. For the following statements, please state to what extent you agree or disagree

	Strongly disagree			Neither agree nor disagree			Strongly agree
People notice when you buy the most expensive brand of a product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buying a high price brand makes me feel good about myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buying the most expensive brand of a product makes me feel classy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy the prestige of buying a high priced product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It says something to people when you buy the high priced version of a product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your friends will think you are cheap if you consistently buy the lowest priced version of a product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think others make judgments about me by the kinds of products and brands I buy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Even for a relatively inexpensive product, I think that buying a costly brand is impressive.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Please state to what extent you agree or disagree with the following items, in reference to a luxury product you might consider buying today.

	Strongly disagree			Neither agree nor disagree			Strongly agree
I'm willing to make an extra effort to find a lower price for this luxury product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I will change what I had planned to buy in order to take advantage of a lower price.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am sensitive to differences in prices of this luxury product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The money saved by finding lower prices is usually not worth the time and effort.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would never shop at more than one store to find a lower price for this luxury product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Questionnaire

8. For the following statements, please state to what extent you agree or disagree

	Strongly disagree			Neither agree nor disagree			Strongly agree
I prefer luxury products on which you can easily see and recognize the brand (thanks to its logo or other symbols).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not care if others do not recognize that I am carrying a luxury product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is no point in buying a luxury product if other people do not recognize its brand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*9. Please tick your overall opinion on Louis Vuitton. Please read of all of the 6 alternatives first.

I do not know the brand	I would say I hate this brand	I feel that I dislike this brand	I feel neutral about this brand – no strong feelings either way	I would not say that I love this brand, but I would say that I like it	I would say that I feel deep affection, like love, for this brand
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*10. Are you

- Female
 Male

Questionnaire

Please have a look at this Alma handbag, by Louis Vuitton, Medium Size (36 x 28 x 17 cm), in blue Epi leather, priced at €1790



Alma MM - €1790

***11. In reference to the picture above, please answer the following questions**

	Surely not			Surely Yes
Do you think you could find this particular item at a price lower than the price showed in the picture?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you think that the product shown in the picture is on sale?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stores sometimes increase prices. Do you think that the price shown in the picture is one that has been increased recently?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you think buying the product would be a good deal?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Questionnaire

***12. In reference to the picture above, please state how you would rate**

	Very Low						Very High
the quality of the handbag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the prestige of the handbag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the classiness of the handbag?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. For the following statement, please answer the following question

	Surely not	Probably not	Probably yes	Surely Yes
Do you feel that the price in the picture has been calculated accurately?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please have a look at this Vassili briefcase, by Louis Vuitton, Medium Size (37 x 30 x 6 cm), in black Epi leather, priced at €1790



Vassili MM - €1790

Questionnaire

***14. In reference to the picture above, for the following statements, please answer the following questions**

	Surely not				Surely Yes
Do you think you could find this particular item at a price lower than the price showed in the picture?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you think that the product shown in the picture is on sale?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stores sometimes increase prices. Do you think that the price shown in the picture is one that has been increased recently?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you think buying the product would be a good deal?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***15. In reference to the picture above, please state how you would rate**

	Very Low						Very High
the quality of the briefcase?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the prestige of the briefcase?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
the classiness of the briefcase?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. For the following statement, please answer the following question

	Surely not	Probably not	Probably yes	Surely Yes
Do you feel that the price in the picture has been calculated accurately?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***17. For the following statement, please state to what extent you agree or disagree**

	No, I don't even consider LV to be a luxury brand					Yes, LV corresponds to my ideal of a luxury brand	I don't know the brand
Louis Vuitton is a good example of a luxury brand	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. What is your nationality?

Questionnaire

19. How old are you?

*20. Please indicate within which range your income lies

- <20 000 Euros
- more than 20 000 up to 50 000 Euros
- more than 50 000 up to 100 000 Euros
- > 100 000 Euros

21. What is your profession?

*22. What is the highest level of education you have completed?

- No degree completed
- High school
- Bachelor
- Master
- MBA or Ph.D.

Thank you so much for your kind help! Should you be interested in the purpose of the research, please contact me at annalisa.fraccaro@gmail.com, I will be glad to share information about it with you!

3.1.1. Process output; Outcome: Perceived luxuriousness; Moderated mediator: Quality image

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.15 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 7
Y = Perceived brand luxuriousness
X = Dummy odd price; x=1 if price is odd; x=0 if price is even.
M = Quality Image
W = Price quality schema (PQS)

Sample size
97

Outcome: M = Quality Image

Model Summary

R	R-sq	MSE	F	df1	df2	p
,3084	,0951	1,5147	3,2574	3,0000	93,0000	,0251

Model

	coeff	se	t	p	LLCI	ULCI
constant	5,6625	,1852	30,5782	,0000	5,2948	6,0303
Dummy odd	-,2932	,2573	-1,1393	,2575	-,8042	,2179
PQS	,3770	,1842	2,0467	,0435	,0112	,7429
int_1	-,8365	,2939	-2,8460	,0054	-1,4202	-,2528

Product terms key:

int_1 Dummy odd price X Price quality schema

Interpretation: when an individual who relies on price as a quality indicator sees an odd price, the odd price has a negative effect on the perception of quality.

Outcome: Perceived brand luxuriousness

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2550	,0650	2,3207	3,2697	2,0000	94,0000	,0424

Model

	coeff	se	t	p	LLCI	ULCI
constant	3,7501	,7231	5,1859	,0000	2,3143	5,1860
Quality Image	,3093	,1230	2,5140	,0136	,0650	,5536
Dummy odd	-,0483	,3121	-,1547	,8774	-,6680	,5715

Interpretation: Quality image has a positive effect on perceived luxuriousness; the direct effect of the price ending on Y, Perceived brand luxuriousness does not need to be significant to consider the mediation as existing.

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

Effect	SE	t	p	LLCI	ULCI
-,0483	,3121	-,1547	,8774	-,6680	,5715

Conditional indirect effect(s) of X on Y at values of the moderator(s):

Mediator: Quality Image

	PQS	Effect	Boot SE	BootLLCI	BootULCI
Effect of Quality Image At low levels of Price Quality Schema (PQS)	-,8851	,1383	,1472	-,0508	,5628
Effect of Quality Image At medium levels of Price Quality Schema (PQS)	,0135	-,0942	,0845	-,3316	,0189
Effect of Quality Image At high levels of Price Quality Schema (PQS)	,9121	-,3267	,1461	-,6684	-,0891

Values for quantitative moderators are the mean and plus/minus one SD from mean.

Interpretation: Only at high levels of Price quality schema does the odd price have a significant negative effect on the perception of brand luxuriousness.

***** INDEX OF MODERATED MEDIATION *****

Mediator

	Index	SE(Boot)	BootLLCI	BootULCI
Quality Image	-,2587	,1334	-,5924	-,0481

***** ANALYSIS NOTES AND WARNINGS *****

Number of bootstrap samples for bias corrected bootstrap confidence intervals:
1000

Level of confidence for all confidence intervals in output:
95,00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
1

----- END MATRIX -----

3.1.2. Process output; Outcome: Perceived luxuriousness; Moderator: Cluster

Model = 1; Moderation
 Y = Perceived brand luxuriousness
 X = Dummy odd price; =1 if price is odd, 0 if it is even.
 M = Cluster

Statistical Controls:
 CONTROL= LV_OP = Opinion about Louis Vuitton (pre-stimulus)

Sample size
 91

Coding of categorical Moderator variable for analysis:

Cluster	Dummy_Cluster2	Dummy_Cluster3
1,00	,00	,00
2,00	1,00	,00
3,00	,00	1,00

Baseline: Cluster 1, Excursionists

Outcome: Perceived brand luxuriousness

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4017	,1614	2,1319	3,3551	6,0000	84,0000	,0052

Model

	coeff	se	t	p	LLCI	ULCI
constant	2,6265	,8831	2,9742	,0038	,8704	4,3826
LV_OP	,6481	,1943	3,3352	,0013	,2617	1,0346
Dummy odd	,1830	,3972	,4607	,6462	-,6068	,9728
Dummy_C12	1,0611	,4417	2,4024	,0185	,1827	1,9394
Dummy_C13	1,0667	,4520	2,3601	,0206	,1679	1,9655
int_1	-1,2739	,7208	-1,7673	,0808	-2,7073	,1595
int_2	-1,6456	,7769	-2,1182	,0371	-3,1906	-,1007

Product terms key:

int_1	:	Dummy_Cluster2	X	Dummy odd price
int_2	:	Dummy_Cluster3	X	Dummy odd price

R-square increase due to interaction:

R2-chng	F	df1	df2	p
,0516	3,0566	2,0000	84,0000	,0523

Interpretation: The opinion the respondent has of Louis Vuitton before being exposed to the stimulus is the most important predictor of perceived brand luxuriousness. However, looking at the interactions, odd prices have a negative effect on perceived brand luxuriousness for respondents from Cluster 2 and 3 compared to respondents from Cluster1; this means that compared to respondents who are less interested in luxury, respondents from these two groups perceive a damage to brand luxuriousness due to the odd price.

Conditional Effect of Focal Predictor in Groups Defined by the Moderator Variable:

Cluster	coeff	se	t	p	LLCI	ULCI
1	,1830	,3972	,4607	,6462	-,6068	,9728
2	-1,0909	,6114	-1,7844	,0780	-2,3067	,1249
3	-1,4627	,6759	-2,1639	,0333	-2,8068	-,1185

The moderator variable is dichotomous

***** ANALYSIS NOTES AND WARNINGS *****

Level of confidence for all confidence intervals in output:
95,00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
7

NOTE: All standard errors for continuous outcome models are based on the HC3 estimator

----- END MATRIX -----

3.2. Study 4 – Second experiment (of two)

STUDY INSTRUCTIONS

This questionnaire is part of a research project on luxury products carried out at ESCP EUROPE in the Department of Marketing. It will take you no longer than 10 minutes.

Your answers are completely anonymous, so please try to answer as sincerely as possible.

Throughout the questionnaire, please do not worry about what "luxury" means, just think about what YOU consider to be luxury.

If you have any questions, please send an email to annalisa.fraccaro@gmail.com

Thank you for your participation!

Do you agree with the following statements?

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Generally speaking, the higher the price of a luxury product, the higher its quality.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The old saying "You get what you pay for" is generally true.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The price of a luxury product is a good indicator of its quality.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
You always have to pay a bit more for the best.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you feel about luxury?

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Buying a luxury brand makes me feel good about myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I buy a luxury product I feel classy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy the prestige of buying a luxury product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It says something to people when you buy a luxury version of a product.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

When it comes to luxury, what are your shopping habits?

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Sales season is a good opportunity for me to buy luxury products that I would not buy otherwise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I wanted to buy a luxury product available in different materials and/or sizes, I would choose the least expensive option.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If I could not make up my mind between two luxury products, I would go for the one with the lower price.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I consider buying a luxury product, I tend to buy the lowest-priced option that fits my needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When buying a product that different brands offer in similar versions, I look for the cheapest brand available.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On a scale from 1 to 7, how important are the following characteristics when buying a luxury product for your personal use?

	1 Not at all Important	2	3	4	5	6	7 Extremely Important
Uniqueness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exclusiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preciousness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rarity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Superiority	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Durability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sophistication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Classiness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prestige	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expensiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

On a scale from 1 to 7, when it comes to buying a luxury product for yourself, how important is it for you that...

	1 Not at all Important	2	3	4	5	6	7 Extremely Important
...only wealthy people can afford it?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...everyone can tell it is a luxury brand?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...it is popular?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...it is an original luxury product (not a counterfeit)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...it is crafted (not mass produced)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...it is only for the élite?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Odd price



Please take some time to have a look at the handbags above. They are all by Brand X and they are all made of the same kind of leather.

Would you say that Brand X is luxurious?

	Not at all luxurious	--	-	0	+	++	Extremely luxurious
Brand X	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Even price - Rounded Down



Please take some time to have a look at the handbags above. They are all by Brand X and they are all made of the same kind of leather.

Would you say that Brand X is luxurious?

	Not at all luxurious	--	-	0	+	++	Extremely luxurious
Brand X	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

“Other” Prices - Control condition



Please take some time to have a look at the handbags above. They are all by Brand X and they are all made of the same kind of leather.

Would you say that Brand X is luxurious?

	Not at all luxurious	--	-	0	+	++	Extremely luxurious
Brand X	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Even price - Rounded Up



Please take some time to have a look at the handbags above. They are all by Brand X and they are all made of the same kind of leather.

Would you say that Brand X is luxurious?

	Not at all luxurious	--	-	0	+	++	Extremely luxurious
Brand X	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regarding the handbags in the previous page, please tick how well they are doing ON AVERAGE on each characteristic listed below.

	Not at all ---	--	-	0	+	++	Extremely +++
Exclusive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Precious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rare	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Unique	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Crafted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Superior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Durable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sophisticated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Classy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prestigious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Elitist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expensive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For wealthy people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Easily identifiable as luxury	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Do you think that the prices of the handbags in the pictures have been recently...

