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Andreea Minea

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Institut d'études politiques de Paris
ECOLE DOCTORALE DE SCIENCES PO
Programme doctoral en Sciences économiques
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Doctorat en Sciences économiques

Essays on the social inclusion of young people

Family and labor market pathways

Andreea Viorica MINEA

Thesis supervised by Yann ALGAN, Professeur des universités and
Pierre CAHUC, Professeur des universités

defended on the 3rd of April 2018

Jury:

Mr Yann Algan, Professeur des universités, IEP de Paris

Mrs Ghazala Azmat, Professeur des universités, IEP de Paris

Mr Pierre Cahuc, Professeur des universités, Ecole Polytechnique

Mr François Fontaine, Professeur des universités, Paris School of
Economics, Université Paris 1 - Panthéon Sorbonne

Mrs Paola Giuliano, Associate Professor of Economics,
UCLA Anderson School of Management (reviewer)

Mr Roland Rathelot, Associate Professor of Economics,
University of Warwick (reviewer)

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Résumé en français

Comment favoriser l'autonomie et l'insertion sociale et professionnelle des jeunes? La récente récession a touché les jeunes de manière disproportionnée: au sein des pays membres de l'OCDE, 39 millions de jeunes étaient NEET (ni en emploi, ni en éducation, ni en formation) en 2013, 5 millions de plus par rapport à la période précédant la crise (OECD, 2015), près d'un emploi sur dix occupé par des travailleurs de moins de 30 ans a été détruit entre 2007 et 2014 et les jeunes ont également subi les pertes de revenus les plus importantes par rapport aux autres groupes démographiques, avec des taux de pauvreté plus élevés parmi ceux qui habitent en dehors du foyer parental (OECD, 2016). Les difficultés éprouvées par les jeunes à trouver leur autonomie par rapport à la famille et à réaliser une transition réussie de l'école au marché du travail peuvent avoir des conséquences persistantes sur leurs revenus, leurs compétences, leur état de santé ou leur capacité à former une famille (Kramarz and Viarengo, 2015). Il est donc essentiel de comprendre les facteurs qui déterminent ou encouragent l'autonomie des jeunes.

Cette thèse s'intéresse ainsi à deux dimensions portant sur l'insertion sociale et professionnelle des jeunes. D'une part, elle comprend une dimension culturelle car les jeunes sont formés et reçoivent des valeurs de la part de leurs familles et leurs groupes sociaux qui peuvent influencer sur leur émancipation et choix de vie, de résidence, de mariage ou d'emploi ultérieurs. Les valeurs et normes culturelles dont héritent les jeunes sont liées à leur probabilité de sortie du foyer parental et peuvent déboucher sur des choix très différents faits par les jeunes hommes et les jeunes femmes, comme le met en évidence cette thèse (chapitre 1). D'autre part, elle comporte également une dimension emploi et marché du travail car l'insertion des jeunes passe également et de manière fondamentale par leurs transitions sur le marché du travail. Cette transition peut être entravée si les jeunes sont discriminés (chapitre 2) ou si les politiques mises en place pour les soutenir, comme les contrats subventionnés, n'augmentent pas de manière significative leurs chances de retrouver un emploi (chapitre 3).

Le premier chapitre de cette thèse propose une nouvelle interprétation de la variation de la part des jeunes vivant avec leurs parents en mettant l'accent non seulement sur le fait que la culture est essentielle pour comprendre cette hétérogénéité entre pays mais aussi que cette composante culturelle passe par le comportement des jeunes hommes qui sont plus susceptibles de cohabiter avec leurs parents. Dans les cultures ayant des valeurs traditionnelles sur les rôles de genre, les jeunes hommes sont plus incités à continuer de vivre dans le foyer parental car,

contrairement aux femmes, ils bénéficient des avantages d'être pris en charge par leurs parents avec une contribution minimale aux tâches ménagères et tout en bénéficiant de la liberté de mener leur vie privée comme ils le souhaitent compte tenu de la libéralisation des attitudes parentales. En utilisant les données du Current Population Survey, je montre que les choix résidentiels des jeunes hommes descendants d'immigrés aux États-Unis reproduisent ceux des jeunes hommes dans leur pays d'origine alors qu'aucun schéma similaire ne peut être observée pour les femmes. La probabilité pour les jeunes hommes de rester dans le foyer parental est positivement liée à leur participation limitée aux tâches ménagères, ce qui mène à un compromis différent entre vivre avec les parents et déménager pour les deux sexes. Ces résultats suggèrent que les jeunes femmes préféreraient vivre seules, mais en raison de facteurs institutionnels ou sociaux dans leur pays d'origine, elles ne peuvent pas le faire et restent plus longtemps dans le foyer parental. Cependant, dans un environnement institutionnel et sociétal qui facilite leur émancipation, les femmes issues de cultures conservatrices concernant les rôles de genre quittent beaucoup plus rapidement le foyer parental que les hommes et sont plus susceptibles de trouver un époux d'une origine culturelle différente de la leur.

Le deuxième chapitre, coécrit avec Pierre Cahuc, Stéphane Carcillo et Marie-Anne Valfort, porte sur la différence entre la discrimination à l'étape de l'invitation à l'entretien et la discrimination à l'embauche. Sur la base d'une étude de testing sur CV menée en France, nous montrons que dans le secteur privé les jeunes peu qualifiés sont un tiers moins susceptibles d'être rappelés par les employeurs lorsqu'ils sont d'origine maghrébine plutôt que française. En revanche, l'origine des candidats fictifs n'a pas d'incidence sur leur taux de rappel dans le secteur public. Nous menons une enquête révélant que les recruteurs affichent des croyances discriminatoires négatives similaires envers les Maghrébins dans les deux secteurs. Nous présentons un modèle qui montre que l'absence de différences dans les taux de rappel des candidats des deux origines dans le secteur public (pas de discrimination à l'invitation) est compatible, dans ce contexte, avec une discrimination à l'embauche plus forte dans le secteur public suite à l'entretien d'embauche. Ce résultat remet en cause la capacité des études basées sur des testings sur CV à détecter les décisions d'embauche.

Le troisième chapitre, coécrit avec Pierre Cahuc et Stéphane Carcillo, étudie les effets de l'expérience professionnelle des jeunes décrocheurs du secondaire, quatre ans après avoir quitté l'école, en envoyant des CV fictifs à de véritables offres d'emploi en France. Comparé à ceux qui

sont restés au chômage depuis leur sortie de l'école, le taux de rappel n'est pas augmenté pour ceux qui ont une expérience professionnelle, subventionnée ou non, dans le secteur marchand ou non-marchand, s'il n'y a pas de formation accompagnée de certification. En particulier, nous ne trouvons aucun effet de stigmatisation associé à l'expérience de travail dans le secteur subventionné ou non-marchand. De plus, une formation assortie d'une certification améliore les perspectives d'emploi des jeunes uniquement lorsque le taux de chômage local est faible, ce qui n'est le cas que dans un cinquième des zones d'emploi.

Chapitre 1 – Womanhouse: Normes sociales, différences de genre et cohabitation des jeunes avec leurs parents

Ce chapitre se concentre sur l'écart entre les sexes par rapport à la cohabitation des jeunes avec leurs parents. Il montre que le choix des jeunes d'habiter avec leurs parents a une forte composante culturelle et que l'effet de la culture passe par le comportement des jeunes hommes en raison des normes et valeurs traditionnelles qui définissent les rôles de genre. Dans les sociétés avec des valeurs plus conservatrices sur les rôles de genre, les jeunes femmes doivent consacrer une partie substantielle de leur temps aux travaux ménagers et prendre soin des autres membres du foyer. Au contraire, dans de telles cultures, les hommes ne sont censés apporter que des contributions minimales à de telles tâches qui demeurent à la charge des femmes. Ainsi, les hommes peuvent bénéficier à la fois de la libéralisation des attitudes parentales de même que des avantages plus classiques de cohabitation avec les parents qui s'occupent de leurs enfants, cuisinent pour eux et les soutiennent même financièrement. En d'autres termes, les valeurs traditionnelles sur les rôles de genre sont plus favorables aux hommes qu'aux femmes, puisque leurs mères et/ou sœurs font la plupart des tâches ménagères pour eux quand ils restent vivre au sein de la famille. Cela implique que dans des sociétés caractérisées par de telles valeurs, les hommes quittent le foyer parental à un âge plus avancé que les femmes.

Les explications traditionnelles fournies par la littérature pour les schémas de départ des jeunes du foyer parental ont surtout porté sur les déterminants macro-économiques et institutionnels. Ainsi, les conditions de logement, le marché du travail ou les revenus ont été mis en avant pour expliquer une partie de l'hétérogénéité des conditions de résidence des jeunes entre les pays (Martinez-Granado et Ruiz-Castillo, 2002, Giannelli et Monfardini, 2003- pour le logement; Becker et al., 2010, Kaplan, 2012, - pour l'impact de l'insécurité de l'emploi et des risques sur le

marché du travail; Lee et Painter, 2013 pour le rôle des chocs économiques sur la formation des ménages, etc.). Contrairement à ces approches conventionnelles, la littérature de l'économie culturelle a souligné le potentiel rôle de la culture d'origine des individus dans l'explication des choix résidentiels des jeunes. Giuliano (2007) a mis en avant le rôle de la révolution sexuelle des années 1970, à travers l'impact sur les attitudes des parents à l'égard des libertés de leurs jeunes enfants pour expliquer les différences existantes entre les pays européens pour ce qui est de la proportion des jeunes habitant avec leurs parents. De même, Alesina et Giuliano (2010) ont montré que les sociétés qui affichent des valeurs familiales fortes, comme ceux de la Méditerranée, sont aussi ceux où les individus sont plus nombreux à vivre avec leurs parents.

Ce chapitre met en évidence l'écart entre les sexes par rapport au degré de cohabitation avec les parents, en insistant sur l'importance des rôles de genre dans la compréhension des décisions résidentielles des jeunes. Afin d'examiner l'interprétation culturelle des différences de genre, il examine le comportement des hommes et des femmes descendants d'immigrés aux États-Unis. Cela permet d'isoler l'effet culturel grâce à l'étude d'individus partageant le même environnement économique et institutionnel (Fernandez, 2011, Bisin et Verdier, 2011). L'article reflète ainsi la transmission verticale des valeurs culturelles (Bisin, Verdier, 2011), le type de transmission le plus susceptible de se produire pour les valeurs liées aux choix de la famille et de la cohabitation. L'estimation de la composante culturelle des schémas de cohabitation est basée sur les données du Current Population Survey qui permettent d'identifier environ 70 pays d'origine des descendants d'immigrés aux États-Unis.

Les résultats montrent que le comportement des jeunes hommes descendants d'immigrés reproduit celui des jeunes hommes dans leur pays d'origine en ce qui concerne la préférence de vivre dans le foyer parental, alors qu'aucune corrélation statistiquement significative n'est observée pour les femmes. Parmi les descendants d'immigrés d'origine européenne, les jeunes hommes d'Europe du Sud sont les plus susceptibles de cohabiter avec leurs parents par rapport aux Européens du Nord, suivis par les Européens de l'Est et ceux de l'Europe Occidentale, un schéma qui imite le classement actuel des pays européens en termes du pourcentage de jeunes hommes qui vivent chez leurs parents. Ces propensions supérieures à vivre avec les parents de jeunes hommes descendants d'immigrés de certaines origines par rapport aux autres ne semblent pas être dues à leur faible performance sur le marché du travail ou à de chocs économiques tels que la récente récession.

En outre, en utilisant les données de l'American Time Use Survey sur la quantité de temps consacré au travail non rémunéré au sein du ménage, cet article montre que les jeunes hommes descendants d'immigrés qui restent plus longtemps dans le ménage parental sont aussi ceux qui passent moins de temps à s'occuper des tâches ménagères. Ainsi, pour les hommes venant de sociétés avec des attitudes plus conservatrices sur les rôles de genre, la participation plus faible aux tâches ménagères est susceptible de représenter une incitation pour retarder le départ du foyer familial. Par ailleurs, si les hommes de ces cultures ont plus d'incitations que les femmes à rester vivre chez leurs parents, les femmes seront plus enclines à dévier de leur rôle culturellement préétabli lorsqu'elles ont la possibilité de le faire, notamment lorsqu'elles vont vivre dans une société plus libérale par rapport aux valeurs de genre. En utilisant des données de l'American Community Survey, je montre qu'aux États-Unis, les immigrantes de première génération qui viennent de cultures caractérisées par des valeurs traditionnelles concernant les rôles de genre sont aussi plus susceptibles d'épouser quelqu'un d'une culture différente de la leur/ en dehors de leur appartenance ethnique. Ainsi, non seulement les femmes de ces cultures quittent le foyer parental plus rapidement aux États-Unis que dans leurs pays d'origine, mais elles cherchent également à minimiser le risque de reproduire le même rôle qu'elles auraient joué dans le foyer dans leur société d'origine. Les valeurs traditionnelles portant sur les rôles de genre mènent les hommes et les femmes à faire des choix différents, exprimés à travers les décisions des descendants d'immigrés de deuxième génération aux États-Unis de cohabiter ou pas avec leurs parents ainsi que d'épouser quelqu'un d'une origine différente.

L'analyse complète donc l'approche de Giuliano (2007) dans la mesure où la libéralisation des attitudes parentales au cours des dernières décennies a en effet permis aux jeunes d'acquérir plus de liberté tout en restant dans le foyer parental. Cependant, ce changement d'attitudes induit par la révolution sexuelle des années 1970 n'est pas suffisant pour comprendre pourquoi les femmes sont encore plus susceptibles que les hommes à quitter le foyer parental plus tôt. Ce chapitre fournit une explication à cet égard. De même, si Alesina et Giuliano (2010) ont montré que la force des liens familiaux influait sur les choix de cohabitation des individus, l'attachement à la famille n'explique pas l'écart entre les sexes par rapport au degré de cohabitation, d'autant plus que l'on s'attendrait à ce que les femmes soient plus dévouées à leurs familles et donc quittent leurs parents plus tard. À cet égard, cet article montre que les valeurs traditionnelles sur les rôles de genre, reflétées dans le temps consacré par les deux sexes au travail domestique non

rémunéré, sont un déterminant clé pour expliquer l'hétérogénéité entre pays dans les conditions de résidence des jeunes et notamment l'écart observe entre les sexes par rapport à la cohabitation avec les parents.

Ainsi, ce chapitre est également lié à la littérature croissante sur le rôle de la culture et des normes sociales dans la détermination des résultats économiques. Non seulement les sociétés présentent-elles des résultats économiques différents (par exemple, en termes de politiques de redistribution ou de participation politique), mais ont également de différentes normes sociales. En examinant la variation des résultats économiques entre les groupes des descendants d'immigrés vivant dans le même pays, les études reposant sur l'approche épidémiologique ont montré que les différences dans la distribution des normes et croyances sociales influent sur les résultats économiques des sociétés. Ainsi, il a été montré que la participation des femmes au marché du travail (Fernandez, 2007), le taux de fertilité (Fernandez et Fogli, 2009), les institutions du marché travail (Aghion, Algan et Cahuc, 2011) ou même la corruption (Fisman et Miguel, 2007) sont liés à la culture. En outre, l'approche épidémiologique a également été utilisée pour examiner la relation entre les liens familiaux et un large éventail de résultats, tels que la participation à la vie politique, la production domestique, la participation plus faible des femmes au marché du travail et la mobilité (pour une revue de la littérature, voir Alesina et Giuliano, 2014). Un autre volet de la recherche a complété ces analyses en mettant l'accent sur la persistance des traits culturels à travers plusieurs générations de descendants d'immigrés (Borjas, 1992, Giavazzi, 2014).