Most likely decreased	Probably decreased	Possibly decreased	Undecided	Possibly increased	Probably increased	Most likely increased
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

In your opinion, the prices of the handbags in the pictures result from accurate calculations?

Very Unlikely	Unlikely	Somewhat Unlikely	Undecided	Somewhat Likely	Likely	Very Likely
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Over the last 12 months, how many products have you purchased from the following brands?

	0	1	2-4	5 or more
Armani	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bulgari	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Burberry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cartier	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chanel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chopard	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dior	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dolce&Gabbana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fendi	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gucci	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guerlain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hermès	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hugo Boss	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
IWC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kenzo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lancôme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lancel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loro Piana	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Louis Vuitton	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prada	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rolex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Salvatore Ferragamo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tiffany&Co	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Versace	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yves Saint Laurent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please specify) <input type="text"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What is your nationality?

You are

- Female
 Male

How old are you?

What do you think is the purpose of this study?

Thank you for your help!

3.2.1. Process output; Outcome: price image; Moderator: price consciousness

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Release 2.15 *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
 Documentation available in Hayes (2013). www.guilford.com/p/hayes3

Model = 1; Moderation

Y = Price image; perceived expensiveness

X = Condition (0= even rounded down; 1= control; 2= odd price; 3= even rounded up

M = Price consciousness

Sample size
 263

Coding of categorical X variable for analysis:

Condition		DUMMY_CONTROL	DUMMY_ODD	DUMMY_EVEN_UP
,00	even rounded down	,00	,00	,00
1,00	control	1,00	,00	,00
2,00	odd	,00	1,00	,00
3,00	even rounded up	,00	,00	1,00

Outcome: PRICE IMAGE

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2220	,0493	,7338	1,8883	7,0000	255,0000	,0718

Model

	coeff	se	t	p	LLCI	ULCI
constant	-,1241	,1055	-1,1755	,2409	-,3319	,0838
Price Consc.	,0525	,1243	,4219	,6735	-,1924	,2973
DUMMY_CONTROL	,3380	,1582	2,1362	,0336	,0264	,6496
DUMMY_ODD	,2380	,1459	1,6317	,1040	-,0492	,5253
DUMMY_EVEN_UP	-,0297	,1467	-,2026	,8396	-,3186	,2591
int_1	,0207	,1916	,1082	,9139	-,3565	,3980
int_2	,1543	,1626	,9490	,3435	-,1659	,4744
int_3	,0707	,1699	,4165	,6774	-,2638	,4053

Product terms key:

int_1	:	DUMMY_CONTROL	X	Price Consc.
int_2	:	DUMMY_ODD	X	Price Consc.
int_3	:	DUMMY_EVEN_UP	X	Price Consc.

R-square increase due to interaction:

R2-chng	F	df1	df2	p
,0040	,3586	3,0000	255,0000	,7830

Conditional effect of X on Y at values of the moderator:

Moderator value:

Low values of Price Consc. -,8747

	Coeff	se	t	p	LLCI	ULCI
DUMMY_CONTROL	,3198	,2365	1,3526	,1774	-,1458	,7855
DUMMY_ODD	,1031	,2020	,5103	,6103	-,2948	,5009
DUMMY_EVEN_UP	-,0916	,2142	-,4277	,6692	-,5134	,3302

Test of equality of conditional means at this value of the moderator

R2-chng	F	df1	df2	p
,0127	1,1385	3,0000	255,0000	,3340

Moderator value:

Medium values of Price Consc. ,0091

	Coeff	se	t	p	LLCI	ULCI
DUMMY_CONTROL	,3382	,1581	2,1385	,0334	,0268	,6496
DUMMY_ODD	,2394	,1459	1,6410	,1020	-,0479	,5267
DUMMY_EVEN_UP	-,0291	,1466	-,1983	,8430	-,3178	,2596

Test of equality of conditional means at this value of the moderator

R2-chng	F	df1	df2	p
,0308	2,7526	3,0000	255,0000	,0432

Moderator value:

High values of Price Consc. ,8929

	Coeff	se	t	p	LLCI	ULCI
DUMMY_CONTROL	,3565	,2268	1,5719	,1172	-,0901	,8031
DUMMY_ODD	,3758	,2075	1,8112	,0713	-,0328	,7843
DUMMY_EVEN_UP	,0335	,2054	,1629	,8707	-,3710	,4379

Test of equality of conditional means at this value of the moderator

R2-chng	F	df1	df2	p
,0204	1,8212	3,0000	255,0000	,1437

Moderator values are the sample mean and plus/minus one SD from mean

***** ANALYSIS NOTES AND WARNINGS *****

Level of confidence for all confidence intervals in output:

95,00

NOTE: Some cases were deleted due to missing data. The number of such cases was:

3

----- END MATRIX -----

3.2.2. Process output; Outcome: Quality image; Moderator: Price-quality schema

Model = 1
 Y = Quality image
 X = Condition
 M = Price-Quality schema

Sample size
 261

Coding of categorical X variable for analysis:

Condition		DUMMY_CONTROL	DUMMY_ODD	DUMMY_EVEN_UP
,00	even rounded down	,00	,00	,00
1,00	control	1,00	,00	,00
2,00	odd	,00	1,00	,00
3,00	even rounded up	,00	,00	1,00

 Outcome: Quality image

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2079	,0432	,7206	1,6326	7,0000	253,0000	,1266

Model

	coeff	se	t	p	LLCI	ULCI
constant	,0404	,1053	,3839	,7014	-,1670	,2479
PQS_FACT	-,1512	,1178	-1,2831	,2006	-,3832	,0808
DUMMY_CONTROL	,0498	,1567	,3176	,7510	-,2588	,3583
DUMMY_ODD	,0446	,1457	,3060	,7599	-,2424	,3316
DUMMY_EVEN_UP	-,2305	,1458	-1,5812	,1151	-,5177	,0566
int_1	,2557	,1789	1,4291	,1542	-,0967	,6081
int_2	,3427	,1556	2,2021	,0286	,0362	,6492
int_3	,2232	,1613	1,3842	,1675	-,0944	,5408

Product terms key:

int_1	:	DUMMY_CONTROL	X	PQS_FACT
int_2	:	DUMMY_ODD	X	PQS_FACT
int_3	:	DUMMY_EVEN_UP	X	PQS_FACT

R-square increase due to interaction:

R2-chng	F	df1	df2	p
,0189	1,6682	3,0000	253,0000	,1743

Conditional effect of X on Y at values of the moderator:

Moderator value:

Low levels of Price-Quality schema - ,9119

	Coeff	se	t	p	LLCI	ULCI
DUMMY_CONTROL	-,1834	,2330	-,7872	,4319	-,6422	,2754
DUMMY_ODD	-,2679	,2046	-1,3093	,1916	-,6709	,1351
DUMMY_EVEN_UP	-,4341	,2065	-2,1017	,0366	-,8408	-,0273

Test of equality of conditional means at this value of the moderator

R2-chng	F	df1	df2	p
,0172	1,5202	3,0000	253,0000	,2097

Moderator value:
 Medium levels of Price-Quality schema ,0104

	Coeff	se	t	p	LLCI	ULCI
DUMMY_CONTROL	,0524	,1566	,3349	,7380	-,2559	,3608
DUMMY_ODD	,0482	,1457	,3306	,7412	-,2388	,3352
DUMMY_EVEN_UP	-,2282	,1458	-1,5650	,1188	-,5154	,0590

Test of equality of conditional means at this value of the moderator

R2-chng	F	df1	df2	p
,0190	1,6755	3,0000	253,0000	,1728

 Moderator value:
 High levels of Price-Quality schema ,9328

	Coeff	se	t	p	LLCI	ULCI
DUMMY_CONTROL	,2883	,2218	1,2995	,1950	-,1486	,7251
DUMMY_ODD	,3642	,2045	1,7813	,0761	-,0385	,7670
DUMMY_EVEN_UP	-,0223	,2100	-,1063	,9154	-,4360	,3913

Test of equality of conditional means at this value of the moderator

R2-chng	F	df1	df2	p
,0207	1,8213	3,0000	253,0000	,1437

Moderator values are the sample mean and plus/minus one SD from mean

***** ANALYSIS NOTES AND WARNINGS *****

Level of confidence for all confidence intervals in output:
 95,00

NOTE: Some cases were deleted due to missing data. The number of such cases was:
 5

----- END MATRIX -----

3.2.3. Process output; Outcome: Perceived luxuriousness; Moderator: Price-quality schema

Model = 1
 Y = Perceived brand luxuriousness
 X = Condition
 M = Price-Quality schema (PQS)

Sample size
 266

Coding of categorical X variable for analysis:

Condition		DUMMY_CONTROL	DUMMY_ODD	DUMMY_EVEN_UP
,00	even rounded down	,00	,00	,00
1,00	control	1,00	,00	,00
2,00	odd	,00	1,00	,00
3,00	even rounded up	,00	,00	1,00

Outcome: Perceived brand luxuriousness

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2276	,0518	1,6632	2,0129	7,0000	258,0000	,0539

Model

	coeff	se	t	p	LLCI	ULCI
constant	5,0766	,1587	31,9794	,0000	4,7640	5,3892
PQS_FACT	-,2593	,1762	-1,4713	,1424	-,6063	,0877
DUMMY_CONTROL	,2742	,2372	1,1560	,2487	-,1929	,7412
DUMMY_ODD	,0166	,2184	,0759	,9396	-,4135	,4467
DUMMY_EVEN_UP	-,2954	,2198	-1,3438	,1802	-,7282	,1375
int_1	,6352	,2700	2,3522	,0194	,1034	1,1669
int_2	,4160	,2314	1,7978	,0734	-,0396	,8716
int_3	,3934	,2425	1,6224	,1059	-,0841	,8708

Product terms key:

int_1	:	DUMMY_CONTROL	X	PQS_FACT
int_2	:	DUMMY_ODD	X	PQS_FACT
int_3	:	DUMMY_EVEN_UP	X	PQS_FACT

R-square increase due to interaction:

R2-chng	F	df1	df2	p
,0226	2,0495	3,0000	258,0000	,1074

Conditional effect of X on Y at values of the moderator:

Moderator value:

Low levels of Price-Quality schema - ,9270

	Coeff	se	t	p	LLCI	ULCI
DUMMY_CONTROL	-,3146	,3536	-,8897	,3744	-1,0110	,3817
DUMMY_ODD	-,3690	,3041	-1,2135	,2260	-,9678	,2298
DUMMY_EVEN_UP	-,6600	,3126	-2,1116	,0357	-1,2755	-,0445

Test of equality of conditional means at this value of the moderator

R2-chng	F	df1	df2	p
,0165	1,4950	3,0000	258,0000	,2163

Moderator value:

Medium levels of Price-Quality schema ,0000

	Coeff	se	t	p	LLCI	ULCI
DUMMY_CONTROL	,2742	,2372	1,1560	,2487	-,1929	,7412
DUMMY_ODD	,0166	,2184	,0759	,9396	-,4135	,4467
DUMMY_EVEN_UP	-,2954	,2198	-1,3438	,1802	-,7282	,1375

Test of equality of conditional means at this value of the moderator

R2-chng	F	df1	df2	p
,0226	2,0477	3,0000	258,0000	,1077

Moderator value:

High levels of Price-Quality schema ,9270

	Coeff	se	t	p	LLCI	ULCI
DUMMY_CONTROL	,8630	,3358	2,5699	,0107	,2017	1,5242
DUMMY_ODD	,4022	,3081	1,3053	,1930	-,2046	1,0089
DUMMY_EVEN_UP	,0693	,3162	,2190	,8268	-,5533	,6919

Test of equality of conditional means at this value of the moderator

R2-chng	F	df1	df2	p
,0304	2,7545	3,0000	258,0000	,0430

Moderator values are the sample mean and plus/minus one SD from mean

***** ANALYSIS NOTES AND WARNINGS *****

Level of confidence for all confidence intervals in output:

95,00

----- END MATRIX -----

3.2.4. Process output; Outcome: Perceived Luxuriousness; Sequential mediation: price and quality image

Model = 6

Y = Perceived Luxuriousness
 X = d_odd (Dummy Odd pricing condition)
 M1 = Price Image (Perceived expensiveness)
 M2 = Quality Image (Perceived quality)

Statistical Controls:

CONTROL= LUX_IND(Number of luxury products bought by respondent)

Sample size 259 (7 cases were deleted due to missing data)

 Outcome: Price Image (Perceived expensiveness)

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2239	,0501	,7151	4,8078	2,0000	256,0000	,0089

Model

	coeff	se	t	p	LLCI	ULCI
constant	,1167	,0670	1,7428	,0826	-,0152	,2486
d_odd	,1209	,1206	1,0018	,3174	-,1167	,3584
LUX_IND	-,0509	,0164	-3,0967	,0022	-,0833	-,0185

 Outcome: Quality Image (Perceived quality)

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2847	,0811	,6771	5,8906	3,0000	255,0000	,0007

Model

	coeff	se	t	p	LLCI	ULCI
constant	-,0372	,0728	-,5111	,6097	-,1806	,1062
Price image	,2823	,0681	4,1476	,0000	,1483	,4164
d_odd	,0709	,1195	,5928	,5538	-,1645	,3063
LUX_IND	,0095	,0139	,6780	,4984	-,0180	,0369

 Outcome: Perceived Luxuriousness

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4845	,2347	1,3285	21,7230	4,0000	254,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	5,1511	,1070	48,1320	,0000	4,9403	5,3618
Price image	,4103	,0973	4,2193	,0000	,2188	,6018
Quality Image	,4830	,1010	4,7827	,0000	,2841	,6818
d_odd	-,0674	,1742	-,3867	,6993	-,4105	,2757
LUX_IND	-,0262	,0200	-1,3085	,1919	-,0656	,0132

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

Effect	SE	t	p	LLCI	ULCI
-,0674	,1742	-,3867	,6993	-,4105	,2757

Indirect effect(s) of X on Y

	Effect	Boot SE	BootLLCI	BootULCI
Total:	,1003	,0822	-,0597	,2484
Ind1 :	,0496	,0508	-,0415	,1576
Ind2 :	,0165	,0182	-,0110	,0646

Ind3 : ,0342 ,0556 -,0802 ,1426

Indirect effect key

Ind1 : d_odd -> Price Image -> Perceived Luxuriousness
 Ind2 : d_odd -> Price Image -> Quality Image -> Perceived Luxuriousness
 Ind3 : d_odd -> Quality Image-> Perceived Luxuriousness

3.2.5. Process output; Outcome: Perceived Luxuriousness; Sequential mediation: price and prestige image

Model = 6

Y = Perceived Luxuriousness
 X = d_odd (Dummy Odd pricing condition)
 M1 = Price Image (Perceived expensiveness)
 M2 = Prestige Image (Perceived prestige)

Statistical Controls:

CONTROL= LUX_IND (Number of luxury products bought by respondent)

Sample size

260 (6 cases were deleted due to missing data)

Outcome: Price Image (Perceived expensiveness)

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2354	,0554	,7199	5,2693	2,0000	257,0000	,0057

Model

	coeff	se	t	p	LLCI	ULCI
constant	,1280	,0673	1,9004	,0585	-,0046	,2606
d_odd	,1432	,1197	1,1964	,2327	-,0925	,3788
LUX_IND	-,0532	,0165	-3,2272	,0014	-,0856	-,0207

Outcome: Prestige Image (Perceived prestige)

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2643	,0698	,8390	5,8246	3,0000	256,0000	,0007

Model

	coeff	se	t	p	LLCI	ULCI
constant	-,0092	,0785	-,1169	,9070	-,1638	,1454
Price image	,2860	,0696	4,1106	,0001	,1490	,4230
d_odd	,0303	,1353	,2239	,8230	-,2361	,2967
LUX_IND	,0006	,0154	,0419	,9666	-,0296	,0309

Outcome: Perceived Luxuriousness

Model Summary

R	R-sq	MSE	F	df1	df2	p
,5828	,3396	1,1534	33,2142	4,0000	255,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	5,1572	,1001	51,4995	,0000	4,9600	5,3544
Price image	,3906	,0863	4,5248	,0000	,2206	,5606
Prestige image	,6176	,0907	6,8090	,0000	,4390	,7962
d_odd	-,0604	,1610	-,3752	,7079	-,3775	,2567
LUX_IND	-,0231	,0201	-1,1510	,2508	-,0627	,0164

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y						
	Effect	SE	t	p	LLCI	ULCI
	-,0604	,1610	-,3752	,7079	-,3775	,2567

Indirect effect(s) of X on Y					
	Effect	Boot SE	BootLLCI	BootULCI	
Total:	,0999	,1014	-,1048	,2914	
Ind1 :	,0559	,0476	-,0283	,1540	
Ind2 :	,0253	,0241	-,0102	,0857	
Ind3 :	,0187	,0838	-,1567	,1708	

Indirect effect key

Ind1 : d_odd -> Price Image -> Perceived Luxuriousness

Ind2 : d_odd -> Price Image -> Prestige Image -> Perceived Luxuriousness

Ind3 : d_odd -> Prestige Image -> Perceived Luxuriousness

3.2.6. Process output; Outcome: Perceived Luxuriousness; Sequential mediation: price and uniqueness image

Model = 6

Y = Perceived Luxuriousness

X = d_odd (Dummy Odd pricing condition)

M1 = Price Image (Perceived expensiveness)

M2 = Uniqueness Image (Perceived uniqueness)

Statistical Controls:

CONTROL= LUX_IND (Number of luxury products bought by respondent)

Sample size

256 (10 cases were deleted due to missing data)

Outcome: Price Image (Perceived expensiveness)

Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	,2331	,0543	,7246	5,1175	2,0000	253,0000	,0066

Model						
	coeff	se	t	p	LLCI	ULCI
constant	,1224	,0675	1,8122	,0711	-,0106	,2553
d_odd	,1340	,1208	1,1097	,2682	-,1038	,3719
LUX_IND	-,0528	,0166	-3,1899	,0016	-,0854	-,0202

Outcome: Uniqueness Image (Perceived uniqueness)

Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	,1292	,0167	,8981	1,0933	3,0000	252,0000	,3525

Model						
	coeff	se	t	p	LLCI	ULCI
constant	-,0121	,0892	-,1355	,8923	-,1877	,1635
Price Image	,1386	,0841	1,6471	,1008	-,0271	,3043
d_odd	,0361	,1390	,2596	,7954	-,2376	,3097
LUX_IND	,0003	,0183	,0148	,9882	-,0358	,0364

Outcome: Perceived Luxuriousness

Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	,4934	,2434	1,3338	23,9310	4,0000	251,0000	,0000

Model	coeff	se	t	p	LLCI	ULCI
constant	5,1586	,1096	47,0625	,0000	4,9428	5,3745
Price Image	,4983	,0927	5,3753	,0000	,3158	,6809
Uniq. Image	,4262	,0810	5,2614	,0000	,2667	,5858
d_odd	-,0611	,1708	-,3579	,7207	-,3975	,2752
LUX_IND	-,0232	,0217	-1,0690	,2861	-,0659	,0195

***** DIRECT AND INDIRECT EFFECTS *****

Direct effect of X on Y

Effect	SE	t	p	LLCI	ULCI
-,0611	,1708	-,3579	,7207	-,3975	,2752

Indirect effect(s) of X on Y

	Effect	Boot SE	BootLLCI	BootULCI
Total:	,0901	,0816	-,0604	,2683
Ind1 :	,0668	,0609	-,0486	,1912
Ind2 :	,0079	,0103	-,0029	,0432
Ind3 :	,0154	,0599	-,0959	,1445

Indirect effect key

Ind1 : d_odd -> Price Image -> Perceived Luxuriousness
 Ind2 : d_odd -> Price Image -> Uniqueness Image -> Perceived Luxuriousness
 Ind3 : d_odd -> Uniqueness Image -> Perceived Luxuriousness

4. Appendix 4 – Appendices to Chapter 6

4.1. Study 5 – Conjoint Analysis with IFOP

HANDBAGS SURVEY

1. SCREENER

Q1. For each of the following product categories, can you please tell me if you have purchased any product in the past 24 months for yourself or to offer as a gift?

SEVERAL ANSWERS POSSIBLE

RANDOMIZATION

	Purchased
Luxury handbags, travel bags	1
Luxury ready to wear	2
Luxury shoes	3
Luxury accessories (belt, wallet, purse, scarf, etc.)	4
Luxury jewelry	5
Luxury watches	6
None of these	7

Q2A. Which luxury handbags / travel bags brands have you bought in the past 24 months?

IF CODE 1 IN Q1

SEVERAL ANSWERS POSSIBLE

1	ARMANI
2	BALENCIAGA
3	BOTTEGA VENETA
30	BULGARI
4	BURBERRY
29	CARTIER
5	CELINE
6	CHANEL
7	CHLOE
31	CHOPARD
8	DIOR
9	DOLCE & GABBANA
10	FENDI
11	FERRAGAMO
12	GIVENCHY
13	GUCCI
1	ARMANI
2	BALENCIAGA
3	BOTTEGA VENETA

14	HERMES
28	JIMMY CHOO
15	LANVIN
16	LOEWE
17	LORO PIANA
18	LOUIS VUITTON
19	MARC JACOBS
20	MIU MIU
21	PRADA
22	STELLA MCCARTNEY
23	TODS
24	TOM FORD
25	VALENTINO
26	YVES SAINT LAURENT
98	OTHER, Please specify (_____)

Q2B. You told me that you bought luxury handbags / travel bags from (name brands in Q2A) ... in the past 24 months.

Approximately, how much do you estimate to have spent on this / these handbag(s) in total in the past 24 months?

WRITE THE AMOUNT IN FULL

_____ €	Luxury handbags / travel bags
---------	-------------------------------

Q3A. Which luxury ready-to-wear brands have you bought in the past 24 months?

IF CODE 2 IN Q1

SEVERAL ANSWERS POSSIBLE

1	ARMANI
2	BALENCIAGA
3	BOTTEGA VENETA
4	BURBERRY
5	CELINE
6	CHANEL
7	CHLOE
8	DIOR
9	DOLCE & GABBANA
10	FENDI
11	FERRAGAMO
12	GIVENCHY
13	GUCCI
14	HERMES
15	LANVIN

16	LOEWE
17	LORO PIANA
18	LOUIS VUITTON
19	MARC JACOBS
20	MIU MIU
21	PRADA
22	STELLA MCCARTNEY
23	TODS
24	TOM FORD
25	VALENTINO
26	YVES SAINT LAURENT
98	OTHER, Please specify (_____)

Q3B. You told me that you bought luxury ready-to-wear from (name brand in Q3A) ... in the past 24 months.

Approximately, how much do you estimate the total amount you have spent on this ready-to-wear to be at?

WRITE THE AMOUNT IN FULL

_____ €	Luxury ready-to-wear
---------	----------------------

Q4A. Which luxury shoes brands have you bought in the past 24 months?

IF CODE 3 IN Q1

SEVERAL ANSWERS POSSIBLE

1	ARMANI
2	BALENCIAGA
3	BOTTEGA VENETA
4	BURBERRY
5	CELINE
6	CHANEL
7	CHLOE
27	CHRISTIAN LOUBOUTIN
8	DIOR
9	DOLCE & GABBANA
10	FENDI
11	FERRAGAMO
12	GIVENCHY
13	GUCCI
52	GUISEPPE ZANOTTI
14	HERMES

28	JIMMY CHOO
15	LANVIN
16	LOEWE
17	LORO PIANA
18	LOUIS VUITTON
50	MANOLO BLAHNIK
19	MARC JACOBS
20	MIU MIU
21	PRADA
49	ROGER VIVIER
51	SERGIO ROSSI
22	STELLA MCCARTNEY
23	TODS
24	TOM FORD
25	VALENTINO
26	YVES SAINT LAURENT
98	OTHER, Please specify (_____)

Q4B. You told me that you bought shoes from (name brand in Q4A) ... in the past 24 months.

Approximately, how much do you estimate the total amount you have spent on these shoes to be at?

WRITE THE AMOUNT IN FULL

_____ €	Luxury shoes
---------	--------------

**Q5A. Which luxury accessories brands have you bought in the past 24 months?
IF CODE 4 IN Q1**

SEVERAL ANSWERS POSSIBLE

1	ARMANI
2	BALENCIAGA
3	BOTTEGA VENETA
30	BULGARI
4	BURBERRY
29	CARTIER
5	CELINE
6	CHANEL
7	CHLOE
31	CHOPARD
8	DIOR
9	DOLCE & GABBANA
10	FENDI
11	FERRAGAMO
12	GIVENCHY
13	GUCCI

14	HERMES
28	JIMMY CHOO
15	LANVIN
16	LOEWE
17	LORO PIANA
18	LOUIS VUITTON
19	MARC JACOBS
20	MIU MIU
21	PRADA
22	STELLA MCCARTNEY
23	TODS
24	TOM FORD
25	VALENTINO
26	YVES SAINT LAURENT
98	OTHER, Please specify (_____)

Q5B. You told me that you bought accessories from (name brand in Q5A) ... in the past 24 months.

Approximately, how much do you estimate the total amount you have spent on these accessories to be at?

WRITE THE AMOUNT IN FULL

_____ €	Luxury accessories
---------	--------------------

Q7A. Which luxury watches brands have you bought in the past 24 months?