En mettant en évidence l'écart entre les sexes dans les choix de cohabitation des jeunes avec leurs parents, ce chapitre apporte également des contributions à la littérature sur la relation entre les normes sociales et d'identité de genre d'une part et les résultats économiques des femmes d'autre part. Partant du postulat que les individus se conduisent selon l'identité qu'on leur attribue socialement, Akerlof et Kranton (2000) adaptent leur modèle d'identité de genre à la division du travail entre conjoints. La prise en compte du rôle de l'identité de genre permet de comprendre pourquoi, quand les femmes travaillent plus en dehors de la maison, elles sont toujours responsables d'une grande partie des tâches ménagères. Suivant ce raisonnement, une variété d'autres articles de recherche relie l'identité de genre aux résultats des femmes sur le marché du travail ainsi qu'à leurs options de mariage (Fortin, 2005, Bertrand et al 2015, Bertrand et al., 2017). En même temps, le modèle d'Akerlof et Kranton (2000) permet que des

changements s'opèrent dans les catégories et prescriptions comportementales, entraînant ainsi des changements dans les préférences fondées sur l'identité. Akerlof et Kranton (2000) examinent le rôle du mouvement des femmes aux États-Unis qui a redéfini les rôles de genre, Goldin et Katz (2002) se penchent sur l'effet des innovations dans la contraception sur les changements dans l'identité des femmes tandis que Fortin (2015) met en avant l'impact de la crise du SIDA qui a peut-être déclenché un retour à des normes d'identité de genre plus conservatrices. Dans l'ensemble, si de tels chocs modifient l'identité de genre, alors, conformément à l'analyse de ce chapitre, passer à une société moins conservatrice en termes de rôles de genre permettra également aux femmes de changer leur comportement et de s'émanciper plus rapidement de leur famille ou en termes de leur choix de mariage.

Chapitre 2 – Discrimination à l'invitation à l'entretien et discrimination à l'embauche

Les préjugés et les stéréotypes sont au cœur des théories de la discrimination- discrimination de goût (Becker, 1957) et discrimination statistique (Phelps, 1972, Arrow, 1973). Dans cet article, nous menons une expérience basée sur un testing sur CV et mettons en avant une situation dans laquelle des préférences et des croyances discriminatoires similaires chez des recruteurs appartenant à deux secteurs différents conduisent à des résultats très différents en termes de discrimination au stade de l'invitation à l'entretien: un secteur discrimine les candidats minoritaires, alors que l'autre affiche des taux de rappel similaires pour les deux groupes de candidats. Nous présentons un modèle expliquant pourquoi un tel écart de discrimination entre les deux secteurs peut survenir au stade de l'entretien en l'absence de divergences ex ante dans les stéréotypes et les préjugés. Ce modèle implique que la discrimination au stade de l'invitation est un mauvais prédicteur de la discrimination à l'embauche.

Pour le montrer, nous mettons l'accent sur les taux de rappel de candidats peu qualifiés d'origine française et maghrébine, qui postulent à des offres d'emploi dans le secteur privé ou dans le secteur public. Ces populations ont été sélectionnées parce que les descendants d'immigrés d'origine maghrébine de la deuxième génération sont confrontés à une forte discrimination sur le marché du travail (Cediey et Forony, 2007, Duguet et al., 2010, Algan et al., 2010). Le choix des secteurs public et privé est motivé par des divergences potentielles importantes dans le comportement de recrutement. Contrairement aux recruteurs du secteur privé, les recruteurs du secteur public sont généralement faiblement limités par les exigences de rentabilité. Cette

étude montre que les individus d'origine maghrébine sont fortement discriminés dans le secteur privé, alors qu'ils sont traités de manière similaire aux Français dans le secteur public. Le taux de rappel moyen de nos candidats est particulièrement faible: pour 100 demandes envoyées, ils reçoivent en moyenne 4,5 rappels dans le secteur public et 3,3 rappels dans le secteur privé. Le fait d'être d'origine maghrébine entraîne une baisse significative du taux de rappel lorsque les individus postulent à des offres dans le secteur privé (environ 2 points), mais aucune sanction n'est associée à l'appartenance ethnique dans le secteur public. Il n'y a pas de différence à cet égard entre les offres d'emploi du gouvernement central et les administrations locales, où les procédures de recrutement peuvent être différentes.

Pour comprendre ce qui est à l'origine de cet écart de discrimination entre les deux secteurs, nous menons une enquête sur un échantillon de 1000 recruteurs publics et privés représentatifs de ceux auxquels nos candidatures ont été envoyées. Les résultats de l'enquête indiquent que les employeurs des secteurs public et privé expriment des préférences et des croyances discriminatoires marquées, avec seulement de petites différences non statistiquement significatives entre les deux secteurs. En outre, en utilisant les données de l'Enquête Emploi, nous constatons que les Maghrébins sont aussi sous-représentés parmi les employés du secteur public que parmi ceux du secteur privé, en particulier lorsqu'il s'agit de jeunes peu qualifiés. Ces conclusions sont en contradiction avec l'absence de différences dans les taux de rappel entre les candidats français et maghrébins dans le secteur public.

Afin de concilier ces conclusions empiriques, nous présentons un modèle à deux secteurs illustrant une situation dans laquelle l'absence de discrimination à l'étape de l'entretien n'entraîne pas automatiquement l'absence de discrimination à l'embauche. Dans ce modèle, les employeurs sont plus susceptibles d'inviter des candidats de faible qualité lorsque les rendements attendus des entretiens sont élevés. Cependant, après l'entretien, seulement le meilleur candidat est embauché. Dans la mesure où les entretiens ne permettent pas aux employeurs d'extraire toutes les informations nécessaires sur la productivité des candidats, la sélection finale peut être influencée par de la discrimination statistique. Le modèle montre que même si les candidats minoritaires peuvent être aussi susceptibles d'être invités à des entretiens d'embauche que les candidats majoritaires, leurs chances d'être embauchés après l'entretien peuvent être plus faibles. Dans ce contexte, un secteur qui affiche des différences plus faibles dans les taux de rappel entre candidats de différentes origines peut faire preuve d'une discrimination à l'embauche plus

forte parmi les candidats invités à des entretiens. Cette situation se produit généralement si les recruteurs ont des croyances discriminatoires similaires dans les deux secteurs, mais un secteur à des rendements attendus plus forts de la création d'emplois et des exigences de productivité plus faibles que l'autre. Cette situation est précisément celle découverte par notre enquête auprès des recruteurs qui montre que la productivité de réservation est plus faible dans le secteur public que dans le secteur privé. Par conséquent, l'absence de discrimination à l'entretien dans le secteur public, qui est probablement liée à de faibles exigences de rentabilité, est compatible avec une discrimination importante à l'embauche. Dans l'ensemble, ces résultats remettent en cause la capacité des expériences basées sur des testings sur CV à détecter la discrimination à l'embauche en toute circonstance. Ils suggèrent que les études par correspondance devraient être complétées par d'autres méthodes d'investigation.

Cet article apporte des contributions à trois volets de la littérature sur la discrimination contre les minorités raciales ou ethniques.

Premièrement, des expériences de terrain visant à saisir la discrimination fondée sur l'origine raciale ou ethnique ont déjà été menées dans une grande variété de pays développés et en développement. Ils ont généralement tendance à trouver des différences marquées entre les taux de rappel des groupes minoritaires et des groupes majoritaires (voir OCDE, 2014 ; Bertrand et Duflo, 2016 ; Neumark, 2018,). L'existence de la discrimination au stade l'invitation à l'entretien a été mise en évidence dans différentes aires géographiques (par exemple Amérique du Nord, Amérique latine, Europe et Océanie), mais aussi pour des niveaux différents de compétences et d'éducation, ainsi que pour diverses industries. Il existe aussi quelques études examinant les différences de discrimination ethnique à l'invitation à l'embauche entre le secteur public et le secteur privé. Au Royaume-Uni (Wood et al., 2009) et en Norvège (Midtboen, 2012), des études basées sur des testings sur CV ont montré que la discrimination est moins fréquente dans le secteur public que dans le secteur privé. Nous complétons cette littérature en montrant que la baisse de la discrimination à l'invitation à l'entretien dans le secteur public est compatible avec une discrimination plus forte dans ce secteur suite à l'entretien d'embauche. De plus, nous fournissons des preuves empiriques supplémentaires que la discrimination à l'embauche prévaut probablement dans les deux secteurs. Fougère et Pourget (2004) et Berson (2010) trouvent que les travailleurs issus de l'immigration sont sous-représentés dans le secteur public en France, comme dans le secteur privé. Berson (2016) identifie un écart salarial entre certains groupes

minoritaires (Européens du Sud) et les Français, qui est plus élevé dans le secteur public que dans le secteur privé. Sur la base de l'Enquête Emploi, nous montrons que les Maghrébins sont également sous-représentés dans le nombre de nouvelles embauches dans les secteurs privé et public par rapport aux Français nés en France de parents Français.

Deuxièmement, notre enquête sur les préjugés et les stéréotypes est liée à la littérature sur les valeurs sociales sur le lieu de travail. Lyons et al. (2006) examinent s'il existe des différences sectorielles identifiables dans les attitudes pro-sociales, les valeurs du travail et l'engagement organisationnel parmi un échantillon de travailleurs hautement qualifiés. Ils ne comportent que de petites différences entre les secteurs public, parapublic et privé. De même, Tonin et al. (2015) montrent que les travailleurs du secteur public sont significativement plus pro-sociaux, mais que l'écart s'explique presque entièrement par les différences dans la composition de la main-d'œuvre entre les deux secteurs, en termes d'éducation et de profession. En se basant sur des préférences révélées plutôt qu'auto-déclarées, Buurman et al. (2012) trouvent aucun effet significatif d'appartenance au secteur public sur les comportements altruistes. À notre connaissance, notre enquête est la première à examiner les différences potentielles dans les préférences et les croyances discriminatoires entre les secteurs. Conformément aux recherches antérieures, nous ne détectons aucune différence significative entre les secteurs public et privé.

Troisièmement, nous fournissons un modèle théorique qui met en évidence la relation entre la discrimination à l'invitation à l'entretien et la discrimination à l'embauche. Cette relation est difficile à explorer empiriquement. Bien que les études d'audit soient devenues populaires au début des années 1990 (Cross et al., 1990 ; Turner, Fix et Struyk, 1991 ; Bendick, Jackson et Reinoso, 1994), elles ont rapidement fait l'objet de critiques sérieuses. Premièrement, des différences qui sont potentiellement essentielles pour les recruteurs subsistent inévitablement entre les « candidats ». Deuxièmement, les « candidats » connaissent évidemment le but de l'étude dont ils font partie. Cela peut les conduire à se comporter consciemment ou inconsciemment de manière cohérente ou incohérente avec leurs croyances sur la façon dont les différents groupes sont traités. Troisièmement, les études d'audit sont extrêmement coûteuses, ce qui empêche les chercheurs de générer des échantillons importants (Bertrand et Mullainathan, 2004). Suivant une approche différente, Bartos et al. (2016) montrent que la discrimination à l'invitation à l'entretien est influencée par les croyances des recruteurs mais aussi par la nature des marchés. Lorsque l'acquisition d'informations à partir des CV est coûteuse, l'attention n'est pas également

répartie entre les candidats. La discrimination d'attention implique moins d'attention envers le groupe avec les attributs moins favorables dans les marchés nommés « de la cerise » (c'est-à-dire très sélectifs, comme le marché du travail) qu'avec les marchés nommés « du citron » (faiblement sélectifs, comme le marché du logement) pour une croyance donnée des recruteurs. Dans ce contexte, une discrimination dans la sélection des candidats peut survenir même si les convictions des recruteurs sont les mêmes. Nous complétons cette approche en fournissant un modèle du processus de recrutement qui montre que les comportements discriminatoires à l'invitation et à l'embauche peuvent être très différents: il est possible que les individus du groupe qui bénéficient de plus grandes chances d'être invités pour un entretien ont également de plus faibles chances d'être embauchés après cet entretien.

Chapitre 3 – La difficile transition des jeunes décrocheurs sur le marché du travail : Résultats d'une expérience de terrain

Le chômage et l'inactivité des jeunes constituent un problème récurrent et persistant dans de nombreux pays avec un désavantage systématique et croissant parmi les jeunes non qualifiés. Dans l'OCDE, la part des jeunes entre 15 et 29 ans ni en emploi, ni en éducation, ni en formation (NEET) était en moyenne de 15% en 2015. Les décrocheurs du secondaire sont surreprésentés: ils représentent un tiers des jeunes NEET. Ce désavantage a tendance à être très persistant. La plupart des NEET demeurent en dehors de l'emploi pendant de longues périodes avec des conséquences durables sur leurs parcours professionnels (OCDE, 2016). Au cours des trente dernières années, de nombreux programmes ont été mis en place pour les jeunes défavorisés: aide intensive à la recherche d'emploi, crédits d'embauche dans le secteur privé, emplois dans le secteur public et formation intensive. En France, l'emploi subventionné dans le secteur non-marchand représente un important levier de la politique de l'emploi. Le dernier programme de ce type pour les jeunes les plus éloignés du marché du travail a été lancé en 2012, créant 150 000 emplois d'avenir dans le secteur non-marchand pour aider à améliorer les perspectives d'emploi des jeunes peu qualifiés. Pourtant, malgré les coûts substantiels de finances publiques associés à la mise en œuvre de ces mesures, peu est connu sur l'efficacité des interventions spécifiques visant à faciliter les transitions sur le marché du travail des jeunes peu qualifiés.

Cet article évalue l'efficacité des programmes pour les jeunes chômeurs en mesurant les chances d'obtenir un rappel des employeurs pour les décrocheurs qui se distinguent par leurs

trajectoires sur le marché du travail. La méthode consiste à envoyer des CV fictifs de jeunes gens qui, au cours d'une période de trois ans suivant leur sortie de l'école secondaire, ont été sans emploi, ou sans emploi mais avec une expérience de travail temporaire, ou employé de façon continue avec des contrats non-subventionnés ou subventionnés, dans le secteur marchand ou non-marchand, avec ou sans certification des compétences acquises. Dans tous les cas, les jeunes candidats n'ont pas terminé leurs études secondaires et n'ont jamais poursuivi leurs études avant d'entrer sur le marché du travail.

Nous avons envoyé 5 388 candidatures sur une période de 6 mois en 2016, en France pour des postes de réceptionniste et de jardinier. Cette stratégie garantit que les CV peuvent varier seulement sur la base d'une seule dimension, ce qui sert à identifier les effets des différentes expériences sur le marché du travail sur la probabilité de rappel par les employeurs. Par exemple, dans notre étude, les CV des individus qui ont eu un emploi subventionné sont identiques à tous égards à ceux qui occupaient un emploi non-subventionné. Étant donné que certaines expériences professionnelles, autrement identiques, sont subventionnées alors que d'autres ne le sont pas - ce qui est précisé dans le CV en mentionnant le nom du programme phare du gouvernement français en matière de contrats aidés « Emploi d'avenir » - tout effet de stigmatisation significatif lié à la subvention des contrats peut ainsi être identifié. Il en va de même pour l'effet d'une expérience dans le secteur marchand ou non-marchand et aussi pour l'effet de la certification des compétences.