IF CODE 6 IN Q1

SEVERAL ANSWERS POSSIBLE

32	AUDEMARS PIGUET
33	BAUME & MERCIER
34	BOUCHERON
30	BULGARI
35	CARTIER
6	CHANEL
36	CHAUMET
31	CHOPARD
38	DE BEERS
8	DIOR
39	EBEL
40	FRED
13	GUCCI
41	HARRY WINSTON
14	HERMES
42	JAEGER LECOULTRE
18	LOUIS VUITTON

43	OMEGA
44	PIAGET
45	POIRAY
46	ROLEX
47	TIFFANY
48	VAN CLEEF & ARPELS
53	LONGINES
54	PATEK PHILIPPE
55	IWC
56	TAG HEUER
57	BREGUET
58	VACHERON CONSTANTIN
59	HUBLLOT
60	RADO
61	PANERAI
62	BREITLING
63	FRANCK MULLER
98	OTHER, Please specify (_____)

Q7B. You told me that you bought watches from (name brand in Q7A) ... in the past 24 months.

Approximately, how much do you estimate the total amount you spent on these watches to be at?

WRITE THE AMOUNT IN FULL

_____ €	Luxury watches
---------	----------------

2. QUESTIONNAIRE

CBC ANALYSIS

The forthcoming questions will be about GUCCI/PRADA/YSL.

Please imagine that you have to purchase a handbag for yourself or to offer as a gift. Now, you will see several screens with different handbags and their prices. The handbags would be available in different colors. For each screen, please indicate which handbag you prefer and if you would buy it or not.

**Q8. Among these 3 handbags, which one appeals to you the most?
Please select the handbag you prefer.**

Q9. Concerning this handbag you personally prefer, would you really buy it whether for you or as a gift?

Yes
No

	HANDBAG 1	HANDBAG 2	HANDBAG 3
1 st screen	1	2	3
2 nd screen	1	2	3
3 rd screen	1	2	3
...	1	2	3

ATTITUDES TOWARDS LUXURY

Q10. For each of the following statements, can you please say to what extent it corresponds to your personal idea of luxury, using a scale from 1 to 7.

1 means that the statement corresponds very poorly,

7 means that it corresponds very well to your personal idea of luxury. You can use any number in between to nuance your opinion.

Answer per row - only one answer per row – You can use any intermediate score to modulate your opinion

ITEM RANDOMIZATION	Totally disagree						Totally agree
	1	2	3	4	5	6	7
For me, owning a luxury product is above all about sensorial gratification and pleasure.	1	2	3	4	5	6	7
The more a luxury product is expensive, the more it is desirable.	1	2	3	4	5	6	7
If I could not make up my mind between two luxury products, I would go for the one with the higher price so that I am sure of its higher quality.	1	2	3	4	5	6	7
The aesthetics of a luxury product are just as important as its functionality.	1	2	3	4	5	6	7
I like to buy luxury products that are different from those I see on other people.	1	2	3	4	5	6	7
I enjoy seeing that other people in the streets have the same luxury product as me.	1	2	3	4	5	6	7
When I shop for luxury products, I am usually more attracted by limited editions.	1	2	3	4	5	6	7
Owning luxury products is a good way to show others your status.	1	2	3	4	5	6	7
Luxury products are more appealing to me when they have a big, visible logo.	1	2	3	4	5	6	7
Buying a luxury product that is very expensive makes me happy.	1	2	3	4	5	6	7
It is enjoyable to spend a lot of money.	1	2	3	4	5	6	7
I prefer luxury products that do not show their brands.	1	2	3	4	5	6	7
When I shop for luxury products, I am usually more interested in the best sellers of a brand.	1	2	3	4	5	6	7
It is appealing to own luxury because it shows that you are part of an élite.	1	2	3	4	5	6	7
It is more enjoyable to own a luxury product that nobody else owns.	1	2	3	4	5	6	7
The price of a luxury product is a good indicator of its quality.	1	2	3	4	5	6	7
A luxury product's brands should easily be identifiable by everyone.	1	2	3	4	5	6	7
I like to own luxury products, because it allows me to show a certain social standing.							
Generally speaking, the higher the price of a luxury product, the higher its quality.	1	2	3	4	5	6	7
What makes a luxury product special is, before everything else, the emotions it arouses.	1	2	3	4	5	6	7

OPINION ABOUT LUXURY BRANDS: GUCCI / PRADA / YSL

Q11. Please give a score between 1 and 10 (where 10 means you have a very high opinion of the brand, and 1 means you have a very low opinion of the brand).

What score from 1 to 10 would you give to...?

BRAND RANDOMIZATION

Answer per row - only one answer per row – You can use any intermediate score to modulate your opinion

GUCCI	Very low opinion									Very high opinion	
	1	2	3	4	5	6	7	8	9	10	

PRADA	Very low opinion									Very high opinion	
	1	2	3	4	5	6	7	8	9	10	

YSL	Very low opinion									Very high opinion	
	1	2	3	4	5	6	7	8	9	10	

Q12. How likely would you like to wear those handbag brands?

If you would really like to wear this handbag brand give it a score of “10”.

If you wouldn't like to wear this handbag brand at all give it a score of “1”.

What score from 1 to 10 would you give to...?

BRAND RANDOMIZATION

Answer per row - only one answer per row – You can use any intermediate score to modulate your opinion

GUCCI	Wouldn't like to wear									Would like to wear	
	1	2	3	4	5	6	7	8	9	10	

PRADA	Wouldn't like to wear									Would like to wear	
	1	2	3	4	5	6	7	8	9	10	

YSL	Wouldn't like to wear									Would like to wear	
	1	2	3	4	5	6	7	8	9	10	

Q13. Here are a few statements concerning handbags brands.

If you really think the statement applies to this handbag brand give it a score of “10”. If you don’t think the statement apply to this brand at all it a score of “1”. What score from 1 to 10 would you give to...?

BRAND AND ITEM RANDOMIZATION

Answer per row - only one answer per row – You can use any intermediate score to modulate your opinion

	This brand is...	Does not apply									Applies	
		1	2	3	4	5	6	7	8	9	10	
Noticeable	GUCCI	1	2	3	4	5	6	7	8	9	10	
	PRADA	1	2	3	4	5	6	7	8	9	10	
	YSL	1	2	3	4	5	6	7	8	9	10	
Unique	GUCCI	1	2	3	4	5	6	7	8	9	10	
	PRADA	1	2	3	4	5	6	7	8	9	10	
	YSL	1	2	3	4	5	6	7	8	9	10	
Of exceptional quality	GUCCI	1	2	3	4	5	6	7	8	9	10	
	PRADA	1	2	3	4	5	6	7	8	9	10	
	YSL	1	2	3	4	5	6	7	8	9	10	
Tasteful	GUCCI	1	2	3	4	5	6	7	8	9	10	
	PRADA	1	2	3	4	5	6	7	8	9	10	
	YSL	1	2	3	4	5	6	7	8	9	10	
Sophisticated	GUCCI	1	2	3	4	5	6	7	8	9	10	
	PRADA	1	2	3	4	5	6	7	8	9	10	
	YSL	1	2	3	4	5	6	7	8	9	10	
Rewarding	GUCCI	1	2	3	4	5	6	7	8	9	10	
	PRADA	1	2	3	4	5	6	7	8	9	10	
	YSL	1	2	3	4	5	6	7	8	9	10	
Well regarded	GUCCI	1	2	3	4	5	6	7	8	9	10	
	PRADA	1	2	3	4	5	6	7	8	9	10	
	YSL	1	2	3	4	5	6	7	8	9	10	
Luxurious	GUCCI	1	2	3	4	5	6	7	8	9	10	
	PRADA	1	2	3	4	5	6	7	8	9	10	
	YSL	1	2	3	4	5	6	7	8	9	10	
Affordable	GUCCI	1	2	3	4	5	6	7	8	9	10	
	PRADA	1	2	3	4	5	6	7	8	9	10	
	YSL	1	2	3	4	5	6	7	8	9	10	

LAST QUESTIONS ABOUT YOU...

This information is not to be used for any other purpose than statistics – They are kept completely confidential and treated anonymously.

S1. Are you ?

Female
Male

S2A. Currently, what is your situation?

You work	1
You are unemployed, but have already worked	2
You are retired	3
You are looking for a first job	4
You are a student	5
You are a housewife or househusband	6
You are in another situation (disabled, unemployed never worked before)	7

S2B. More precisely, what is your current occupation or, if you are currently unemployed, what was your last occupation?

IF CODE 1 OR 2 IN S2A

ONLY ONE ANSWER POSSIBLE

Merchant, head of a company, entrepreneur	1
Senior executive, liberal profession	2
Middle manager, intermediate professional	3
Employee	4
Other, please specify	5

S3. How old are you?

Less than 18 y.o	1
Between 18 and 24 y.o	2
Between 25 and 34 y.o	3
Between 35 and 49 y.o	4
Between 50 and 64 y.o	5
65 y.o and over	6

S4. What is your household monthly income before taxes?

This information is not to be used for any other purpose than statistics – It is kept completely confidential and treated anonymously.

Less than 1.200 Euros	4
Between 1.200 and 1.799 Euros	5
Between 1.800 and 2.399 Euros	6
Between 2.400 and 2.999 Euros	7
Between 3.000 and 4.999 Euros	8
Between 5.000 and 6.999 Euros	9
Between 7.000 and 9.999 Euros	10
Between 10.000 and 14.999 Euros	11
Between 15.000 and 19.999 Euros	12
20.000 Euros and above	13
I don't want to answer	14

S4. What is the highest degree or level of education you have completed?

High school	4
Bachelor degree	5
Master degree	6
Ph.D. or MBA	7
Other, please specify (____)	

S5. Which country do you currently reside in?

EUROPE	
1	FRANCE
2	UNITED KINGDOM
3	GERMANY
4	OTHER EUROPEAN COUNTRIES (Please specify)
NORTHERN AMERICA	
5	USA
6	CANADA
7	SOUTHERN AMERICA
ASIA	
8	CHINA
9	JAPAN
10	OTHER ASIAN COUNTRY (Please specify)
11	AFRICA
12	OTHER COUNTRY (Please Specify)

Thank you for answering our questions today.

*After this research project, **Annalisa Fraccaro** may look at conducting another research project within the next 12 months.*

C1. If you are a match for the type of person that we are looking for, would you accept that lfop gives your contact details to Annalisa Fraccaro to participate in another research project in the next 12 months?

Yes	1	
No	2	End interview

C2. You therefore accept that lfop gives your contact details to XX. Please confirm once again that you accept.

Yes I accept	1	
No I do not accept	2	End interview

As a reminder, you can exercise your right the right to access, correct and withdraw the information from Annalisa Fraccaro

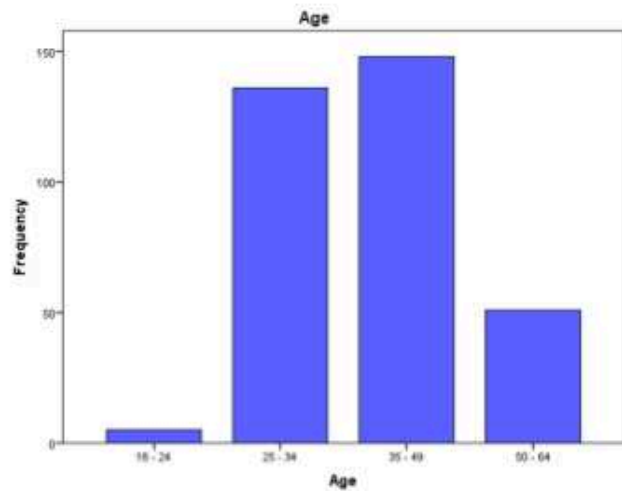
THANK YOU FOR PARTICIPATION IN THIS SURVEY!

4.1.1. Study 5 – Sample description, demographics

Age and Sex

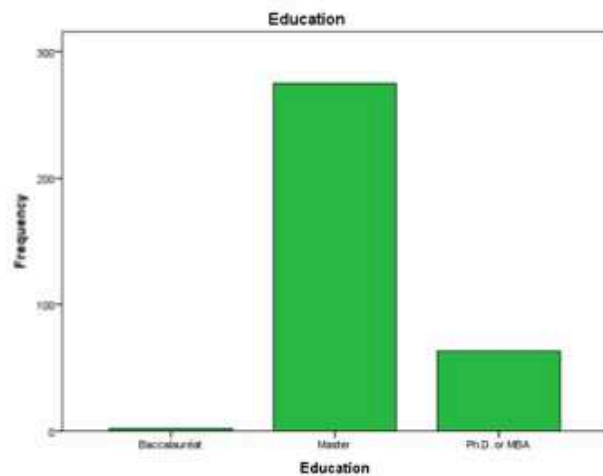
Age			
	Frequency	Percent	Cumulative %
18 - 24	5	1,50%	1,50%
25 - 34	136	40%	41,50%
35 - 49	148	43,50%	85%
50 - 64	51	15%	100%
Total	340	100%	

The totality of the sample is female.



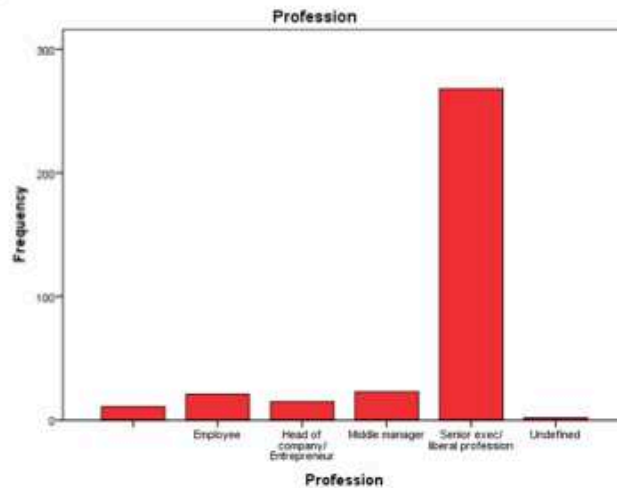
Education

Education			
	Frequency	Percent	Cumulative %
Baccalauréat	2	0,60%	0,60%
Master	275	80,90%	81,50%
Ph.D. or MBA	63	18,5%	100%
Total	340	100%	



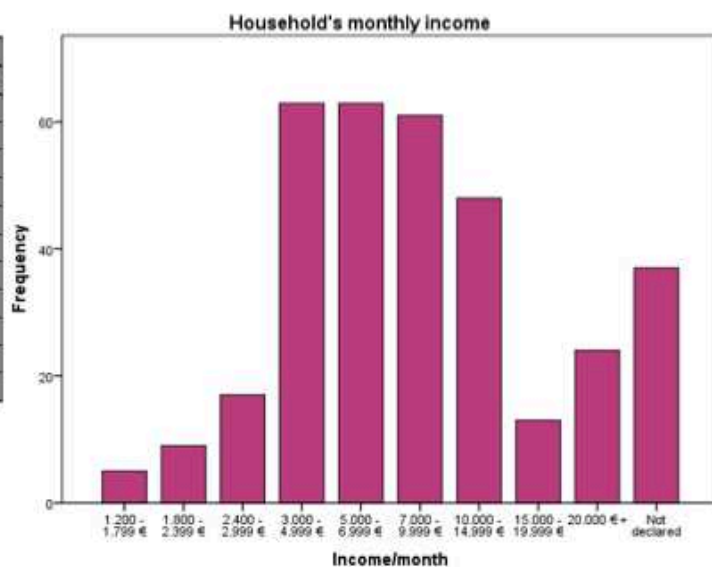
Profession

Profession			
	Frequency	Percent	Cumulative %
Employee	21	6%	6%
Head of company/ Entrepreneur	15	4%	11%
Middle manager	23	7%	17%
Senior exec/ liberal profession	268	79%	96%
Undefined	13	4%	100%
Total	340	100%	



Income

Household's monthly income			
	Frequency	Percent	Cumulative %
1.200 - 1.799 €	5	1,5%	1,5%
1.800 - 2.399 €	9	2,6%	4,1%
2.400 - 2.999 €	17	5,0%	9,1%
3.000 - 4.999 €	63	18,5%	27,6%
5.000 - 6.999 €	63	18,5%	46,2%
7.000 - 9.999 €	61	17,9%	64,1%
10.000 - 14.999 €	48	14,1%	78,2%
15.000 - 19.999 €	13	3,8%	82,1%
20.000 € +	24	7,1%	89,1%
Not declared	37	10,9%	100,0%
Total	340	100,0%	



The higher the income, the higher the number of luxury products bought over the previous 24 months and the higher the total amount spent on luxury goods (Pearson's correlation .176 and .185 respectively, both sig. at 0,01 level).

However, income does not correlate with the probability of buying luxury handbags, shoes, accessories or watches, while it correlates with the probability of buying luxury prêt-à-porter and jewelry (Pearson's correlation .180 and .122, sig. at 0,01 and 0,05 level respectively).

Country of residence

Country respondent lives in			
	Frequency	Percent	Cumulative %
Africa, not specified	4	1%	1%
Germany	4	1%	2%
China	1	0%	3%
Spain	1	0%	3%
France	149	44%	47%
Ireland	1	0%	47%
Italy	149	44%	91%
Luxembourg	1	0%	91%
Netherlands	1	0%	91%
UK	14	4%	96%
Suisse	5	1%	97%
USA	1	0%	97%
Other, not specified	9	3%	100%
Total	340	100%	



4.1.2. ANOVA Brand luxury indices by highest brand utility

To be sure that the highest utility per brand is a reliable measure of the respondent's preference for a brand or the other, I ran one-way ANOVAs to test whether the overall opinion of a brand (i.e., the adapted scale from the Brand Luxury Index by Vigneron & Johnson, 2004, weighted with overall brand's opinion and respondent's judgement on whether they would be likely to wear it) is indeed significantly higher for respondents who have the highest utility for that brand. For all three brands, the ANOVA's are significant, as shown below in Table 43 below (Levene's test of homogeneity of variance are non-significant).

Table 43 – ANOVA; fixed factor: highest brand utility; dependent variables: brands' luxury indices.

		Sum of Squares	df	Mean Square	F	Sig.
Gucci Luxury Index	Between Groups	10,419	2	5,210	5,787	,003
	Within Groups	303,352	337	,900		
	Total	313,771	339			
Prada Luxury Index	Between Groups	9,535	2	4,768	5,299	,005
	Within Groups	303,206	337	,900		
	Total	312,742	339			
YSL Luxury Index	Between Groups	7,857	2	3,928	4,354	,014
	Within Groups	304,031	337	,902		
	Total	311,888	339			

The three Luxury Indices for Gucci, Prada and YSL have been calculated through a principal axis factoring, Varimax rotation, that reduced 11 items measured on Likert scale from 1 to 10 (1. Overall opinion of the brand; 2. Would you like to wear the brand? 3. Is the brand noticeable? 4. Unique? 5. Of exceptional quality? 6. Tasteful? 7. Sophisticated? 8. Rewarding? 9. Well regarded? 10. Luxurious? 11. Affordable?) to 1 weighted factor.

The last item has a very low factor loading, but is still correlated positively and significantly to other luxury-related items; a possible interpretation of this is that respondents, on average, more expensive products are not necessarily perceived as more luxurious, or do receive a more favorable opinion.

Figure 5 -Means plot for Gucci Luxury Index; fixed factor of the ANOVA: highest utility per brand. Individuals whose utility was highest for Gucci overall have a significantly better opinion for Gucci than individuals whose utility was highest for Prada or YSL.

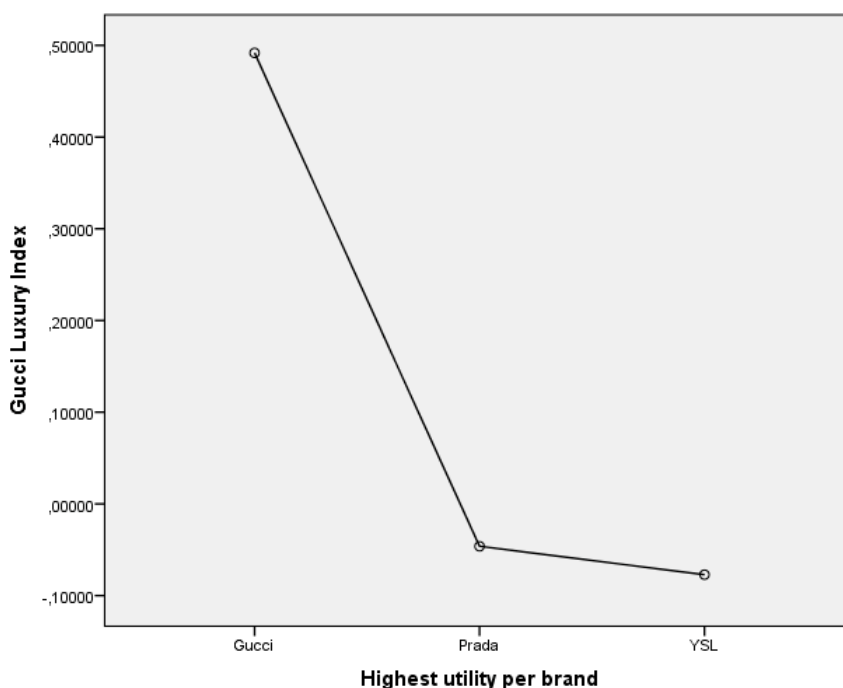


Figure 6 -Means plot for Prada Luxury Index; fixed factor of the ANOVA: highest utility per brand³⁰. Individuals whose utility was highest for Prada overall have a significantly better opinion for Gucci than individuals whose utility was highest for Gucci or YSL.

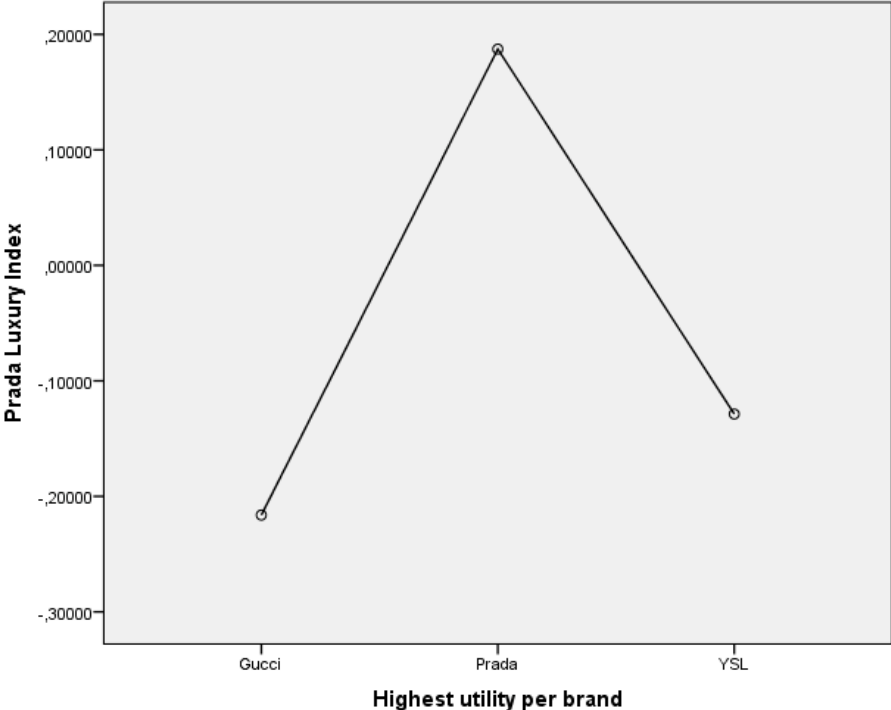
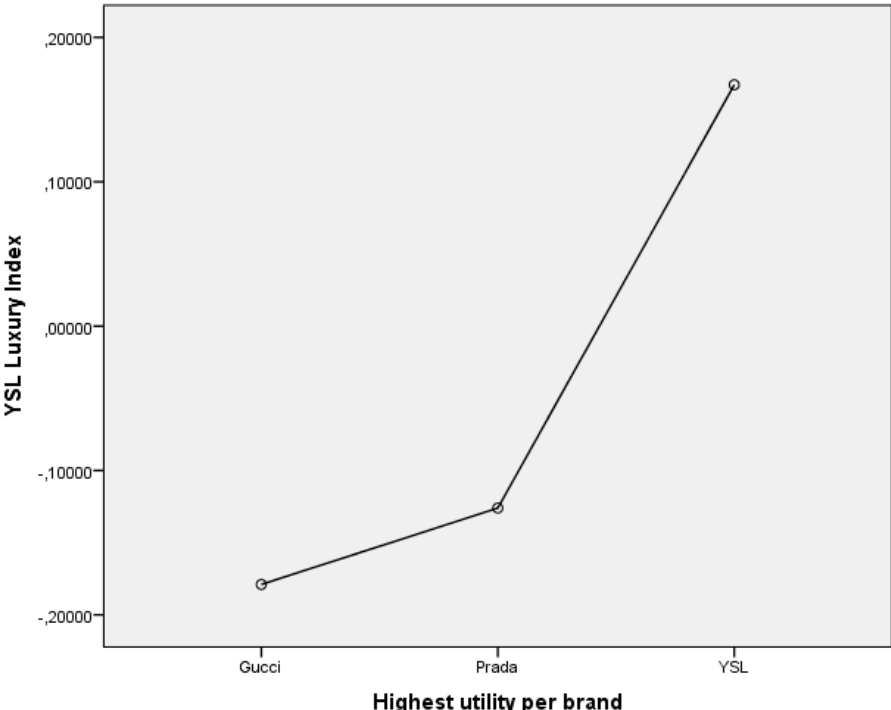


Figure 7 -Means plot for YSL Luxury Index; fixed factor of the ANOVA: highest utility per brand³⁰. Individuals whose utility was highest for Prada overall have a significantly better opinion for Gucci than individuals whose utility was highest for Gucci or Prada.