Nos résultats montrent que peu d'interventions peuvent vraiment faire la différence et augmenter la probabilité d'être contacté par les employeurs. A défaut de formation accompagnée d'une certification de compétences, les périodes d'emploi, qu'elles soient subventionnées ou pas, dans le secteur marchand ou non-marchand, n'ont aucun impact sur le taux de rappel des jeunes peu qualifiés par rapport à des jeunes restés au chômage. Les jeunes les plus éloignés du marché du travail en France ont un faible taux de rappel en réponse à leurs candidatures - environ 8%. L'expérience professionnelle, que ce soit dans le secteur marchand ou non-marchand, ne semble pas augmenter ce taux. Tant que l'expérience professionnelle n'est associée à une formation certifiante, les employeurs sont toujours insensibles aux périodes d'emploi, quelle que soit la situation sur le marché du travail local. Cependant, l'expérience professionnelle est associée à une formation certifiante, les taux de rappel sont sensiblement augmentés même si la certification correspond seulement au niveau le plus bas de certification disponible en France

(titre professionnel). Obtenir ce titre professionnel mène à une augmentation considérable du taux de rappel des jeunes peu qualifiés. Les conditions du marché du travail ont également un impact significatif: l'effet de la formation certifiante diminue rapidement avec le taux de chômage local.

Comme toute expérience basée sur l'envoi des CV fictifs, nos résultats ne peuvent pas saisir toutes les conséquences des expériences professionnelles. En particulier, nous ne prenons pas en compte les avantages des contacts en milieu de travail avec les employeurs et les collègues, ainsi que des recommandations directes, qui peuvent aider les demandeurs d'emploi à orienter leur recherche de manière plus efficace. Dans notre étude, les CV sont envoyés de manière aléatoire aux employeurs qui postent des offres.

Notre analyse apporte des contributions à la littérature des expériences de terrain dans le domaine du marché du travail et plus particulièrement aux études basées sur des méthodes de testing sur CV visant à examiner l'effet de l'expérience sur le marché du travail sur la probabilité d'être rappelé par des employeurs. Cette approche trouve que l'expérience de travail suivant le chômage élimine tout effet négatif potentiel associé aux épisodes de chômage de long terme dans le passé (Eriksson et Rooth, 2014). Mais les effets des épisodes de chômage contemporains sont différents. Si les épisodes courts ne sont pas interprétés négativement par les employeurs, les épisodes longs ont un impact négatif sur les taux de rappel (Eriksson et Rooth, 2014 ; L'Horty et al., 2016). Randomiser des CV sur la base d'épisodes de chômage de longueur différente révèle que le taux de rappel diminue significativement avec la durée de la période de chômage actuelle pour les jeunes âgés de moins de 30 ans et qui ont fait des études supérieures (Kroft et al., 2013, Gayad, 2013). Cependant, Farber et al. (2016) ne trouvent aucune relation entre le taux de rappel et la durée du chômage pour les femmes plus âgées aux Etats-Unis. Ces expériences couvrent différents types d'emplois, types de travailleurs, périodes, pays et régions. Il est ainsi difficile de savoir quelle combinaison de ces facteurs explique les différences dans les résultats. Notre étude apporte de nouvelles informations en étudiant le cas des jeunes peu qualifiés avec des expériences de travail dans des marchés à taux de chômage élevé. Pour les jeunes individus peu qualifiés de notre expérience, nous ne trouvons aucun effet négatif de l'expérience de chômage passée sur la probabilité d'être rappelé pour un entretien. Certaines expériences ont également évalué l'impact de la qualité de l'expérience de travail. Par exemple, le fait d'avoir eu des emplois temporaires peut avoir un effet négatif l'incidence du rappel, impliquant que pour les

travailleurs sans emploi il vaut mieux rester chômeur plutôt que de faire des compromis sur la qualité de l'emploi (Farber et al., 2016). Notre étude révèle que les périodes d'emploi sous contrat à durée déterminée n'améliorent pas les chances d'être rappelés pour les jeunes peu qualifiés. Ils montrent également que l'expérience professionnelle accompagnée d'une formation certifiante améliore considérablement le taux de rappel lorsque le taux de chômage local est faible, mais n'a pas d'effet lorsque le taux de chômage local est élevé.

Ce chapitre est également lié à la littérature sur l'impact des politiques actives du marché du travail et plus spécifiquement, des programmes de création d'emplois et de formation. Dans une étude influente, Heckman et al. (1999) examinent les enseignements tirés des évaluations de politiques publiques aux États-Unis et en Europe sur l'efficacité des politiques de formation, de recherche d'emploi et de subvention de l'emploi. Ils concluent que les programmes d'emplois centrés sur le secteur public (ou non-marchand) ne donnent que de faibles résultats par rapport à d'autres interventions, une constatation également confirmée par Kluve et Schmid (2002). Dans une étude des politiques d'activation suédoises dans les années 1990, Sianesi (2002) montrent qu'il n'y a aucune preuve d'effets des emplois publics temporaires sur la probabilité d'emploi ultérieure des bénéficiaires de ces programmes. De même, Hujer et al. (2004) examinent l'effet des programmes de création d'emplois, principalement dans le secteur public, en Allemagne et montrent que deux ans après le début des programmes, les participants à ces programmes ont des taux de réussite plus faibles sur le marché du travail que les non-participants. Plus récemment et s'appuyant sur des méthodes de méta-analyse, Card et al. (2010, 2015) montrent que les créations d'emplois dans le secteur public sont moins efficaces que d'autres mesures. Ils montrent que si les programmes de formation et d'emploi du secteur privé ont des effets significatifs à moyen et long terme malgré un effet mineur dans l'emploi à court terme, les subventions à l'emploi dans le secteur public semblent inefficaces quel que soit l'horizon temporel envisagé pour leur évaluation. En analysant plus de 100 études, Kluve et al. (2016) trouvent que les programmes pour les jeunes qui intègrent plusieurs types d'interventions ont le plus de chances de réussir. Cependant, ils ne trouvent aucun impact significatif des programmes axés uniquement sur les activités de recherche d'emploi ou sur les subventions à l'emploi, par opposition aux programmes d'entrepreneuriat et de formation professionnelle qui ont des effets plus importants. Notre expérience révèle que les emplois subventionnés, qu'ils soient dans le secteur public ou dans le secteur privé, sont dépourvus d'effets sur le taux de rappel par les

employeurs des jeunes peu qualifiés dans le contexte français, caractérisé par un fort taux de chômage des jeunes. Ce type d'expérience professionnelle a seulement un impact lorsqu'elle est accompagnée d'une formation certifiante. D'ailleurs, la certifiante a un effet plus fort sur le taux de rappel lorsqu'elle est associée à une expérience professionnelle dans le secteur non-marchand plutôt qu'à des emplois dans le secteur marchand, ce qui suggère que les employeurs accordent plus de crédibilité à la formation réalisée dans le cadre d'un emploi dans le secteur non-marchand.

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Chapter 1

Womanhouse : Social norms and gender gaps in youth co-residence choices

Abstract

This chapter proposes a novel interpretation of the cross-country variation in the share of youth living with their parents by emphasizing not only that culture is key in understanding this heterogeneity but also that men are the main drivers of the observed co-residence patterns for youth. In cultures with traditional values about gender roles, young men have more incentives to continue living in the parental household since, unlike women, they benefit both from the advantages of being taken care of with a minimal contribution to housework and from the freedom to lead their private life as they desire given the liberalization of parental attitudes. This chapter shows that the living arrangements of young male immigrants in the US replicate those of young men in their countries of origin whereas no similar pattern can be observed for women. Young men's probability to remain in the parental household is positively related to their limited involvement in housework, resulting in a different trade-off between living with parents and moving out for the two genders. These results suggest that young women would actually prefer living by themselves but due to institutional or social factors in their countries of origin, they cannot do so and remain longer in the parental household. However, in an institutional and societal environment that facilitates their emancipation, women from conservative cultures regarding gender roles leave much faster the parental household in comparison to men and marry more frequently outside of their own ethnicity.

1.1 Introduction

The term *Mammoni* or *mamma's boys* designates single men in Italy who still live with their mother. In 2014, 71,8% of Italian men aged 18 to 34 years old were still *mammoni* and shared

the household with their parents according to Eurostat. But Italy is not the only country to have such high shares of dependent male youth. In Europe, in 2014, Italians were actually surpassed by Romanians, Slovaks and Croatians who led the top with 78,3% of young men still living with their mother and father. Such largely delayed moving-out decisions have strong implications in terms of labour market precariousness, marriage postponement and fertility choices as well as exposure to a variety of economic shocks (Bitler and Hoynes, 2015, Carcillo et al., 2015; etc.).

This paper focuses on the gender gap in youth co-residence choices. It shows that the cross-country variation in the share of youth living with their parents is driven by cultural norms and that this cultural effect transits through the behavior of young men thanks to traditional values about gender roles. In societies with more conservative values about gender roles, young women are required to devote a substantial amount of their time to housework and caring for other household members. On the contrary, in such cultures, men are expected to bring only minimal contributions to such tasks which remain the job of women. They can benefit therefore both from the advantages of ever more liberal parental attitudes as from the most classical advantages of living with parents such as being taken care of, cooked for and maybe even given financial support. In different words, traditional values about gender roles are favorable to men, since their mothers and/or sisters do the bulk of household chores for them when they remain at home, whereas they are detrimental to women. This implies that in societies characterized by such values, men leave the parental household at older ages than women.

The traditional explanations provided by the literature for the cross-country patterns in youth home-leaving have focused mostly on macro-economic and institutional determinants. Thus, housing, labor market or income-related conditions have been put forward in order to explain part of the heterogeneity in youth living arrangements across countries (Martinez-Granado and Ruiz- Castillo, 2002, Giannelli and Monfardini, 2003- for housing; Becker et al., 2010, Kaplan, 2012, - for the impact of job insecurity and labour market risks; Lee and Painter, 2013 for the role of economic shocks on household formation, etc.). In contrast to these conventional approaches, the cultural economics literature has emphasized the potential role of individuals' culture of origin in explaining the residential choices of youth in European countries. Giuliano (2007) put forward the role of the 1970s sexual revolution, through its impact on parents' attitudes towards their young children's freedoms, as an explanation for the existing differences in youth living

arrangements between European countries. In the same vein, Alesina and Giuliano (2010) have shown that societies which exhibit strong family ties, such as Mediterranean ones, are also those where individuals are more numerous to live with their parents.

This paper brings into focus the gender gap in youth co-residence patterns, emphasizing the importance of gender roles in understanding the living arrangement decisions of young people. In order to assess the cultural interpretation of gender differences in youth co-residence patterns, it examines the behavior of immigrant men and women in the US. This allows isolating the cultural effect thanks to the study of individuals who share the same economic and institutional environment (Fernandez, 2011; Bisin and Verdier, 2011). This paper thus captures the vertical transmission of cultural values (Bisin, Verdier, 2011), the type of transmission most likely to occur for values related to family and co-residence choices given that such values are instilled into children mainly by their parents. The estimation of the cultural component of youth co-residence patterns is based on Current Population Survey data, which allows identifying around 70 home countries of immigrants to the US.

Results show that the behavior of young immigrant men reproduces that of male youth in their countries of origin when it comes to the preference for living in the parental household, whereas no statistically significant correlation is observed for women. Among European descendants, young Southern European men are the most likely to live in the parental household in comparison to Northern Europeans, followed by Eastern Europeans and Western Europeans, a pattern that mimics the current ranking of European countries in terms of the share of male youth who live in the parental household. These higher propensities to live with parents of young male immigrants of some origins in comparison to others do not appear to be due to their lower labor market performance or to economic shocks such as the recent recession.

Moreover, using data from the American Time Use Survey on the amount of time devoted to unpaid work within the household, this paper shows that young male immigrants who remain longer in the parental household are also those who spend less time in household-related activities. Thus, for men coming from societies with more conservative attitudes on gender roles, the lower participation in household chores is likely to represent an incentive to delay their home-evidence. If men from such cultures have more incentives than women to remain in the parental household, women will be more inclined to deviate from their culturally pre-established role when moving to a more liberal environment. Using American Community Survey data, I

provide evidence that in the US, first-generation immigrant women from cultures with more traditional gender roles values are also more likely to marry outside of their ethnicity. Thus, not only do women from such cultures leave the parental household faster, but they also seek to minimize the risk of replicating the housewife role they would have had in their society of origin. Conservative values about gender roles shape therefore different trade-offs for men and women, expressed through the living arrangement and marriage choices of first and second-generation immigrants in the US.

The analysis complements therefore the approach of Giuliano (2007) to the extent that the liberalization of parental attitudes in the last decades has indeed enabled young individuals to acquire more freedom while remaining in the parental household. However, the sexual revolution argument is not sufficient to understand why women are still more likely than men to leave the parental household earlier. This paper provides an explanation in this respect. Similarly, if Alesina and Giuliano (2010) showed that the strength of family ties mattered for individuals' co-residence choices, the attachment to ones' family fails to explain gender differences in living arrangements especially as one would expect women to be more devoted to their families. In this respect, this paper shows that it is traditional values about gender roles, reflected in the amount of time devoted by the two genders to household unpaid work, that are a key determinant of the cross-country heterogeneity in youth living arrangements and of the observed gender gap in youth co-residence choices.

Thus, this paper is also related to the growing literature on the role of culture and social attitudes in determining economic outcomes. Not only do societies exhibit different economic outcomes (for instance, in terms of policies for redistribution or political participation), but they also display different social beliefs. Examining the variation in economic outcomes between immigrant groups living in the same country, studies relying on the "epidemiological approach" have brought evidence regarding the effect of differences in the distribution of social beliefs on societies' economic outcomes. Culture has been shown to have an effect on women's work decisions (Fernandez, 2007) and fertility (Fernandez and Fogli, 2009), labor market institutions (Aghion, Algan and Cahuc, 2011) or even corruption (Fisman and Miguel, 2007). Furthermore, the "epidemiological approach" has also been used to look at the link between family ties and a wide array of outcomes, such as political participation/ interest in politics, home production, lower labour force participation of women and lower geographical mobility (for an extensive

review, see Alesina and Giuliano, 2014). An additional strand of research has complemented these findings by focusing on the persistence of cultural traits across several generations of immigrants (Borjas, 1992; Giavazzi, 2014).

Through its focus on the gender gap in co-residence choices, this paper brings contributions to the literature on the relationship between social and gender identity norms on the one hand and women’s outcomes on the other hand. Departing from the proposition that individuals behave according to the identity that is expected from them, Akerlof and Kranton (2000) adapt their model of gender identity to the household division of labor between spouses. Accounting for the role of gender identity allows understanding why when women works more outside the home, they are still responsible for a large proportion of housework. Following this rationale, a variety of other paper relate gender identity with women’s labour market outcomes and marriage patterns (Fortin, 2005; Bertrand et al. 2015; Bertrand et al., 2017) At the same time, the model of Akerlof and Kranton (2000) allows for changes in social categories and behavioral prescriptions, resulting in changes in identity-based preferences. Akerlof and Kranton (2000) examine the role of the women movement in the US in diminishing women’s gains from housework, Goldin and Katz (2002) look at the effect of innovations in contraception on changes in women’s identity while Fortin (2015) puts forward the impact of the AIDS crisis that may have triggered a return to more conservative gender identity norms. All in all, if such shocks altered gender identity, then, in line with the analysis of this paper, moving to a less conservative society in terms of gender roles will equally enable women to change their behavior and emancipate faster from their family or in terms of their marriage choices.

This paper is organized as follows. Section 2 presents some cross-country evidence on the gender gap in youth co-residence choices. Section 3 proposes a conceptual framework for the empirical analysis. The cultural effect on youth’s living arrangements is estimated in Section 4, which equally includes robustness checks regarding the role of business shocks and of labour market participation of youth. The relationship between co-residence, housework and marriage choices is analyzed in Section 5. Section 6 concludes.

1.2 Cross-country evidence

Figure 1.1 provides a cross-country perspective on the gender gap in youth co-residence choices. In a vast majority of countries from the sample, living with parents is more frequent among

young men than among young women. For some countries, such as Egypt, Jordan (right-hand upper side of the figure) but also Norway or UK (left-hand lower side of the figure), the share of men living in the parental household is twice as large as the equivalent share among young women.

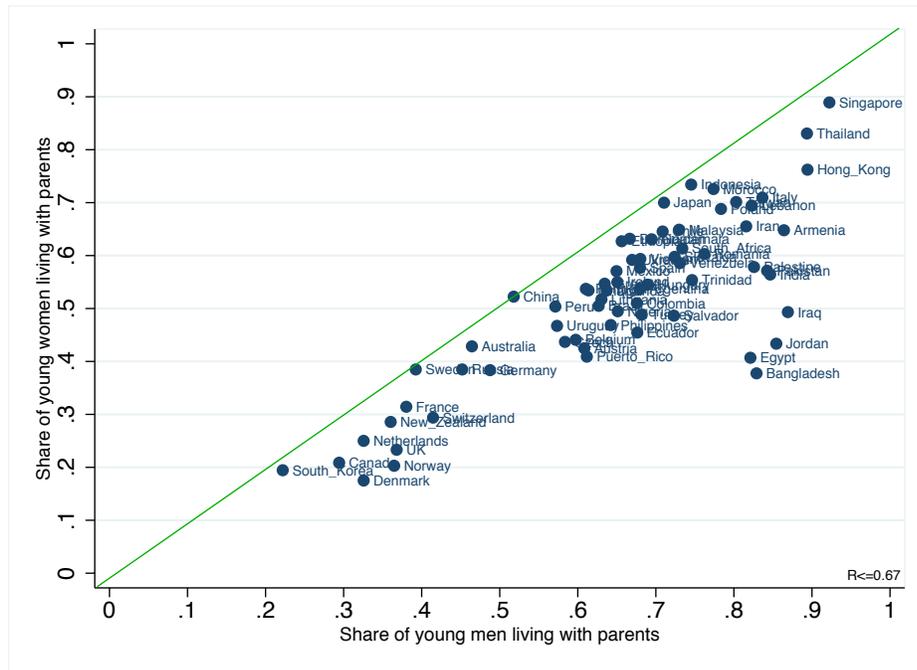


Figure 1.1: Gap in co-residence choices by gender
Source: World Values Survey (1989-2014).

Note: Shares are calculated among youth of a specific gender. The share of young men living with parents is defined as the share of men living with parents among young men. The share of young women living with parents is defined as the share of women living with parents among young women.

The main hypothesis motivating this paper is that the gender gap in the cross-country variation in living arrangements of youth is not merely a demographic effect of young men entering marriage or finishing education later than women, but also a manifestation of the social norms related to gender roles inherited by individuals in a given society. In cultures with more conservative values about gender roles, young men should be favored to the extent that less is expected from them in terms of household work relative to young women and hence, they have more incentives to remain in the parental household. In order to examine this hypothesis, Figure 1.2 displays the correlation between an indicator of conservative attitudes about gender roles and the share of young men and women living with parents. The following three variables are

used to build the indicator of traditional gender values in the country of origin of immigrants:

1. "People talk about the changing roles of men and women today. For each of the following statements I read out, can you tell me how much you agree with each: Being a housewife is just as fulfilling as working for pay."
2. "People talk about the changing roles of men and women today. For each of the following statements I read out, can you tell me how much you agree with each: A working mother can establish just as warm and secure a relationship with her children as a mother who does not work."
3. "Do you agree or disagree with the following statements? When jobs are scarce, men have more right to a job than women"

Figure 1.2 shows that young men who hold more conservative social norms about gender are also those who stay longer in the parental household, while no significant relationship can be observed for young women. Social norms about gender roles seem to be reflected only in the behavior of young men, while the correlation is significantly weaker with the co-residence choices of women.

Table 1.1 brings evidence that this relationship between the gender gap in living arrangements and conservative attitudes about gender roles is robust to a variety of controls. Men with more traditional gender roles values are more susceptible to live in the parental household and this holds when education level, labor market status or macroeconomic conditions are controlled for. In a similar vein to Bertrand et al. (2017), in columns 3 and 4 of Table 1.1, values about gender roles are grouped by tertile, and the behavior of young men coming from the top and medium tertiles are compared to those who express the least conservative values about gender roles. Young men who exhibit very traditional values (top tertile) appear to be most inclined to stay longer in the parental household, while the effect is lower but still positive and significant for male with more moderate views on the distribution of gender roles. All in all, there is a statistically significant positive effect of being a young man with traditional views on gender roles on the probability to remain living with ones parents.

An alternative set of social norms that may drive the cross-country variation in living arrangements of individuals is represented by the strength of family ties. Also relying on WVS

Table 1.1: Correlation between the Gender Gap in Youth Co-residence choices, Conservative Attitudes about Gender Roles and the Strength of Family Ties

	(1)	(2)	(3)	(4)
	Coeff./SE	Coeff./SE	Coeff./SE	Coeff./SE
Male with more trad. gender values	0.016*** (0.00)		0.016*** (0.00)	0.016*** (0.00)
More trad. gender values	0.000 (0.00)		-0.000 (0.00)	-0.000 (0.00)
Male with very trad. gender values (top tertile)		0.089*** (0.02)		
Male with trad. gender values (medium tertile)		0.067*** (0.02)		
Very trad. values about gender roles (high tertile)		-0.021 (0.02)		
Trad. values about gender roles (medium tertile)		-0.018 (0.01)		
Strong family ties			0.009 (0.01)	0.006 (0.01)
Men with strong family ties values				0.006 (0.01)
Male	-0.044 (0.03)		-0.045* (0.03)	-0.102* (0.06)
Individual controls	Yes	Yes	Yes	Yes
Macroeconomic controls	Yes	Yes	Yes	Yes
Constant	1.359*** (0.17)	1.384*** (0.17)	1.267*** (0.18)	1.295*** (0.19)
R-sqr	0.274	0.273	0.273	0.273
N	30,870	30,870	29,653	29,653

Note: Regressions are run on the youth population aged 15-29 years old. The high (medium) tertile dummy of traditional gender values refers to the top (medium) tertile of individual values in terms of conservativeness of gender roles. Individual-level controls include the education level, the labor market status, the marriage status as well as the presence of own children in the household. Macroeconomic-level controls include the average years of schooling of the total population over 25 and the natural logarithm of GNP per capita in 1997 expressed in current US dollars (Botero et al., 2004). All regressions control for year fixed effects. Robust standard errors are clustered at the country of origin level. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Source: World Values Survey (1994-2014).

values about gender roles remains unchanged when the strength of family ties is controlled for. Attachment to one's family does not appear to be the explanation behind the observed gender gap in youth co-residence choices. On the contrary, previous studies that examined the relationship between living with parents and strength of family ties were most likely capturing the effect of conservative values about gender roles in the measurement of the role plaid by family ties.

1.3 Conceptual framework

This section reports the main results of a model (presented in the Appendix) of young men and women's different trade-off between living with parents or living outside of the family home based on whether they come from a country with more traditional values about gender roles or not. Built in the line of the model proposed by Bentolila et al. (2014) who look at moving out decisions to leave with a partner, the section's purpose is purely to orient the empirical analysis unfolded in the following sections.

Both male and female youth want to maximize the utility derived from their residence status. An individual's utility depends on the time devoted to household chores by other members of the household, which increases the amount of time the individual has for his own leisure. I assume that other members of the household perform more housework for young men than for young women. Put differently, young women are responsible for more unpaid housework than young men.²

The higher the individuals' taste for privacy, the more household chores should be provided for him in order to make him want to live with his parents. Belonging to a society with traditional values about gender roles results in a different trade-off for men and women between living with parents or not: conservative values about gender roles influence the gap between the amount of housework provided for youth within the parental household and the amount of housework provided for them when moving out. Such values are more favorable to men, who will benefit from a higher amount of housework done for them than woman would.

I show that there is a much stronger difference between men living in societies with conservative values and those living in more liberal societies when it comes to the moving out

²This is consistent with other empirical analyses that look at the gender divide in unpaid work across a variety of countries (e.g. Miranda, 2011 for OECD countries; UNRSID, 2010 for developing countries).

decision based on housework time, than there is for their female counterparts. Women always benefit from relatively fewer assistance for housework, irrespective of the type of society or living arrangement they are in. On the contrary, for men, conservative values about gender roles increase the amount of housework done by parents on their behalf and hence, in absence of pressure or desire to get married, they will have higher incentives to remain living in the parental household.

The validity of this difference in trade-offs can be examined for the two moving-out decisions:

1. *Living alone vs living with parents.*

When they move to live alone (or with flatmates), youth (men and women) perform the same amount of housework whether they live in a society with traditional values or not. However, if they stay with parents, the gap between the amount of housework provided for men and that for women by their parents is much stronger in societies with traditional values about gender roles than in societies with less traditional values. This implies that in societies with traditional values about gender roles, men will have higher incentives to stay longer in the parental house than women given the relatively lower amount of housework they are expected to perform there.

2. *Living with a partner vs living with parents.*

In societies with less conservative values about gender roles, parents are less likely to discriminate between their male and female children. Therefore, there is only a narrow gap between the amount of housework parents will provide for men and what they provide for women. At the same time, when youth live with partners, although male partners are expected to share tasks more with their female companion, they will still perform less housework than women will. Hence, less support will be provided for women than for men by their respective partner.

In societies with more traditional values about gender roles, even when they live with their parents, women are still expected to contribute to housework in a much more significant way than men. Therefore, whether they live within the household or with a partner, the amount of housework they do is similar.³ In such societies, for men, it is also

³The amount of housework done by women is perhaps slightly smaller when they live with a partner because the partner is expected to make at least a minor contribution to household tasks. Conversely, when men live

equivalent to live with parents or with a partner to the extent that in both situations they will benefit from a significant amount of housework provided for them.

Thus, for both for men and women, living with a partner or with parents results in a similar amount of housework provided for them. However, this is a small amount for women whereas it is a significant one for men.

Contrasting with the situation of those coming from cultures with less traditional values about gender roles, this means that different trade-offs emerge for men and women in their moving-out decisions:

1. Women in both societies benefit contribute to housework in a significant way. Combined with the preference for privacy, women are likely to avoid delaying their moving-out decision. In societies with less conservative values about gender roles, they will either move to live alone or with a partner if they seek marriage. In societies with traditional values about gender roles, they might prefer living alone but if this is not possible due to society's conservative views or other institutional factors, they will move out to live with their partner. Even if moving out with a partner means that women will still perform a significant amount of housework since they "replace" their spouse's mother in the household, they will nevertheless be in their own household which satisfies better their preference for privacy.⁴ In any case, the preference for privacy combined with the similar amount of housework they have to perform irrespective of where they live, will increase the incentives of women to move out.
2. Men in both types of societies benefit from relatively more housework support. However, men in societies with conservative values about gender roles benefit from a substantially higher amount of housework help from their parents than men in societies with less conservative values. This, in turn, is likely to increase their likelihood to delay their moving-out decisions. Unless men from cultures with traditional values actually want to

with a partner, they might be expected to bring slightly more contributions to household tasks than when living with parents. However, such contributions remain minor.

⁴This is consistent with research showing that women are more likely to marry earlier than men (Browning et al., 2014) and more specifically, that in European countries, among youth living outside of the family home, women are more likely to be married than men especially when they come from Mediterranean countries (Eurostat, 2008).

get married and form a different household, they will feel less pressure than men from societies with less traditional values to leave the parental household.

Thus, traditional values about gender roles act as an amplifier for the the gender gap in the distribution of tasks within the household and thus lead to delayed moving-out decisions for men. The following implications are therefore derived from the model:

Implication 1: When women from cultures with traditional values about gender roles live in a more liberal society, they will move out faster. On the contrary, men will continue living in the parent household.

Implication 2: For young men, the decision to move out is related to the amount of housework performed for them. This is not the case for young women who are expected anyway to contribute more than men to household tasks.

Implication 3: When women from traditional cultures move to a more liberal society and decide to marry, they have incentives to choose a partner outside of their own culture so as to minimize the risk of "replacing" their spouse's mother in household.

The following sections examine empirically the implications of the conceptual framework.

1.4 Evidence from US immigrants

1.4.1 Gender gap in co-residence choices of US immigrants

Figure 1.3 presents the living arrangement patterns of young second generation immigrant men and women from mostly European countries. For the remainder of the paper, all countries of origin for which second-generation immigrants could be identified - in total 69 countries - are considered.⁵

On average, fewer young second-generation immigrant women live with their parents (55%) than young men (62%), a pattern that replicates the behavior observed in individuals' countries of origin (figure 1.1). However, while in the home countries women were significantly more numerous to be married than men⁶, the marriage rates of young second-generation immigrant

⁵A similar figure with the living arrangements of youth of these origins is available in the Appendix (figure 1.8).

⁶Statistics for home countries are calculated using the 2008 wave of the World Values Survey which provides more detailed data on household structure than the other rounds. Data in the 2008 round was available for mostly European countries, hence the focus of Figure 1.3 on this specific subset.

men and women in the US are much more similar⁷. These first descriptive statistics suggest that while second-generation immigrant men in the US replicate the household arrangements behavior observed in their home countries, women are more susceptible of taking advantage of a more favorable environment to their emancipation.