4.1.3. Pearson correlations

Table 44 on the next page shows the correlations between the utilities calculated in the conjoint analysis task and other variables measured with the questionnaire. Significant correlations show that:

- Brand utility for Gucci is positively correlated to the utility of 1595, 1640 and for large handbags, while it is negatively correlated with the utility for prices 1600 and 1560 and small bags.
- The higher the utility for Prada, the higher the utility for 1640 and medium size handbags, while utilities for 1600, for 1595 and for small handbags decrease. Moreover, as the utility for Prada increases, the belief that luxury products should be status symbols weakens, respondents have lower need for uniqueness (therefore a higher need for conformity), they tend to look less for hedonic properties of the products they buy and appreciate less handbags that prominently show their brand logos.
- The higher the utility for YSL, the higher the utility for 1600 and 1560 and small bags, the lower the utility for 1640 and large handbags. Respondents who have a higher utility for YSL than for the other two brands, tend to believe luxury products should be a status symbol, they prefer unique products and they also look for hedonic properties in their luxury purchases.
- The higher the utility for large bags, the higher the utility for 1560 and 1595.
- The higher the utility for small bags, the higher the utility for 1600, the stronger the belief that luxury products should be a symbol for status, the higher the need for uniqueness and the search for hedonic properties in luxury consumption (as well as the higher the utility for YSL, as mentioned above).
- The stronger the belief that a luxury product should be a status symbol, the lower the utilities for Prada and for large bags, the higher the utilities for YSL and for small bags. The factor describing this belief is also positively correlated to need for uniqueness, price-quality schema, search for hedonism and preference for loud/prominent luxury products.
- The higher the need for uniqueness, the lower the utilities for Prada and 1640, the higher the utilities for YSL and for small bags. Moreover, need for uniqueness is positively and significantly correlated with the belief that a luxury product should

convey the status of its owner, to price quality schema (the extent to which an individual relies on price as an indicator of quality) and search for hedonic properties.

- Price-quality schema is negatively correlated with the utility of 1560 but positively to all other personality traits/ motivations to engage in luxury.
- Search for hedonic properties in luxury consumption is negatively correlated with the utility for Prada and positively with the utilities for YSL and small bags.
- Respondents who prefer prominent/loud bags, have a lower utility for Prada and 1560, but a higher utility for 1640 (i.e., the highest price). Moreover, they believe that luxury should be a status symbol and they rely on price as an indicator of quality.
- Moving on to demographics, as the respondents get older, their utilities for Gucci and Prada and large bags tend to increase, while the utilities for YSL and small bags decrease. Also, their preference for lower prices (i.e., 1560) decreases, while the utility for 1595 and 1640 increases. Interestingly, for respondents belonging to older age groups, the need for uniqueness tends to decrease, while their income and education level increase.
- As the income increases, respondents tend to prefer higher prices and start to dislike lower prices. Income is positively correlated with education level and the total amount spent on luxury products over the past 24 months.
- As the education level increases, the preference for YSL and small bags decreases.
- As the respondents spend more on luxury products, their appreciation (utility) for Prada and large models decreases, while their appreciation (utility) for YSL and small models increases. The amount spent on luxury products is also positively correlated with the belief that luxury products should convey status, need for uniqueness, search for hedonic properties and income.

Table 44 – Pearson’s Correlations⁵⁸

		Total Utility Gucci	Total Utility Prada	Total Utility YSL	Utility 1600 €	Utility 1560 €	Utility 1595 €	Utility 1640 €	Total Utility Large Models	Total Utility Medium Models	Total Utility Small Models	Importance of Product Status	Need for Uniqueness	Price-Quality Schema	Search for Hedonic properties	Preference for Brand Prominence	Age	Income	Education level	Amount spent on luxury
Total Utility Gucci	Pearson Correlation Sig. (2-tailed)	1,000	-0,415	-0,618	-0,112	-0,310	0,209	0,265	0,296	-0,096	-0,215	-0,030	-0,027	0,006	-0,014	0,084	0,275	0,075	0,101	-0,008
Total Utility Prada	Pearson Correlation Sig. (2-tailed)	-0,415	1,000	-0,458	-0,168	0,087	-0,174	0,251	0,026	0,140	-0,161	-0,207	-0,162	-0,076	-0,163	-0,149	0,110	-0,039	0,098	-0,158
Total Utility YSL	Pearson Correlation Sig. (2-tailed)	-0,618	-0,458	1,000	0,255	0,228	-0,054	-0,476	0,636	0,010	0,003	0,000	0,003	0,161	0,003	0,006	0,042	0,471	0,072	0,003
Utility 1600 €	Pearson Correlation Sig. (2-tailed)	-0,112	-0,168	0,255	1,000	-0,394	-0,217	-0,473	0,000	-0,073	0,353	0,048	0,035	0,027	0,027	-0,108	-0,096	-0,012	-0,038	0,038
Utility 1560 €	Pearson Correlation Sig. (2-tailed)	-0,310	0,087	0,228	-0,394	1,000	-0,424	-0,256	0,000	-0,130	0,000	-0,032	0,085	-0,116	-0,041	-0,039	-0,121	-0,129	-0,058	-0,054
Utility 1595 €	Pearson Correlation Sig. (2-tailed)	0,209	-0,174	-0,054	-0,217	-0,424	1,000	-0,223	0,000	0,001	-0,303	0,084	-0,007	0,003	0,091	-0,003	0,127	0,033	0,084	0,083
Utility 1640 €	Pearson Correlation Sig. (2-tailed)	0,265	0,251	-0,476	-0,473	-0,256	-0,223	1,000	-0,097	0,219	-0,110	-0,095	-0,123	0,093	-0,068	0,163	0,119	0,122	0,027	-0,06
Total Utility Large Models	Pearson Correlation Sig. (2-tailed)	0,296	0,026	-0,311	-0,273	0,120	0,291	-0,097	1,000	-0,499	-0,558	-0,121	-0,031	-0,038	-0,069	-0,062	0,245	0,011	0,099	-0,150
Total Utility Medium Models	Pearson Correlation Sig. (2-tailed)	-0,096	0,140	-0,027	-0,073	-0,130	0,001	0,219	0,000	1,000	-0,440	0,008	-0,091	0,052	-0,088	0,080	0,008	0,073	0,039	0,022
Total Utility Small Models	Pearson Correlation Sig. (2-tailed)	-0,215	-0,161	0,349	0,353	0,000	-0,303	-0,110	-0,558	-0,440	1,000	0,118	0,120	-0,010	0,156	-0,011	-0,261	-0,082	-0,140	0,134
Importance of Product Status	Pearson Correlation Sig. (2-tailed)	-0,030	-0,207	0,208	0,048	-0,032	0,084	-0,095	0,025	0,880	0,030	1,000	0,249	0,371	0,241	0,376	-0,073	-0,034	-0,024	0,155
Need for Uniqueness	Pearson Correlation Sig. (2-tailed)	-0,027	-0,162	0,166	0,035	0,085	-0,007	-0,123	-0,031	-0,091	0,120	0,249	1,000	0,130	0,395	-0,094	-0,131	-0,012	-0,042	0,114
Price-Quality Schema	Pearson Correlation Sig. (2-tailed)	0,006	-0,076	0,060	0,027	-0,116	0,003	0,093	-0,038	0,052	-0,010	0,000	0,092	0,027	0,017	0,000	0,016	0,820	0,442	0,035
Search for Hedonic properties	Pearson Correlation Sig. (2-tailed)	0,006	-0,076	0,060	0,027	-0,116	0,003	0,093	-0,038	0,052	-0,010	0,371	0,130	1,000	0,214	0,214	0,042	0,047	-0,019	0,053
Preference for Brand Prominence	Pearson Correlation Sig. (2-tailed)	0,084	-0,149	0,047	-0,108	-0,039	-0,003	0,163	-0,062	0,080	-0,011	0,000	0,017	0,000	0,000	0,000	0,436	0,390	0,733	0,329
Age	Pearson Correlation Sig. (2-tailed)	0,275	0,110	-0,364	-0,096	-0,121	0,127	0,119	0,000	0,008	-0,261	-0,073	-0,131	0,042	0,087	0,047	1	0,321	0,321	0,017
Income	Pearson Correlation Sig. (2-tailed)	0,075	-0,039	-0,04	-0,012	-0,129	0,033	0,122	0,011	0,073	-0,082	-0,034	-0,012	0,047	0,106	0,083	0,321	1	0,114	0,212
Education level	Pearson Correlation Sig. (2-tailed)	0,101	0,098	-0,184	-0,038	-0,058	0,084	0,027	0,099	0,039	-0,140	-0,024	-0,042	-0,019	0,035	0,023	0,321	0,114	1	-0,008
Amount spent on luxury	Pearson Correlation Sig. (2-tailed)	-0,008	-0,158	0,144	0,038	-0,054	0,083	-0,06	-0,150	0,022	0,134	0,155	0,114	0,053	0,231	0,101	0,017	0,212	-0,008	1

⁵⁸ For Sig. (2-tailed) please find in green values <0,05; if the correlation is significant at 0,05, then the correlation coefficient is highlighted: in red if it is significant and negative and in green if it is significant and positive.

4.1.4. Cluster analysis

Figure 8 – Coefficients representing the average distance from the cluster center (y-axis) against number of clusters maintained. As we group more and more respondents together into fewer clusters, the average distance from the cluster center increases, because we are grouping individuals that are substantially different from one another. The other extreme is to keep as many cluster as the number of respondents, with the obvious inconvenient that we would be dealing with too many groups that would be constituted by only 1 individual, which is less interesting from a managerial point of view.

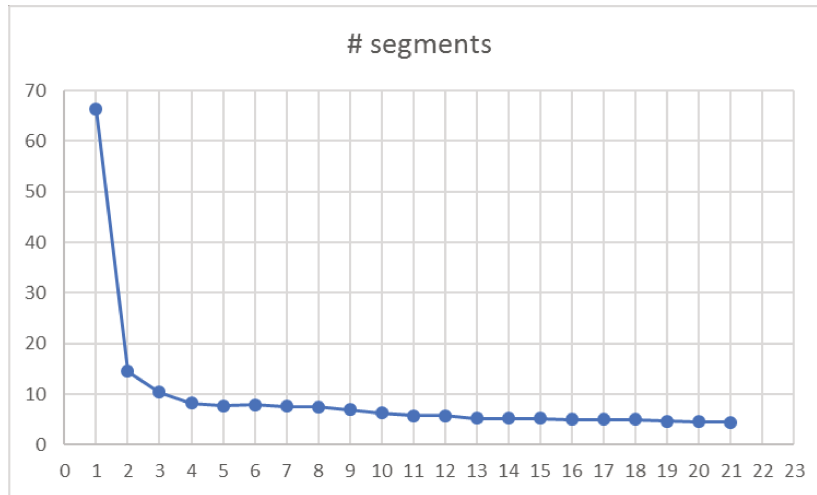


Table 45 - When creating 4 clusters, the profiles are interpretable and consistent with some segmentations we have come across in the literature.

Final Cluster Centers				
	Cluster			
	1	2	3	4
Need for status	,69933	,89081	-,45227	-,73380
Need for uniqueness	-,61598	,57834	,40484	-1,08817
Price-Quality Schema	,25199	,84979	-,42807	-,44674
Hedonism	-,10277	,44215	,22614	-,90920
Preference for brand prominence	1,24259	,12224	-,37306	-,24718

4.1.5. Mediation analyses

4.1.5.1. Dependent variable: Utility for 1560; Mediator: Utility for YSL

Run MATRIX procedure:

```
***** PROCESS Procedure for SPSS Release 2.15 *****
          Written by Andrew F. Hayes, Ph.D.      www.afhayes.com
          Documentation available in Hayes (2013). www.guilford.com/p/hayes3
*****
Model = 4
Y = Utility 1560
X = Cluster membership (categorical 1=Patrician; 2=Snob; 3= Low Profile; 4= Parvenus)
M = Utility YSL

Sample size
      340

Coding of categorical X variable for analysis:

Cluster membership      D1      D2      D3
Patrician                ,00      ,00      ,00
Snob                     1,00      ,00      ,00
Low Profile              ,00      1,00      ,00
Parvenus                 ,00      ,00      1,00

Level of confidence for all confidence intervals in output:
      95,00

*****
Outcome: Utility YSL

Model Summary
      R          R-sq      MSE          F          df1          df2          p
      ,2238      ,0501  8914,0814      5,9081      3,0000      336,0000      ,0006

Model
      coeff          se          t          p          LLCI          ULCI
Constant    59,0419      8,1562      7,2389      ,0000      42,9984      75,0855
D1          -3,0384      12,8673     -,2361      ,8135     -28,3491     22,2723
D2          -50,9406      13,7960     -3,6924     ,0003     -78,0780     -23,8032
D3          11,0852      16,4047      ,6757      ,4997     -21,1837     43,3542

*****
Outcome: Utility 1560

Model Summary
      R          R-sq      MSE          F          df1          df2          p
      ,2413      ,0582  20,0545      5,1782      4,0000      335,0000      ,0005

Model
      coeff          se          t          p          LLCI          ULCI
Constant    ,7081          ,4159      1,7025     ,0896      -,1100      1,5263
Utility YSL ,0115          ,0026      4,4473     ,0000      ,0064      ,0166
D1          -,0297          ,6104     -,0487     ,9612     -1,2303     1,1709
D2          ,4242          ,6675      ,6355     ,5256     -,8889     1,7372
D3          -,8628          ,7786     -1,1081     ,2686     -2,3944     ,6688

***** DIRECT AND INDIRECT EFFECTS *****

Relative direct effects of X on Y
      coeff          se          t          p          LLCI          ULCI
D1          -,0297          ,6104     -,0487     ,9612     -1,2303     1,1709
D2          ,4242          ,6675      ,6355     ,5256     -,8889     1,7372
D3          -,8628          ,7786     -1,1081     ,2686     -2,3944     ,6688

Omnibus test of direct effect of X on Y
      R-sq          F          df1          df2          p
      ,0062          ,7335      3,0000      335,0000      ,5326
=====
```