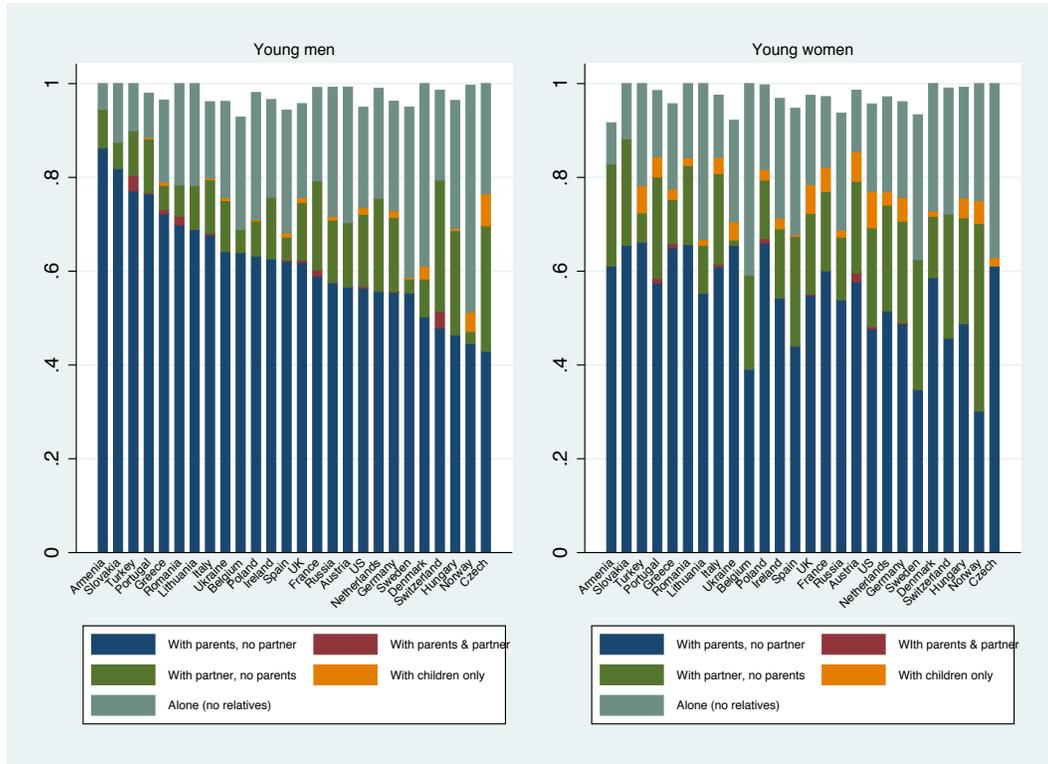


Figure 1.3: Living arrangements of second generation immigrant youth, by gender (US)
Source: Current Population Survey (1994-2014).

Note: Shares are calculated on the youth population of each gender. Living alone (no relatives) is defined as living either alone or with other individuals who are not family members.

In order to examine whether living with parents reflects a cultural choice for men and not for women, I use data from the March Supplement of the Current Populations Survey (CPS) covering the 1994-2014 period. The CPS includes survey items about the country of birth of parents, allowing the identification of second-generation immigrants.⁸ The CPS provides

⁷The share of married young immigrant men is at 12% vs 18% for women, in comparison to 19% for men and 31% for women in the home countries. The shares of youth leaving with no relatives are similar for immigrant men and women, and higher than in the home countries for both genders (23% vs 15% for men; 22% vs 11%).

⁸Second-generation immigrants are defined by looking primarily at the country of origin of the father; in cases where the country of origin of the father is missing or where the father is native whereas the mother is foreign-born, the country of origin of the mother is used.

information on whether the individual lives with his parents and covers most countries that are included in the World Values Survey (WVS), from which the descriptive statistics in Section 1 were computed.

In order to estimate the likelihood of youth from different origins to live with their parents, the following linear probability model is run on the population of young second-generation immigrant men and women (15-29 years old):

$$P_{ist} = \alpha_0 + \alpha_1 O_{ist} + \alpha_4 X_{ist} + F_t + F_s + \varepsilon_{ist} \quad (1.1)$$

where P_{ist} is a dummy equal to 1 if individual i in state s at time t living with parents. O_{ist} is a dummy for the country of origin of the individual; α_1 is therefore the coefficient of interest allowing to identify the effect of being an immigrant from a given country of origin on the probability to live in the parental household for young people. It thus encapsulates the inherited part of co-residence preferences transmitted from the country of origin and carried with them by immigrants in their new host country. The regressions control for a series of individual characteristics like education, labor market status, marriage status, presence of children in the household or per capita family income (X_{ist}), as well as for time (F_t) and state (F_s) fixed effects.

Table 1.2 reports OLS estimates of the probability for young men and women of different origins to live with their parents or in different terms, the country of origin fixed effects. The reference country of origin is Norway and standard errors are clustered at the country of origin level. In addition to the country of origin dummies, I control for a series of individuals characteristics (education level, labor market status, income level, etc.). Aside from the coefficient for young women with Swiss origins that is significant only at the 10% level, all other coefficients are statistically significant at the 1% level. The probit estimates of equation 1 yield similar results.

Panel A of figure 1.4 displays the country of origin fixed effects for young immigrant men and women's co-residence choices in the US from table 1.2, illustrating both the variation in cultural patterns regarding living arrangements of youth from different origins in the US and most importantly the systematic gender gap in co-residence shares relative to Norwegians.⁹ With the exception of Palestinian, New Zealander and Danish descendants, young men of all origins

⁹As a robustness check for the difference between young men and women's co-residence choices, I also run a model including an interaction between gender and the country of origin, which enables me to examine in the same estimation the difference between young men and women of given origins with respect to their probability

Table 1.2: Youth residential emancipation for youth of different origins (US)

	(1)		(2)	
	Men (US)		Women (US)	
	Coeff.	SE	Coeff.	SE
Argentina	0.199***	(0.01)	0.070***	(0.01)
Armenia	0.294***	(0.01)	0.123***	(0.02)
Australia	0.181***	(0.01)	0.023***	(0.00)
Austria	0.124***	(0.01)	0.117***	(0.01)
Bangladesh	0.217***	(0.02)	0.157***	(0.02)
Belgium	0.130***	(0.02)	-0.078***	(0.02)
Brazil	0.281***	(0.01)	0.093***	(0.01)
Canada	0.198***	(0.01)	0.084***	(0.01)
Chile	0.188***	(0.02)	0.070***	(0.01)
China	0.225***	(0.02)	0.163***	(0.01)
Colombia	0.233***	(0.02)	0.140***	(0.01)
Czech	0.126***	(0.01)	0.027***	(0.01)
Denmark	0.041***	(0.01)	0.080***	(0.01)
Dominican	0.209***	(0.03)	0.112***	(0.02)
Ecuador	0.221***	(0.02)	0.185***	(0.01)
Egypt	0.211***	(0.01)	0.130***	(0.01)
Ethiopia	0.175***	(0.02)	0.161***	(0.01)
France	0.208***	(0.01)	0.156***	(0.01)
Germany	0.135***	(0.01)	0.067***	(0.01)
Ghana	0.258***	(0.01)	0.092***	(0.02)
Greece	0.216***	(0.02)	0.140***	(0.01)
Guatemala	0.248***	(0.03)	0.173***	(0.02)
Hong_Kong	0.166***	(0.01)	0.138***	(0.01)
Hungary	0.082***	(0.02)	0.085***	(0.01)
India	0.200***	(0.01)	0.129***	(0.01)
Indonesia	0.134***	(0.02)	0.073***	(0.01)
Iran	0.250***	(0.01)	0.117***	(0.01)
Iraq	0.308***	(0.02)	0.223***	(0.02)
Ireland	0.202***	(0.01)	0.053***	(0.01)
Italy	0.233***	(0.02)	0.167***	(0.01)
Japan	0.181***	(0.01)	0.067***	(0.01)
Jordan	0.239***	(0.02)	0.130***	(0.02)
Lebanon	0.201***	(0.02)	0.077***	(0.01)
Lithuania	0.216***	(0.02)	0.180***	(0.01)
Malaysia	0.369***	(0.01)	0.053***	(0.01)
Mexico	0.244***	(0.03)	0.170***	(0.02)
Morocco	0.226***	(0.02)	-0.033***	(0.01)
Netherlands	0.183***	(0.01)	0.084***	(0.01)
New_Zealand	0.049***	(0.01)	0.229***	(0.01)
Nigeria	0.197***	(0.02)	0.134***	(0.02)
Pakistan	0.221***	(0.01)	0.101***	(0.01)
Palestine	0.275***	(0.02)	0.349***	(0.01)
Peru	0.222***	(0.02)	0.188***	(0.01)
Philippines	0.205***	(0.01)	0.122***	(0.01)
Poland	0.164***	(0.01)	0.156***	(0.01)
Portugal	0.282***	(0.01)	0.139***	(0.01)
Puerto_Rico	0.160***	(0.02)	0.083***	(0.01)
Romania	0.219***	(0.03)	0.143***	(0.01)
Russia	0.117***	(0.01)	-0.047***	(0.01)
Salvador	0.237***	(0.03)	0.196***	(0.02)
Singapore	0.184***	(0.02)	0.093***	(0.01)
Slovakia	0.327***	(0.01)	0.223***	(0.01)
South_Africa	0.126***	(0.02)	0.068***	(0.01)
South_Korea	0.178***	(0.01)	0.082***	(0.01)
Spain	0.155***	(0.01)	0.029***	(0.01)
Sweden	0.062***	(0.02)	-0.026**	(0.01)
Switzerland	0.209***	(0.01)	0.016*	(0.01)
Taiwan	0.193***	(0.01)	0.043***	(0.01)
Thailand	0.199***	(0.02)	0.112***	(0.01)
Trinidad	0.212***	(0.02)	0.122***	(0.01)
Turkey	0.293***	(0.01)	0.094***	(0.01)
Uganda	0.402***	(0.01)	-0.124***	(0.02)
UK	0.178***	(0.01)	0.092***	(0.01)
Ukraine	0.173***	(0.01)	0.039***	(0.01)
Uruguay	0.307***	(0.02)	0.040***	(0.01)
Venezuela	0.265***	(0.01)	0.251***	(0.01)
Vietnam	0.234***	(0.02)	0.122***	(0.01)
Constant	0.566***	(0.09)	0.562***	(0.06)
R-sqr	0.368		0.405	
N	37735		38183	

Note: Regressions are run on second-generation immigrants aged 15-29 years old, separately for the two genders (men in column 1, women in column 2). Regression controls include: education level, labour market status, marital status and presence of own children in the household as well as income deciles. Country of origin dummies are defined by looking primarily at the country of origin of the father. If the country of origin of the father is missing or where the father is native whereas the mother is foreign-born, the country of origin of the mother is used. All regressions control for state and year fixed effects. Robust standard errors are clustered at the country of origin level. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent. Source: Current Population Survey (1994-2014).

exhibit significantly higher propensities than women to live with their parents. Young Portuguese men are 28% more likely to live with their parents than Norwegian young men, whereas being a young woman with Portuguese origins increases only by only 13% the probability to remain in the parental household in comparison to Norwegian women. When focusing exclusively on male youth with European origins, Southern Europeans seem to be followed by Eastern Europeans and then Western Europeans in their propensity to live with parents, with men of Northern European origins being the least likely to live with their parents. This ranking follows closely the one that can be observed in individuals' home countries in the European continent, as emphasized by descriptive statistics reported in Section 1. ¹⁰

All in all, Panel A of Figure 1.4 stresses that it is essentially men who drive the co-residence patterns observed among young descendants of immigrants in the US. Young men of Latin American origins as well as Southern European youth are the most inclined to remain the parental household in contrast to youth of Norwegian origins. Women seem to inherit some preferences about co-habitation with parents since they do exhibit a variation in their co-residence choices based on their countries of origin, but their behavior is only weakly correlated to the behavior of young immigrant men (.18). This weak relationship between men and women's co-residence choices in the US is in line with the predictions of the conceptual framework, suggesting that the trade-off between leaving or not leaving the parental household is not the same for women and men. In their home countries, women may not have a choice to actually leave the parental household earlier due to institutions or other macroeconomic factors that prevent them from leaving.

to live with parents. The model takes the following form:

$$P_{ist} = \alpha_0 + \alpha_1 O_{ist} + \alpha_2 M_{ist} + \alpha_3 O_{ist} * M_{ist} + \alpha_4 X_{ist} + F_t + F_s + \varepsilon_{ist} \quad (1.2)$$

where M_{ist} is a dummy indicating that the individual is a male and the coefficient of interest is α_3 . Results confirm those presented in Figure 1.4, emphasizing that young immigrant men of various origins have a significantly different behavior than women in terms of co-residence choices, with higher probabilities of living in the parental household.

¹⁰ In a similar vein, Table 1.8 in the Appendix reports the result of an analysis based on General Social Survey (GSS) data that examines the co-residence choices of immigrant youth from several generations of immigrants of European origin. The GSS provides information on the origin of the respondent, as well as on the origin of his parents and grand-parents, thus allowing the identification of individuals up to the third immigration generation. Estimates based on GSS data highlight the persistence of cultural preferences for youth's living arrangements across four generations of immigrations. They are thus consistent with the findings of Giavazzi et al. (2014), stressing the importance of the country of origin for the convergence process to the extent that the homogenizing effect of the American society is significantly lower for some immigrants (e.g. Southern Europeans) than for others.

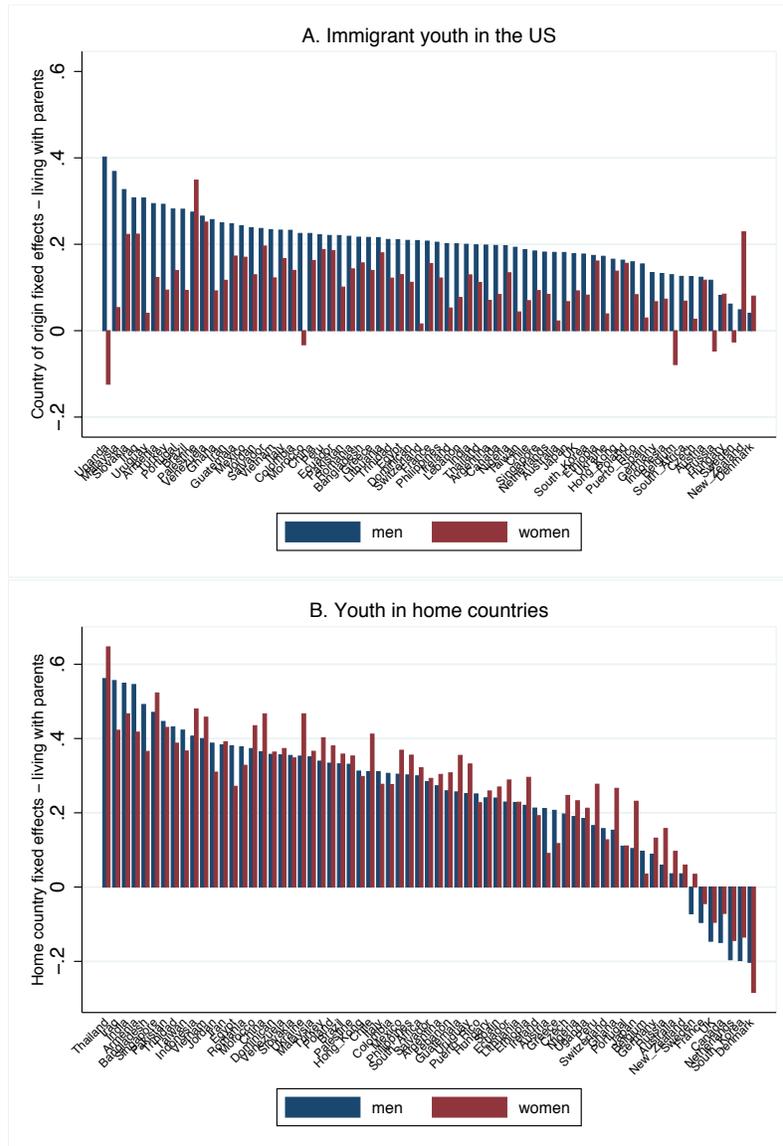


Figure 1.4: Heterogeneity in young men and women’s living arrangements in the US and in their home countries

Source: Current Population Survey (1994-2014), World Values Survey (1994-2014).