Relative indirect effect(s) of X on Y through: Utility YSL

	Effect	SE(boot)	LLCI	ULCI
D1	-,0350	,1538	-,3186	,2746
D2	-,5862	,1853	-1,0119	-,2658
D3	,1276	,2070	-,2760	,5645
Omnibus	,0005	,0003	,0001	,0010

4.1.5.2. Dependent variable: Utility for 1600; Mediator: Utility for YSL

Run MATRIX procedure:

Model = 4
 Y = Utility 1600
 X = Cluster membership (categorical 1=Patrician; 2=Snob; 3= Low Profile; 4= Parvenus)
 M = Utility YSL

Sample size
 340

Coding of categorical X variable for analysis:

Cluster membership	D1	D2	D3
Patrician	,00	,00	,00
Snob	1,00	,00	,00
Low Profile	,00	1,00	,00
Parvenus	,00	,00	1,00

Outcome: Utility YSL

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2238	,0501	8914,0814	5,9081	3,0000	336,0000	,0006

Model

	coeff	se	t	p	LLCI	ULCI
Constant	59,0419	8,1562	7,2389	,0000	42,9984	75,0855
D1	-3,0384	12,8673	-,2361	,8135	-28,3491	22,2723
D2	-50,9406	13,7960	-3,6924	,0003	-78,0780	-23,8032
D3	11,0852	16,4047	,6757	,4997	-21,1837	43,3542

Outcome: Utility 1600

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2615	,0684	20,5689	6,1481	4,0000	335,0000	,0001

Model

	coeff	se	t	p	LLCI	ULCI
Constant	-,9721	,4212	-2,3076	,0216	-1,8007	-,1435
Utility YSL	,0128	,0026	4,8901	,0000	,0077	,0180
D1	-,2894	,6181	-,4682	,6399	-1,5054	,9265
D2	,2309	,6760	,3416	,7329	-1,0988	1,5607
D3	-,6508	,7886	-,8253	,4098	-2,2019	,9004

***** DIRECT AND INDIRECT EFFECTS *****

Relative direct effects of X on Y

	coeff	se	t	p	LLCI	ULCI
D1	-,2894	,6181	-,4682	,6399	-1,5054	,9265
D2	,2309	,6760	,3416	,7329	-1,0988	1,5607
D3	-,6508	,7886	-,8253	,4098	-2,2019	,9004

Omnibus test of direct effect of X on Y

R-sq	F	df1	df2	p
,0034	,4063	3,0000	335,0000	,7486

=====

Relative indirect effect(s) of X on Y through: Utility YSL

	Effect	SE(boot)	LLCI	ULCI
D1	-,0389	,1697	-,3483	,2856
D2	-,6528	,2106	-1,1227	-,3050
D3	,1421	,2260	-,2702	,6412
Omnibus	,0005	,0003	,0001	,0013

4.1.5.3. Dependent variable: Utility for 1640; Mediator: Utility for YSL

Run MATRIX procedure:

Model = 4
 Y = Utility 1640
 X = Cluster membership (categorical 1=Patrician; 2=Snob; 3= Low Profile; 4= Parvenus)
 M = Utility YSL

Sample size
 340

Coding of categorical X variable for analysis:

Cluster membership	D1	D2	D3
Patrician	,00	,00	,00
Snob	1,00	,00	,00
Low Profile	,00	1,00	,00
Parvenus	,00	,00	1,00

 Outcome: Utility YSL

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2238	,0501	8914,0814	5,9081	3,0000	336,0000	,0006

Model	coeff	se	t	p	LLCI	ULCI
Constant	59,0419	8,1562	7,2389	,0000	42,9984	75,0855
D1	-3,0384	12,8673	-,2361	,8135	-28,3491	22,2723
D2	-50,9406	13,7960	-3,6924	,0003	-78,0780	-23,8032
D3	11,0852	16,4047	,6757	,4997	-21,1837	43,3542

 Outcome: Utility 1640

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,5038	,2538	13,6797	28,4911	4,0000	335,0000	,0000

Model	coeff	se	t	p	LLCI	ULCI
Constant	-2,1077	,3435	-6,1356	,0000	-2,7835	-1,4320
Utility YSL	-,0214	,0021	-10,0068	,0000	-,0256	-,0172
D1	,2106	,5041	,4178	,6763	-,7810	1,2023
D2	,3384	,5513	,6138	,5398	-,7461	1,4229
D3	2,2058	,6431	3,4300	,0007	,9408	3,4707

***** DIRECT AND INDIRECT EFFECTS *****

Relative direct effects of X on Y	coeff	se	t	p	LLCI	ULCI
D1	,2106	,5041	,4178	,6763	-,7810	1,2023
D2	,3384	,5513	,6138	,5398	-,7461	1,4229
D3	2,2058	,6431	3,4300	,0007	,9408	3,4707

Omnibus test of direct effect of X on Y	R-sq	F	df1	df2	p
	,0273	4,0912	3,0000	335,0000	,0071

=====

Relative indirect effect(s) of X on Y through: Utility YSL

	Effect	SE(boot)	LLCI	ULCI
D1	,0650	,2797	-,4749	,6109
D2	1,0894	,3202	,5401	1,8453
D3	-,2371	,3693	-,9867	,4802
Omnibus	-,0009	,0005	-,0020	-,0001

4.1.5.4. Dependent variable: Utility for 1595; Mediator: Utility for Prada

Run MATRIX procedure:

Model = 4
 Y = Utility 1595
 X = Cluster membership (categorical 1=Patrician; 2=Snob; 3= Low Profile; 4= Parvenus)
 M = Utility Prada

Sample size
 340

Coding of categorical X variable for analysis:

Cluster membership	D1	D2	D3
Patrician	,00	,00	,00
Snob	1,00	,00	,00
Low Profile	,00	1,00	,00
Parvenus	,00	,00	1,00

 Outcome: Utility Prada

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2595	,0673	6537,6405	8,0837	3,0000	336,0000	,0000

Model	coeff	se	t	p	LLCI	ULCI
Constant	39,4335	6,9849	5,6456	,0000	25,6939	53,1731
D1	-12,2808	11,0195	-1,1145	,2659	-33,9566	9,3951
D2	45,4020	11,8148	3,8428	,0001	22,1617	68,6422
D3	-10,6608	14,0489	-,7588	,4485	-38,2956	16,9741

 Outcome: Utility 1595

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,1907	,0364	14,8982	3,1596	4,0000	335,0000	,0143

Model	coeff	se	t	p	LLCI	ULCI
Constant	2,5045	,3489	7,1784	,0000	1,8182	3,1908
Utility Prada	-,0078	,0026	-2,9820	,0031	-,0129	-,0026
D1	,0221	,5270	,0419	,9666	-1,0146	1,0587
D2	-,4913	,5763	-,8526	,3945	-1,6249	,6422
D3	-,8075	,6712	-1,2031	,2298	-2,1279	,5128

***** DIRECT AND INDIRECT EFFECTS *****

Relative direct effects of X on Y						
	coeff	se	t	p	LLCI	ULCI
D1	,0221	,5270	,0419	,9666	-1,0146	1,0587
D2	-,4913	,5763	-,8526	,3945	-1,6249	,6422
D3	-,8075	,6712	-1,2031	,2298	-2,1279	,5128

Omnibus test of direct effect of X on Y					
	R-sq	F	df1	df2	p
	,0061	,7114	3,0000	335,0000	,5457

=====
 Relative indirect effect(s) of X on Y through: Utility Prada

	Effect	SE(boot)	LLCI	ULCI
D1	,0954	,1001	-,0431	,3597
D2	-,3526	,1403	-,7059	-,1392
D3	,0828	,1299	-,0936	,4133
Omnibus	-,0005	,0003	-,0010	-,0001

4.1.5.5. Dependent variable: Utility for 1600; Mediator: Utility for Prada

Run MATRIX procedure:

Model = 4
 Y = Utility 1600
 X = Cluster membership (categorical 1=Patrician; 2=Snob; 3= Low Profile; 4= Parvenus)
 M = Utility Prada

Sample size
 340

Coding of categorical X variable for analysis:

Cluster membership	D1	D2	D3
Patrician	,00	,00	,00
Snob	1,00	,00	,00
Low Profile	,00	1,00	,00
Parvenus	,00	,00	1,00

 Outcome: Utility Prada

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2595	,0673	6537,6405	8,0837	3,0000	336,0000	,0000

Model	coeff	se	t	p	LLCI	ULCI
Constant	39,4335	6,9849	5,6456	,0000	25,6939	53,1731
D1	-12,2808	11,0195	-1,1145	,2659	-33,9566	9,3951
D2	45,4020	11,8148	3,8428	,0001	22,1617	68,6422
D3	-10,6608	14,0489	-,7588	,4485	-38,2956	16,9741

 Outcome: Utility 1600

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,1770	,0313	21,3873	2,7083	4,0000	335,0000	,0302

Model	coeff	se	t	p	LLCI	ULCI
Constant	,1771	,4180	,4238	,6720	-,6451	,9994
Utility Prada	-,0100	,0031	-3,1906	,0016	-,0161	-,0038
D1	-,4506	,6314	-,7137	,4759	-1,6927	,7914
D2	,0301	,6905	,0437	,9652	-1,3280	1,3883
D3	-,6149	,8042	-,7645	,4451	-2,1968	,9671

***** DIRECT AND INDIRECT EFFECTS *****

Relative direct effects of X on Y

	coeff	se	t	p	LLCI	ULCI
D1	-,4506	,6314	-,7137	,4759	-1,6927	,7914
D2	,0301	,6905	,0437	,9652	-1,3280	1,3883
D3	-,6149	,8042	-,7645	,4451	-2,1968	,9671

Omnibus test of direct effect of X on Y

	R-sq	F	df1	df2	p
	,0029	,3391	3,0000	335,0000	,7971

=====

Relative indirect effect(s) of X on Y through: Utility Prada

	Effect	SE (boot)	LLCI	ULCI
D1	,1223	,1334	-,0660	,4936
D2	-,4520	,2071	-,9470	-,1149
D3	,1061	,1668	-,1635	,5530
Omnibus	-,0006	,0004	-,0014	-,0001

4.1.5.6. Dependent variable: Utility for 1640; Mediator: Utility for Prada

Run MATRIX procedure:

Model = 4
 Y = Utility 1640
 X = Cluster membership (categorical 1=Patrician; 2=Snob; 3= Low Profile; 4= Parvenus)
 M = Utility Prada

Sample size
 340

Coding of categorical X variable for analysis:

Cluster membership	D1	D2	D3
Patrician	,00	,00	,00
Snob	1,00	,00	,00
Low Profile	,00	1,00	,00
Parvenus	,00	,00	1,00

 Outcome: Utility Prada

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2595	,0673	6537,6405	8,0837	3,0000	336,0000	,0000

Model	coeff	se	t	p	LLCI	ULCI
Constant	39,4335	6,9849	5,6456	,0000	25,6939	53,1731
D1	-12,2808	11,0195	-1,1145	,2659	-33,9566	9,3951
D2	45,4020	11,8148	3,8428	,0001	22,1617	68,6422
D3	-10,6608	14,0489	-,7588	,4485	-38,2956	16,9741

 Outcome: Utility 1640

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2966	,0880	16,7204	8,0795	4,0000	335,0000	,0000

Model	coeff	se	t	p	LLCI	ULCI
Constant	-3,8690	,3696	-10,4677	,0000	-4,5961	-3,1419
Utility Prada	,0126	,0028	4,5830	,0000	,0072	,0181
D1	,4309	,5583	,7718	,4408	-,6673	1,5291
D2	,8537	,6105	1,3984	,1629	-,3472	2,0546
D3	2,1035	,7111	2,9581	,0033	,7047	3,5023

***** DIRECT AND INDIRECT EFFECTS *****

Relative direct effects of X on Y

	coeff	se	t	p	LLCI	ULCI
D1	,4309	,5583	,7718	,4408	-,6673	1,5291
D2	,8537	,6105	1,3984	,1629	-,3472	2,0546
D3	2,1035	,7111	2,9581	,0033	,7047	3,5023