Note: Country effects displayed on both graphs are derived from OLS regressions on dummies for individuals’ country of origin in the US (using CPS data) or home country (using WVS data), based on the model described in equation 1. The dependent variable is a dummy equal to 1 if the individual lives with his parents. Estimations are run on the youth population, separately for the two genders. Country effects for second-generation immigrant young men and women in the US are taken from table 1.2. Country effects for young men and women in the home countries are taken from table 1.7 available in the Appendix. Controls include marital status, the presence of a spouse and of own children in the household, education level, income per capita and labor market status. Year and fixed effects are equally included in the estimation. Robust standard errors are clustered at the country of origin level.

Table 1.3: Correlation between young men and women’s co-residence choices in the home country and co-residence choices of descendants of immigrants in the US

	(1)	(2)	(3)
	All	Men	Women
Country fixed effects (US) - living with parents	1.29***	1.12***	.468*
Constant	.362	.311	.275
	.056	.020	.218***
N	.062	.067	.036
R-sqr ²	67	67	67
	.164	.165	.043

Note: The dependent variable is represented by the country fixed effects in the home country for all youth (column 1), young men (column 2) and young women (column 3), derived from regression on World Values Survey data based on the specification in equation 1. The independent variable is represented by the country fixed effects in the the US country for all youth (column 1), young men (column 2) and young women (column 3), derived from regression on Current Population Survey data based on the specification in equation 1. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent. Source: Current Population Survey (1994-2014), World Values Survey (1989-2014).

Indeed, panel B of Figure 1.4 shows that in their home countries, women are actually as likely as and sometimes even more likely than men to live in the parental household, whereas in the US, for almost any given origin, young women are more susceptible to move out than young men.¹¹ Consistent with the conceptual framework presented in Section 3, these graphs suggest that in their home countries young women remain longer in the parental household because they are most likely not able to leave, either due to institutional factors (e.g. labor market conditions or social institutions features that make them more vulnerable than men if they leave the household) or because of (and even, maybe combined with) societal pressures related to conservative values about women’s place in society which makes it socially unacceptable for young women to leave the parental household without being married. However, when living in the US, women are not confronted to these institutional obstacles anymore and they exercise more easily their actual preference for leaving. On the contrary, it is still convenient for men to live with parents when the latter provide enough support, as already emphasized by the model in the previous section. When women come from societies with traditional gender values, once they are in a society that enables them to leave the parental household easier, they take advantage of this opportunity much more than men. This explains the larger gender gap that can be observed for immigrants in the US relative to their home countries when it comes to the share of youth living with their parents.

¹¹Regression results are presented in table 1.7 in the Appendix.

Moreover, if cultural transmission within the families with respect to preferences for youth living arrangements occurs, then there should be a statistically significant correlation between young immigrants's co-residence patterns in the US and youth's co-residence choices in the home countries. The correlation between the living arrangements of young immigrant men in the US and young men in their home countries is positive and statistically significant at the 1% level¹². Around 17% of the cross-country heterogeneity in young men's living arrangements relative to Norwegian male youth is associated with differences in culture. However, when the same analysis is performed using country fixed effects of young female immigrants in the US, no statistically significant relationship is observed with the co-residence patterns of young women in the home countries. The variation in co-residence patterns of immigrant youth in the US appears to be primarily due to men who replicate the behaviors from their countries of origin.

On average, over the sample of countries of origin considered, young men are twice as likely as women to remain living with their parents. One concern with this finding is that the difference between young immigrant men and women in the US might actually be capturing just a simple general difference between male and female individuals when it comes to co-residence patterns. If this were only a demographic effect of the fact that women simply leave earlier the parental household than men due to more traditional explanations such as household formation, then we would observe a correlation between US patterns and home country ones not only for men but also for women. However, it is only young men who seem to replicate the behavior of their home countries, which reinforces the case for a cultural transmission mechanism of co-residence preferences that runs through men.

1.4.2 Robustness checks: labor market participation and business cycles effects on young men's co-residence patterns

One argument against the transmission through the family of the preference for co-residence of men might be that young men of different immigrant origins simply experience more difficulties in entering the labor market than women; hence, they are more inclined to remain in the parental household. In order to test this hypothesis, I run a similar estimation to that of equation 1, in which the dependent variable is the probability to be employed (full-time or part-time)¹³. Figure 1.5 reports the correlation between the fixed effects of the country of origin for being

¹²Results are robust to the removal of non-significant country fixed effects from the regression.

¹³Estimations results are reported in table 1.9 of the Appendix.

employed on the x-axis and the fixed effects for the country of origin for living with parents on the y-axis. The reference country of origin is Norway. Country fixed effects for the probability of being employed which are not statistically significant at the 5% level are not displayed in the Figure. There appears to be no statistically significant relationship between the propensity to be employed of young male descendants of immigrants and their likelihood to live with their parents. Regression analysis performed at the region of origin level (with respect to Northern Europeans) yields similar results. Labor market performance does not appear to be correlated with living arrangement decisions for young men, which seem to be primarily driven by the inherited social and cultural norms.

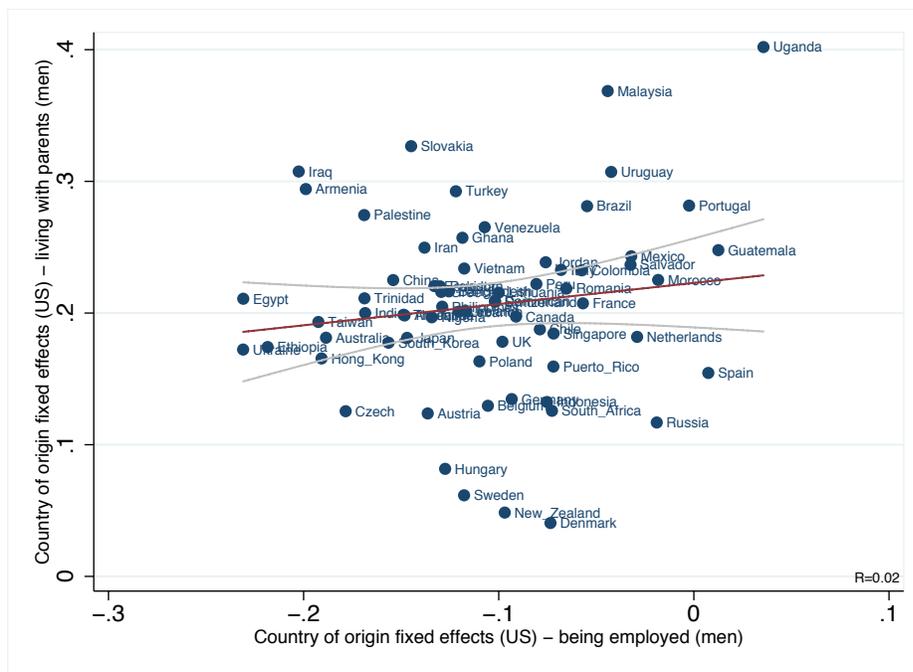


Figure 1.5: Probability to be employed and co-residence patterns of young male descendants of immigrants in the US

Source: Current Population Survey (1994-2014).

Note: Country effects displayed on the graph are derived from OLS regressions of the probability to live with parents and the probability to be employed on dummies for individuals' country of origin in the US. Estimation results for the probability to live with parents of young second-generation immigrant men of different origins are available in table 1.2. Estimation results for the probability to be employed of second-generation immigrant men of different origins are available in table 1.9 in the Appendix.

Another way of assessing the relationship between labor market performance and cultural effect on young men's co-residence choices is by examining whether the unemployment rates

of male youth of different origins respond in the same way to business cycle movements. In a similar exercise to that of Bitler and Hoynes (2015), I analyze the effect of economic recessions on young male’s unemployment rates, distinguishing between young men of different immigrant origins. Because this analysis requires a sufficient number of observations at the state*year level, I group countries of origin in several regional groups. In order to ensure that countries with similar shares of youth living in the family home are aggregated in the same regional group, I decide to restrict this analysis only to European and Latin American descendants. CPS data on youth unemployment rates is collapsed at the state year level and matched with state unemployment rate data for the previous calendar year. ¹⁴The following OLS model is run:

$$U_{gst} = \alpha U_{st} + F_s + F_t + F_s F_t + \varepsilon_{gst} \quad (1.3)$$

where U_{gst} is the probability for young male individuals from a given origin group g to be unemployed in state s at time t . U_{st} is the state unemployment rate at time t . The regressions control for state fixed effects F_s as well as for time fixed effects F_t and for state-specific time trends $F_s F_t$. Standard errors are clustered at the state-level. In order to capture the potentially different effect of various recession episodes whose length and severity might vary, I also run estimations in which the state unemployment rate is interacted with dummies for three different year periods (2001 for the 2001 recession, 2007-2013 for the recent recession and recovery years, the rest of the observed period).

Results are reported in Table 1.4. Percent impacts are calculated by dividing the state unemployment rate coefficient by the mean of the dependent variable. Panel A displays estimates for all available years pooled together. If the unemployment rate of Latin American male youth reacts in a similar way to that of natives, no difference can be seen among European descendants. Business cycle shocks throughout the 1994-2014 period do not seem to affect the living arrangements of youth from these origins in a different way although they belong to cultures with different propensities for youth to live in the parental household.

Panel B of Table 3 looks at the differential effect of recessions in the past two decades in the US. The most recent economic downturn seems to trigger an increase in young American natives unemployment rates. A 1 percentage point increase in the state unemployment rate during the

¹⁴Years in the following analysis refer therefore to the calendar year (which is the same as the year in which income is observed in the CPS data).

Table 1.4: Effects of state unemployment rates on young men's of different origins unemployment rates in the US(CPS)

	(1)	(2)	(3)	(4)	(5)	(6)
	Native	S-Europe	N-Europe	W-Europe	E-Europe	Latin America
<i>Panel A: All years</i>						
Unemployment rate (UR)	0.617*** (0.077)	1.199 (1.129)	-0.504 (0.524)	-0.309 (0.438)	1.484 (1.401)	0.668*** (0.132)
Percent Impact	10.266	20.843	-105.433	-7.074	44.594	10.379
N	1071	520	146	942	418	1022
<i>Panel B: By recession years</i>						
UR*Other years	0.624*** (0.101)	1.918* (1.107)	-0.011 (0.421)	-0.093 (0.612)	0.780 (1.587)	0.317 (0.253)
UR*2001 Recession	-0.307 (0.281)	2.892 (6.325)	-2.862 (3.582)	2.308 (2.369)	1.717 (2.553)	0.274 (0.904)
UR*2007 Recession	0.589*** (0.109)	0.390 (1.534)	-0.637 (0.624)	-0.649 (0.482)	2.141 (1.366)	0.682*** (0.152)
Percent Impact Other years	10.371	33.341	-2.362	-2.125	23.434	4.916
Percent Impact 2001 Recession	-5.102	50.259	-599.122	52.937	51.574	4.262
Percent Impact 2007 Recession	9.788	6.776	-133.286	-14.883	64.335	10.589
N	1071	520	146	942	418	1022

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

Note: Data for male youth are collapsed at the state*year level. All regressions control for state and year fixed effects. Percent impacts report the coefficient divided by the mean of the dependent variable. Standard errors are clustered at the state level. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Source: Current Population Survey (1994-2014).

recession and recovery years results in a 9.78 percent rise in the unemployment rate of native youth. Youth with Latin American origins exhibit again a similar risk of unemployment due to the recent economic downturn. However, no significant reaction is observed for youth with European origins, whether they come from societies where youth live longer with their parents, like Mediterranean ones or from societies where youth emancipate faster such as Scandinavian countries. If youth who live longer in the parental household were also those reacting more sensitively to business cycles, then we should observe similar unemployment risk responses for Southern European, Latin American and Eastern European youth and distinct ones for Scandinavian or Western European youth who are culturally less likely to live in the family home. However, this is not the case: the labor market performance of young men of different European origins reacts in the same way to local unemployment. Latin Americans display a distinct pattern but this is most likely due to other features of Latin American youth that are not related to their preference for co-habitation and that make them more exposed to recessions. Corroborated with the evidence presented above on the lack of correlation between labor market participation and young men's living arrangements, this result reinforces the hypothesis that culture of origin is the main driving mechanism behind the patterns of co-residence observed for young males.

1.5 Co-residence, housework and marriage choices

Through which specific mechanism does culture impact on young men's decision to live with their parents? This subsection provides evidence that it is traditional values about women's role in a household that are key determinants of young men's late departure from the parental household in comparison to women's. Men are indeed more susceptible of reaching certain milestones in their lives (partnership formation, college graduation, etc.) at later ages than women (Fry, 2016). However, the different evolution in life of men and women is not sufficient to explain the above observed patterns in youth living arrangements across countries. As young second-generation immigrants in the US reproduce to a large extent the behavior of youth in the countries of origin of their ancestors, culture and more specifically, certain cultural values such as attitudes towards gender roles appear to be key in understanding the differential trade-off for young men and women when it comes to living in the parental household. Previous studies (Alesina, Giuliano, 2010) have already provided evidence that strong family ties societies are associated

with higher shares of youth living in the parental household. Complementing this research, this paper shows that it is men who are responsible for these higher shares of youth-parents co-habitation while the economic literature has remained silent until now with respect to the mechanisms underlying the gender gap in living arrangements.

I argue that in cultures with traditional values about gender roles, whether it is roles within the family or within society as a whole, men have more incentives than women to remain in the parental household. More conservative attitudes towards women are translated in a higher expectation that women take the leading role in the organization of the household and devote a significantly higher amount of time to household activities and home production (Alesina, Ichino, 2010; Alesina, Giuliano, 2010). On the contrary, men are exempt from such household tasks who are performed for them primarily by their mothers or other women in the household (Judd, 2010) and they equally benefit from the liberalizing attitudes of the past decades on sexual behavior (Giuliano, 2007). Put differently, men enjoy both the advantages of being taken care of by their family when it comes to cleaning, cooking or other household chores, and the freedom of leading their private life as they desire. In this respect, their incentives to remain in the parental household as young adults are more important than those of women in societies with traditional values about gender roles.

Moreover, when women from cultures with traditional values about gender roles live in a more liberal society regarding gender roles and attitudes, they are not only more likely to leave faster the parental household but they will also seek to escape their culturally pre-established role in the household by marrying outside of their own ethnicity or culture of origin.

1.5.1 Time use within the household and young men's co-residence choices

In most economies, women are responsible of most of the unpaid work in households and even when men do not work, the actual time they spend taking care of their children is still lower than that of women who work (Miranda, 2011). If this gender gap in the distribution of time devoted to household tasks is only weakly correlated with GDP per capita (Miranda, 2011), it is more strongly related to the type of values and attitudes societies have with respect to women's roles. In countries where women are expected to perform the bulk of household work whereas men are confined to their "breadwinner" role, it is more likely that young men will find more incentives to remain longer in the parental household than women. Traditional values about

gender roles amplify the gender gap in the distribution of tasks within the household and thus favor a later emancipation of young men from their parents as in the parental household. This holds especially as men get married later than women and hence, leaving the parental household early would mean living independently and without the support of one's mother for household tasks. Unless men have a particularly high taste for privacy and that despite the liberalization of parental attitudes in the last decades still does not provide them with the amount of privacy they need, they will have significant incentives to remain in the parental household where they are taken care of by their mothers.

I use the American Time Use Survey (ATUS) in order to study the relationship between the time spent on household-related activities and young men's incentives to remain in the parental household. Similarly to CPS (from which its sample is drawn randomly), the ATUS database allows identifying immigrants and their countries of origin. The sample used in the analysis below comprises the 2003-2014 period as ATUS began running only in 2003. Due to the low number of available observations by country of origin, first and second-generation immigrants are pooled together for this analysis. Only countries with at least 15 available observations are selected in order to obtain interpretable results. Time spent on household-related activities is defined as the sum between the time allocated to routine housework and the time devoted to caring for and helping other household members. Routine housework includes general housework, cooking, yard care, pet care, vehicle maintenance and repair, and home maintenance, repair decoration and renovation. Household management and organizational activities also belong to routine housework.

As in previous estimations, Norwegian descendants are taken as the reference group. Figure 1.6 illustrates the gender gap in time devoted to household activities between immigrant men and women from different origins in the US. Men perform significantly less household tasks than women and this gap varies strongly based on the country of origin of the individual. To obtain country fixed effects, I control for marital status, presence of children in the household, age

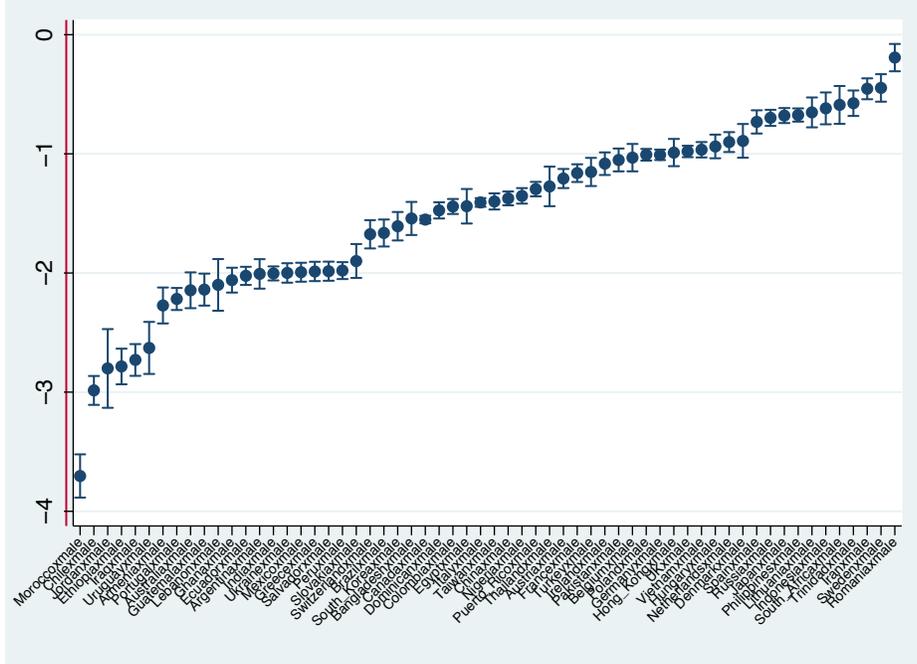


Figure 1.6: Time devoted to household activities by men from different countries of origin (in comparison to women)

Source: American Time Use Survey (2003-2014).

Note: Coefficients displayed on the graph are estimates of interaction terms between a male dummy and a dummy designating the country of origin of the individual, obtained from an OLS regression. The dependent variable of the regression is the time devoted by the individual to household-related activities. Controls include: marital status, the presence of a spouse and of own children in the household, age, age squared, education level, income per capita, labour status, the occupation category of the main job and the industry category of the main job. Year and state fixed effects are equally included in the estimation. Robust standard errors are clustered at the country of origin level.

(and age squared), education level, per capita family income and labor status.¹⁵ State and year fixed effects are also included and standard errors are corrected by clustering at the country of origin level.

¹⁵The estimated model takes the form:

$$A_{ist} = \alpha_0 + \alpha_1 O_{ist} + \alpha_2 M_{ist} + \alpha_3 O_{ist} * M_{is} + \alpha_4 X_{ist} + F_t + F_s + \varepsilon_{ist} \quad (1.4)$$

where A_{ist} is the time spent on household-related activities by individual i in state s in year t . O_{ist} is a dummy for the country of origin of the individual. M_{is} is a dummy equal to 1 if the individual is a male. The coefficient of interest is α_3 , showing whether male of given origins devote more or less time to household-related activities. The regressions control for a series of individual characteristics like age, age squared, education, labor market status, marriage status, presence of children in the household or per capita family income (X_{ist}), as well as for time (F_t) and state (F_s) fixed effects.

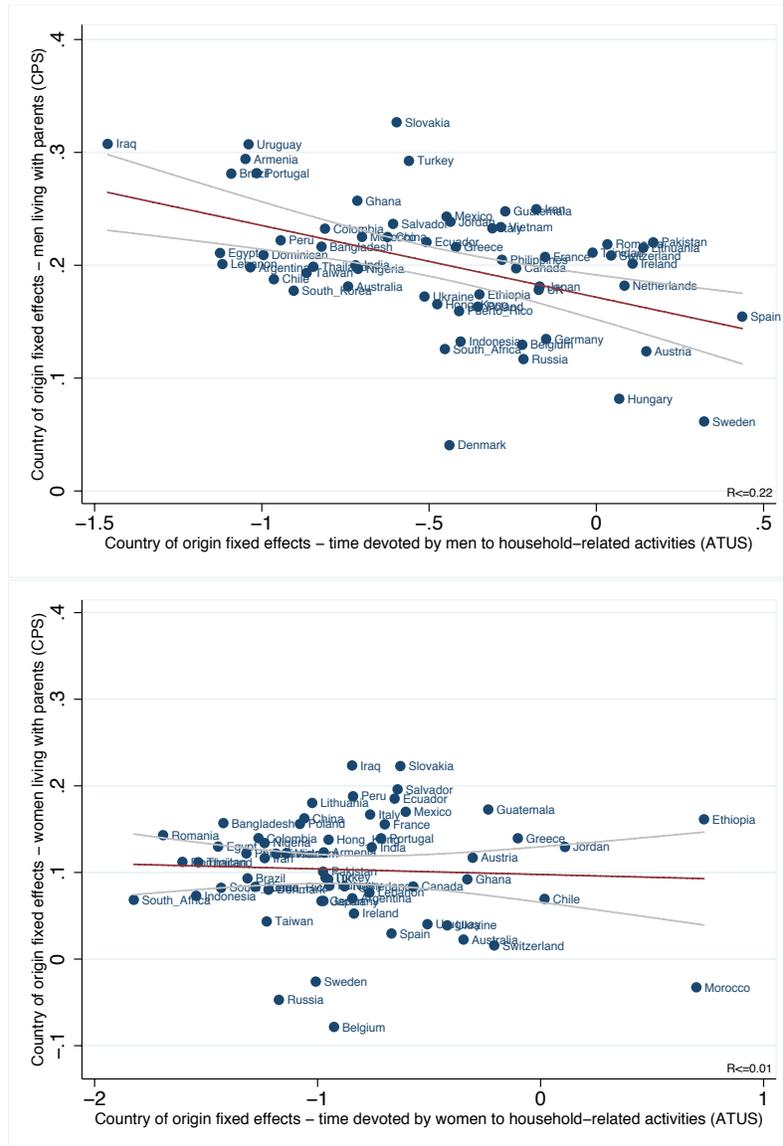


Figure 1.7: Correlation between time devoted to household activities and co-residence choices of young male and female descendants of immigrants in the US

Source: Current Population Survey (1994-2014); American Time Use Survey (2003-2014).

Note: The coefficients on both graphs are derived from an OLS regression on dummies for the country of origin of the individual (similar to equation 1). The dependent variable is the time devoted by the individual to household-related activities. Controls include : marital status, the presence of a spouse and of own children in the household, age, age squared, education level, income per capita, labour status, the occupation category of the main job and the industry category of the main job. Year and state fixed effects are equally included in the estimation. Robust standard errors are clustered at the country of origin level.

Figure 1.7 illustrates that there is a strong negative relationship between the time devoted by young immigrant men to household-related activities and their probability to live with parents. The correlation is highly significant: relative to Norway, young men with ancestors in countries such as Morocco or Portugal allocate significantly less time to housework and caring for other household members; they are also substantially more likely to live in the parental household than Norwegians. At the opposite side stand young men with Swedish or Danish origins who are more invested in household activities and are equally more inclined to live independently from their parents. Figure 1.7 highlights therefore the strong relationship between unpaid household work and young men's probability to live in the parental household. Also, the amount of time men devote to household tasks is strongly negatively correlated with their inherited conservative values about gender roles (the relationship is robust to a variety of controls, including age, education, labour market status or household composition).

When the same estimations are run on the female population, no statistically significant correlation appears. This suggests that for women, the participation in household activities does not appear to be related to their decision to live in the parental household, most likely because it is expected in any case from them to contribute substantially to household chores, whether they live with their parents or not. On the contrary, for men who live in countries with more traditional views on the gender distribution of household roles, the low level of participation in tasks performed within the household is likely to represent an incentive in remaining within the parental home. Given that men get married and form a new household later than women, it is more interesting for them to remain in the parental household in the meantime if this means that somebody else will take care of household chores. Moreover, if the correlation in Figure 1.7 was interpreted only as the effect of living in the parental household on the amount of time devoted to household-related activities, then the same negative relationship should be observed for women as well given that having parents around would equal having to contribute less to household chores because parents take care of them. However, as explained above, this is not the case. Taken together with the evidence on values about gender presented in the previous sub-section, Figure 1.7 shows that societies in which young men live longer in the parental household are also those with more traditional values about gender roles and a more unequal gender division of household work.

1.5.2 Gender norms and inter-ethnic marriage

Traditional values about gender roles result in a different trade-off for men and women when it comes to remaining in the parental household, with men having more incentives relative to women to continue leaving with their parents. Put differently, for women with origins in societies that exhibit conservative attitudes about gender roles, living with parents or with a spouse is equivalent when it comes to their participation in household chores. Hence, when they move to a different environment like the US, with more liberal views on gender roles, a different institutional environment as well as with less pressure from their own society to obey to its norms related to women's place in the household, women are more likely to deviate from their culturally pre-established role. A way for them to do so is by marrying somebody from a different ethnicity than their own and so, somebody who will be less likely to have the same expectations about their spouse's role in the household as someone from their own ethnicity would. Put differently, if in their own country Venezuelan women are expected to do all the housework and to comply with a simple housewife role, when they move to a different country they will want to marry someone who is more willing to participate in household chores and has a more liberal view on the women's overall role. Since marrying a Venezuelan immigrant in the US would make them more likely to replicate the role they would have had in Venezuela anyways, they will prefer to marry someone of a different ethnicity in order to maximize their chances to escape their pre-established cultural role within the household.

This subsection looks therefore at marriage choices of first-generation immigrants in the US and examines whether immigrant women are likelier than immigrant men to marry outside their ethnicity. Since the CPS does not allow distinguishing between immigrants who were already married before arriving in the US and those who got married in the US, I use American Community Survey (ACS) data for the 2008-2011 period.¹⁶

The sample is restricted to first-generation immigrant individuals who are over 16 years old (legal age of marriage in the US), live in an identifiable metropolitan area and got married after entering the US. I focus on individuals who immigrated after their 15th anniversary since those who came to the US as young children are more likely to have been influenced more by the host country culture and hence their value for shared ethnicity is likely to be lower than that of elder individuals. Individuals whose citizenship status cannot be identified as well as those

¹⁶The variable "year of marriage" is available only starting with the 2008 sample.

who were born abroad of American citizens are excluded from the sample. Individuals' ethnic origin is identified both through their country of birth and through their self-reported ancestry. The dependent variable, namely the probability of inter-ethnic marriage, is constructed in two versions based on the way ethnicity is defined. The first definition of the dependent variable considers that an individual is in an inter-ethnic marriage if the spouse has a different country of birth. A second definition considers that an inter-ethnic marriage is a marriage between individuals with different self-reported ancestries.

In order to examine the relationship between immigrants' values about gender roles and their likelihood to marry someone from a different ethnicity, I associate to each immigrant the gender values of his/her country of origin, using the indicator constructed in Section 1 from World Values Survey data. As a robustness check, I equally use a gender values indicator built using principle component analysis. add Furtado in the appendix!!!!!!!!!!!!

The estimation is run on both definitions of inter-ethnic marriage. Being a female from a country (or ancestry) with more traditional values about gender roles has a statistically significant positive effect on one's propensity to marry someone from a different ethnicity. In line with the literature on inter-ethnic marriage (for a review, see Chiswick and Houseworth, 2011), the estimation controls for a variety of individual variables that may influence the preferences for or opportunity of contact with people from a different ethnicity. Among these, the share of individuals from the same ethnicity who live in the same metropolitan area is considered as a sort of "availability ratio" (Chiswick and Houseworth, 2011) of potential spouses in one's ethnic group.