Omnibus test of direct effect of X on Y

	R-sq	F	df1	df2	p
	,0252	3,0798	3,0000	335,0000	,0276

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Relative indirect effect(s) of X on Y through: Utility Prada

	Effect	SE(boot)	LLCI	ULCI
D1	-,1553	,1519	-,4683	,1434
D2	,5741	,1697	,2864	,9721
D3	-,1348	,1989	-,5709	,2094
Omnibus	,0007	,0004	,0002	,0015

4.1.5.7. Dependent variable: Utility for 1560; Mediator: Utility Large handbags

Run MATRIX procedure:

Model = 4
 Y = Utility 1560
 X = Cluster membership (categorical 1=Patrician; 2=Snob; 3= Low Profile; 4= Parvenus)
 M = Utility Large Handbags

Sample size
 340

Coding of categorical X variable for analysis:

Cluster membership	D1	D2	D3
Patrician	,00	,00	,00
Snob	1,00	,00	,00
Low Profile	,00	1,00	,00
Parvenus	,00	,00	1,00

 Outcome: Utility Large Handbags

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,1402	,0196	10404,1230	2,2449	3,0000	336,0000	,0829

Model	coeff	se	t	p	LLCI	ULCI
Constant	2,5207	8,8115	,2861	,7750	-14,8120	19,8534
D1	-6,2703	13,9012	-,4511	,6522	-33,6147	21,0741
D2	-3,0818	14,9045	-,2068	,8363	-32,3997	26,2361
D3	-44,7687	17,7229	-2,5260	,0120	-79,6304	-9,9069

 Outcome: Utility 1560

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,1248	,0156	20,9627	1,3256	4,0000	335,0000	,2601

Model	coeff	se	t	p	LLCI	ULCI
Constant	1,3746	,3956	3,4750	,0006	,5965	2,1527
Utility Large	,0051	,0024	2,0996	,0365	,0003	,0100
D1	-,0324	,6242	-,0519	,9586	-1,2602	1,1954
D2	-,1462	,6691	-,2185	,8272	-1,4623	1,1699
D3	-,5051	,8030	-,6289	,5298	-2,0847	1,0746

***** DIRECT AND INDIRECT EFFECTS *****

Relative direct effects of X on Y

	coeff	se	t	p	LLCI	ULCI
D1	-,0324	,6242	-,0519	,9586	-1,2602	1,1954
D2	-,1462	,6691	-,2185	,8272	-1,4623	1,1699
D3	-,5051	,8030	-,6289	,5298	-2,0847	1,0746

Omnibus test of direct effect of X on Y

	R-sq	F	df1	df2	p
	,0013	,1424	3,0000	335,0000	,9345

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Relative indirect effect(s) of X on Y through: Utility Large Handbags

	Effect	SE(boot)	LLCI	ULCI
D1	-,0322	,0807	-,2595	,1021
D2	-,0158	,0901	-,2270	,1544
D3	-,2302	,1488	-,6298	-,0094
Omnibus	,0001	,0001	-,0001	,0003

4.1.5.8. Dependent variable: Utility for 1595; Mediator: Utility Large handbags

Run MATRIX procedure:

Model = 4
 Y = Utility 1595
 X = Cluster membership (categorical 1=Patrician; 2=Snob; 3= Low Profile; 4= Parvenus)
 M = Utility Large Handbags

Sample size
 340

Coding of categorical X variable for analysis:

Cluster membership	D1	D2	D3
Patrician	,00	,00	,00
Snob	1,00	,00	,00
Low Profile	,00	1,00	,00
Parvenus	,00	,00	1,00

 Outcome: Utility Large Handbags

Model Summary

R	R-sq	MSE	F	df1	df2	p
,1402	,0196	10404,1230	2,2449	3,0000	336,0000	,0829

Model

	coeff	se	t	p	LLCI	ULCI
Constant	2,5207	8,8115	,2861	,7750	-14,8120	19,8534
D1	-6,2703	13,9012	-,4511	,6522	-33,6147	21,0741
D2	-3,0818	14,9045	-,2068	,8363	-32,3997	26,2361
D3	-44,7687	17,7229	-2,5260	,0120	-79,6304	-9,9069

 Outcome: Utility 1595

Model Summary

R	R-sq	MSE	F	df1	df2	p
,3057	,0935	14,0155	8,6333	4,0000	335,0000	,0000

Model

	coeff	se	t	p	LLCI	ULCI
Constant	2,1704	,3234	6,7101	,0000	1,5341	2,8066
Utility Large	,0111	,0020	5,5273	,0000	,0071	,0150
D1	,1868	,5104	,3661	,7146	-,8171	1,1908
D2	-,8098	,5471	-1,4803	,1397	-1,8859	,2663
D3	-,2293	,6566	-,3492	,7272	-1,5209	1,0624

***** DIRECT AND INDIRECT EFFECTS *****

Relative direct effects of X on Y

	coeff	se	t	p	LLCI	ULCI
D1	,1868	,5104	,3661	,7146	-,8171	1,1908
D2	-,8098	,5471	-1,4803	,1397	-1,8859	,2663
D3	-,2293	,6566	-,3492	,7272	-1,5209	1,0624

Omnibus test of direct effect of X on Y

R-sq	F	df1	df2	p
,0087	1,0665	3,0000	335,0000	,3634

=====

Relative indirect effect(s) of X on Y through: Utility Large Handbags

	Effect	SE (boot)	LLCI	ULCI
D1	-,0694	,1568	-,3891	,2215
D2	-,0341	,1740	-,4231	,3044
D3	-,4955	,2065	-,9514	-,1398
Omnibus	,0001	,0002	-,0001	,0004

4.1.5.9. Dependent variable: Utility for 1600; Mediator: Utility for Large Handbags

Run MATRIX procedure:

Model = 4
 Y = Utility 1600
 X = Cluster membership (categorical 1=Patrician; 2=Snob; 3= Low Profile; 4= Parvenus)
 M = Utility Large Handbags

Sample size
 340

Coding of categorical X variable for analysis:

Cluster membership	D1	D2	D3
Patrician	,00	,00	,00
Snob	1,00	,00	,00
Low Profile	,00	1,00	,00
Parvenus	,00	,00	1,00

 Outcome: Utility Large Handbags

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,1402	,0196	10404,1230	2,2449	3,0000	336,0000	,0829

Model	coeff	se	t	p	LLCI	ULCI
Constant	2,5207	8,8115	,2861	,7750	-14,8120	19,8534
D1	-6,2703	13,9012	-,4511	,6522	-33,6147	21,0741
D2	-3,0818	14,9045	-,2068	,8363	-32,3997	26,2361
D3	-44,7687	17,7229	-2,5260	,0120	-79,6304	-9,9069

 Outcome: Utility 1600

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2829	,0800	20,3118	7,2860	4,0000	335,0000	,0000

Model	coeff	se	t	p	LLCI	ULCI
Constant	-,1830	,3894	-,4701	,6386	-,9490	,5829
Utility Large	-,0129	,0024	-5,3344	,0000	-,0176	-,0081
D1	-,4090	,6144	-,6657	,5061	-1,6176	,7996
D2	-,4615	,6586	-,7007	,4840	-1,7570	,8340
D3	-1,0844	,7905	-1,3718	,1710	-2,6393	,4705

***** DIRECT AND INDIRECT EFFECTS *****

Relative direct effects of X on Y						
	coeff	se	t	p	LLCI	ULCI
D1	-,4090	,6144	-,6657	,5061	-1,6176	,7996
D2	-,4615	,6586	-,7007	,4840	-1,7570	,8340
D3	-1,0844	,7905	-1,3718	,1710	-2,6393	,4705

Omnibus test of direct effect of X on Y						
	R-sq	F	df1	df2	p	
	,0055	,6680	3,0000	335,0000	,5722	

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Relative indirect effect(s) of X on Y through: Utility Large Handbags

	Effect	SE (boot)	LLCI	ULCI
D1	,0806	,1803	-,2710	,4328
D2	,0396	,2057	-,3725	,4436
D3	,5757	,2340	,1956	1,0960
Omnibus	-,0001	,0002	-,0005	,0001

4.1.5.10. Dependent variable: Utility for 1560; Mediator: Utility Medium handbags

Run MATRIX procedure:

Model = 4
 Y = Utility 1560
 X = Cluster membership (categorical 1=Patrician; 2=Snob; 3= Low Profile; 4= Parvenus)
 M = Utility Medium Handbags

Sample size
 340

Coding of categorical X variable for analysis:

Cluster membership	D1	D2	D3
Patrician	,00	,00	,00
Snob	1,00	,00	,00
Low Profile	,00	1,00	,00
Parvenus	,00	,00	1,00

 Outcome: Utility Medium Handbags

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,1730	,0299	8796,0354	3,4536	3,0000	336,0000	,0168

Model	coeff	se	t	p	LLCI	ULCI
Constant	41,2011	8,1020	5,0853	,0000	25,2641	57,1381
D1	,7583	12,7819	,0593	,9527	-24,3842	25,9009
D2	17,6772	13,7044	1,2899	,1980	-9,2800	44,6343
D3	48,6779	16,2958	2,9871	,0030	16,6233	80,7325

 Outcome: Utility 1560

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,1332	,0177	20,9167	1,5126	4,0000	335,0000	,1981

Model	coeff	se	t	p	LLCI	ULCI
Constant	1,6364	,4100	3,9912	,0001	,8299	2,4429
Utility Medium	-,0060	,0027	-2,2702	,0238	-,0113	-,0008
D1	-,0601	,6233	-,0964	,9233	-1,2862	1,1660
D2	-,0553	,6699	-,0825	,9343	-1,3731	1,2625
D3	-,4412	,8051	-,5480	,5840	-2,0250	1,1425

***** DIRECT AND INDIRECT EFFECTS *****

Relative direct effects of X on Y

	coeff	se	t	p	LLCI	ULCI
D1	-,0601	,6233	-,0964	,9233	-1,2862	1,1660
D2	-,0553	,6699	-,0825	,9343	-1,3731	1,2625
D3	-,4412	,8051	-,5480	,5840	-2,0250	1,1425

Omnibus test of direct effect of X on Y

	R-sq	F	df1	df2	p
	,0009	,1036	3,0000	335,0000	,9579

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Relative indirect effect(s) of X on Y through: Utility Medium Handbags

	Effect	SE(boot)	LLCI	ULCI
D1	-,0046	,0838	-,1731	,1758
D2	-,1068	,1078	-,3935	,0461
D3	-,2940	,1555	-,6851	-,0557
Omnibus	-,0001	,0001	-,0005	,0000

4.1.5.11. Dependent variable: Utility for 1640; Mediator: Utility for Medium Handbags

Run MATRIX procedure:

Model = 4
 Y = Utility 1640
 X = Cluster membership (categorical 1=Patrician; 2=Snob; 3= Low Profile; 4= Parvenus)
 M = Utility Medium Handbags

Sample size
 340

Coding of categorical X variable for analysis:

Cluster membership	D1	D2	D3
Patrician	,00	,00	,00
Snob	1,00	,00	,00
Low Profile	,00	1,00	,00
Parvenus	,00	,00	1,00

 Outcome: Utility Medium

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,1730	,0299	8796,0354	3,4536	3,0000	336,0000	,0168

Model	coeff	se	t	p	LLCI	ULCI
Constant	41,2011	8,1020	5,0853	,0000	25,2641	57,1381
D1	,7583	12,7819	,0593	,9527	-24,3842	25,9009
D2	17,6772	13,7044	1,2899	,1980	-9,2800	44,6343
D3	48,6779	16,2958	2,9871	,0030	16,6233	80,7325

 Outcome: Utility 1640

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2614	,0684	17,0804	6,1443	4,0000	335,0000	,0001

Model	coeff	se	t	p	LLCI	ULCI
Constant	-3,7343	,3705	-10,0790	,0000	-4,4632	-3,0055
Utility Medium	,0088	,0024	3,6745	,0003	,0041	,0136
D1	,2689	,5633	,4774	,6334	-,8390	1,3769
D2	1,2717	,6054	2,1005	,0364	,0808	2,4625
D3	1,5387	,7276	2,1149	,0352	,1075	2,9699

***** DIRECT AND INDIRECT EFFECTS *****

Relative direct effects of X on Y

	coeff	se	t	p	LLCI	ULCI
D1	,2689	,5633	,4774	,6334	-,8390	1,3769
D2	1,2717	,6054	2,1005	,0364	,0808	2,4625
D3	1,5387	,7276	2,1149	,0352	,1075	2,9699

Omnibus test of direct effect of X on Y

	R-sq	F	df1	df2	p
	,0204	2,4406	3,0000	335,0000	,0642

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Relative indirect effect(s) of X on Y through: Utility Medium Handbags

	Effect	SE (boot)	LLCI	ULCI
D1	,0067	,1141	-,2235	,2300
D2	,1562	,1327	-,0687	,4703
D3	,4300	,1668	,1697	,8378
Omnibus	,0002	,0002	-,0001	,0005