Estimation results are presented in Table 7. Whether ethnicity is defined using the country of birth or a person's declared ancestry, being a women with origins in a society with more traditional values about gender roles increases the probability to marry someone from a different ethnicity. Individuals who speak better English as well as those who have multiple ancestries are also more likely to marry someone from a different ethnicity, consistent with the findings of the literature. The share of same ethnic individuals who live in the same metro area reduces the probability to marry inter-ethnically when inter-ethnic marriage is defined by ancestry whereas it appears to have no effect when it is defined by country of birth. This suggests that the ancestry definition is probably more accurate, which is also consistent with the fact that even if an individual reports a given country of birth, he may not necessarily have that ethnicity and

Table 1.5: Traditional values about gender roles and likelihood of interethnic marriage (US)

	(1)		(2)		(3)		(4)	
	Birth country (sum)	SE	Ancestry (sum)	SE	Birth country (PCA)	SE	Ancestry (PCA)	SE
	Coeff.		Coeff.		Coeff.		Coeff.	
Female of ethnicity with more trad. gender values	0.102**	(0.04)	0.099***	(0.03)	0.172***	(0.05)	0.151***	(0.03)
Female	-0.591**	(0.29)	-0.564***	(0.21)	0.030	(0.02)	0.044***	(0.02)
Ethnicity with more trad. gender values	-0.119***	(0.02)	-0.138***	(0.02)	-0.174***	(0.03)	-0.183***	(0.03)
Share of same ethnicity individuals in metro area	-0.063	(0.07)	-0.309***	(0.08)	-0.062	(0.07)	-0.309***	(0.08)
<i>English level</i>								
Does not speak English	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Yes, but not well	0.037***	(0.00)	0.012**	(0.01)	0.035***	(0.00)	0.010*	(0.01)
Yes, speaks well	0.106***	(0.01)	0.051***	(0.01)	0.103***	(0.01)	0.049***	(0.01)
Yes, speaks very well	0.200***	(0.01)	0.116***	(0.01)	0.200***	(0.01)	0.116***	(0.01)
Yes, speaks only English	0.553***	(0.03)	0.405***	(0.03)	0.550***	(0.03)	0.402***	(0.03)
Married more than once	0.089***	(0.01)	0.089***	(0.01)	0.089***	(0.01)	0.090***	(0.01)
<i>Age at marriage</i>								
16-29	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
30-45	0.037***	(0.01)	0.042***	(0.01)	0.037***	(0.01)	0.042***	(0.01)
45+	0.029*	(0.02)	0.048***	(0.01)	0.029*	(0.02)	0.048***	(0.01)
Multiple ancestries	0.137***	(0.01)	0.252***	(0.02)	0.137***	(0.01)	0.251***	(0.02)
Years since migration	-0.002	(0.00)	-0.003**	(0.00)	-0.002	(0.00)	-0.003**	(0.00)
<i>Age at immigration</i>								
16-18	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
19-24	0.003	(0.00)	0.001	(0.00)	0.003	(0.00)	0.001	(0.00)
25-29	0.003	(0.01)	0.002	(0.01)	0.003	(0.01)	0.002	(0.01)
30-35	0.026**	(0.01)	0.003	(0.01)	0.025**	(0.01)	0.003	(0.01)
36-39	0.048***	(0.02)	0.007	(0.02)	0.048***	(0.02)	0.007	(0.02)
40-49	0.061**	(0.03)	0.014	(0.03)	0.061**	(0.03)	0.013	(0.03)
50+	0.079**	(0.04)	0.003	(0.05)	0.079**	(0.04)	0.002	(0.05)
<i>Race</i>								
Pacific islander	-0.018	(0.03)	-0.102**	(0.05)	-0.018	(0.03)	-0.101**	(0.05)
Asian	-0.154***	(0.03)	-0.138***	(0.02)	-0.149***	(0.03)	-0.132***	(0.02)
Black	0.068	(0.05)	-0.105**	(0.04)	0.069	(0.04)	-0.100**	(0.04)
Other race	-0.012	(0.01)	-0.017	(0.01)	-0.012	(0.01)	-0.017	(0.01)
Hispanic	-0.025	(0.03)	0.006	(0.03)	-0.033	(0.03)	-0.003	(0.03)
Number of races	0.063***	(0.01)	0.088***	(0.02)	0.065***	(0.02)	0.091***	(0.02)
Other controls	Yes		Yes		Yes		Yes	
Constant	1.075***	(0.19)	1.371***	(0.21)	0.326***	(0.12)	0.503***	(0.18)
R-sqr	0.223		0.256		0.225		0.257	
N	149940		129135		149940		129135	

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

Note: Regressions are run on first-generation immigrants, aged over 16 years old who got married after immigrating to the US. The indicator for traditional gender values is calculated from World Values Survey data, based on the items exposed in Section 1 : in columns 1-2 - the value of these items is summed, in columns 3-4 principal component analysis is used to extract an indicator. The dependent variable - inter-ethnic marriage - is defined either based on the country of birth of the spouse (columns 1 and 3) or based on the ancestry of the spouse (columns 2 and 4). Other controls include: age, age squared, the presence of own children in the household, labor market status, income deciles, education level, census regional dummies and a variable indicating whether the household was located within a metropolitan area. Robust standard errors are clustered at the MSA-ethnicity level (as in Furtado, 2011). * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Source: American Community Survey (2008-2011).

share the culture of that country.

This analysis has illustrated that when faced with the possibility to choose, women with origins in societies with more traditional values on gender roles are more likely to marry someone with a different cultural background than their own. This is consistent with the previous evidence on how conservative values about gender roles shape men and women's trade-offs when it comes to co-residence patterns and with the fact that women might actually have a preference for leaving the parental household early, but due to institutional or societal factors they are not able to do so in their countries of origin. However, in the US the fact that they face a different trade-off than men is expressed both through the living arrangement choices of young second-generation women and through the marriage choices of first-generation (and hence, newly arrived) young female immigrants.

1.6 Conclusion

Institutions and macroeconomic conditions are most traditionally mentioned by the literature as the main determinants of youth's emancipation from their parents. This paper has put forward an explanation based on the effect of culture for young men and women's choices to co-reside with their parents. By studying the variation in living arrangements of second-generation immigrants in the US, it has emphasized that the cultural preference for co-residence runs through the behavior of young men. If in their home countries young women appear to be as likely and sometimes even more likely to remain in the family home than young men, second-generation immigrant women are all less susceptible to live in the parental household.

This suggests that women would actually prefer living alone, but they are prevented from doing so by specific obstacles in their home countries whereas living in the institutional and economic environment of the US reveals their true preferences. With the effect of culture thus identified by looking at immigrants who live in the same environment and exploiting the variation in co-residence choices between the two genders, future research could examine which macroeconomic determinants play a role in explaining the remainder of the cross-country variation in the proportion of young men and women living in the parental household. Moreover, this paper also raises the question of the channel through which cultural values and norms are transmitted and more specifically, whether some values are transmitted more by women or men. Future studies could also examine the effect of gender on cultural transmission mechanisms.

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1.7 Appendix

1.7.1 Empirical analysis on co-residence preferences

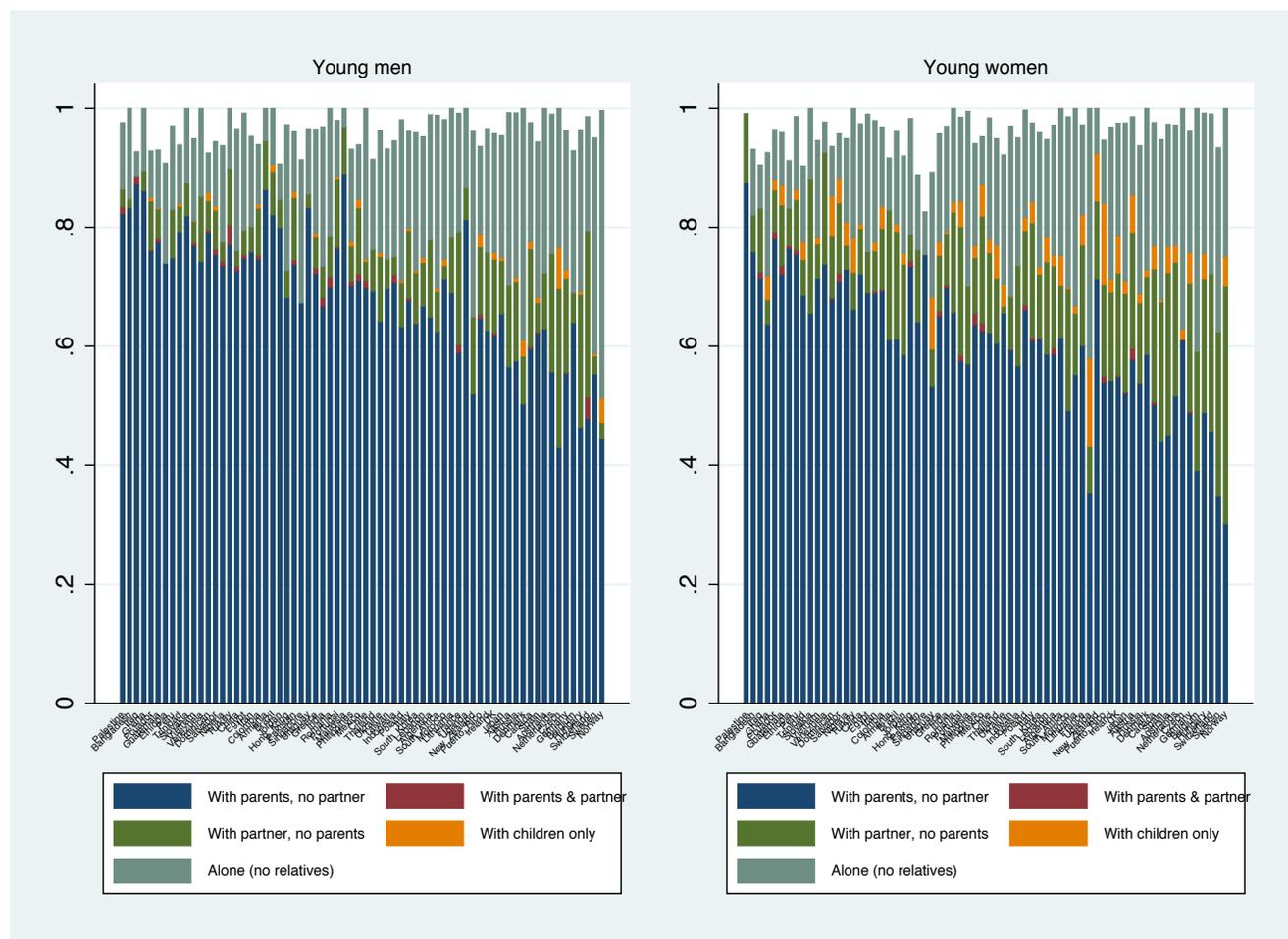


Figure 1.8: Living arrangements of second generation immigrant youth, by gender (US)

Source: Current Population Survey (1994-2014)

Note: Shares are calculated among youth of a specific gender. The share of young men living with parents is defined as the share of men living with parents among young men. The share of young women living with parents is defined as the share of women living with parents among young women.

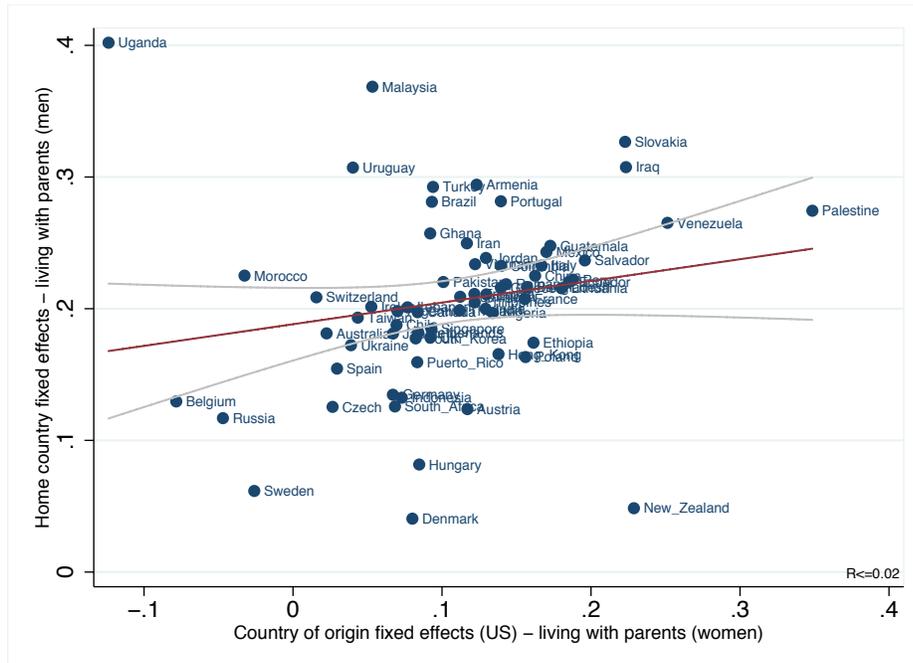


Figure 1.9: Correlation between young men and women’s co-habitation patterns, by country of origin (US)

Source: Current Population Survey (1994-2014)

Note: Country effects displayed on the graph are coefficients derived from OLS regressions on dummies for the country of origin of the individual (based on the model in equation 1). Estimations are run separately for the two genders, on the respective youth population of second-generation immigrants. Controls include marital status, the presence of a spouse and of own children in the household, education level, income per capita and labor market status. Year and fixed effects are equally included in the estimation. Robust standard errors are clustered at the country of origin level.

Table 1.6: Young men and women living with parents(US)

	(1)	
	Coeff.	SE
Argentinaxmale	0.163***	(0.01)
Armeniaxmale	0.205***	(0.01)
Australiaxmale	0.174***	(0.01)
Austriaxmale	0.041***	(0.01)
Bangladeshxmale	0.103***	(0.01)
Belgiumxmale	0.237***	(0.02)
Brazilxmale	0.225***	(0.01)
Canadaxmale	0.150***	(0.00)
Chilexmale	0.151***	(0.00)
Chinaxmale	0.093***	(0.00)
Colombiaxmale	0.121***	(0.00)
Czechxmale	0.138***	(0.01)
Denmarkxmale	-0.038***	(0.01)
Dominicanxmale	0.154***	(0.00)
Ecuadorxmale	0.081***	(0.00)
Egyptxmale	0.126***	(0.01)
Ethiopiaxmale	0.049***	(0.01)
Francexmale	0.096***	(0.01)
Germanyxmale	0.108***	(0.00)
Ghanaxmale	0.215***	(0.01)
Greecexmale	0.119***	(0.01)
Guatemalaaxmale	0.119***	(0.00)
Hong_Kongxmale	0.044***	(0.01)
Hungaryxmale	0.055***	(0.01)
Indiaxmale	0.086***	(0.00)
Indonesiaaxmale	0.104***	(0.01)
Iranxmale	0.152***	(0.01)
Iraqxmale	0.139***	(0.01)
Irelandxmale	0.189***	(0.01)
Italyxmale	0.105***	(0.00)
Japanxmale	0.153***	(0.01)
Jordanxmale	0.184***	(0.01)
Lebanonxmale	0.170***	(0.01)
Lithuaniaxmale	0.041***	(0.01)
Malaysiaxmale	0.345***	(0.01)
Mexicoxmale	0.127***	(0.00)
Moroccoxmale	0.278***	(0.01)
Netherlandsxmale	0.128***	(0.00)
New_Zealandxmale	-0.126***	(0.01)
Nigeriaaxmale	0.100***	(0.01)
Pakistanxmale	0.161***	(0.01)
Palestinexmale	-0.020***	(0.01)
Peruxmale	0.067***	(0.00)
Philippinesxmale	0.110***	(0.00)
Polandxmale	0.032***	(0.01)
Portugalxmale	0.194***	(0.00)
Puerto_Ricoxmale	0.143***	(0.00)
Romaniaxmale	0.102***	(0.00)
Russiaxmale	0.182***	(0.01)
Salvadorxmale	0.092***	(0.00)
Singaporexmale	0.088***	(0.01)
Slovakiaxmale	0.131***	(0.01)
South_Africaxmale	0.088***	(0.01)
South_Koreaxmale	0.133***	(0.01)
Spainxmale	0.154***	(0.01)
Swedenxmale	0.101***	(0.01)
Switzerlandxmale	0.211***	(0.01)
Taiwanxmale	0.170***	(0.01)
Thailandxmale	0.134***	(0.00)
Trinidadxmale	0.136***	(0.01)
Turkeyxmale	0.217***	(0.01)
Ugandaxmale	0.547***	(0.02)
UKxmale	0.122***	(0.00)
Ukrainexmale	0.147***	(0.01)
Uruguayxmale	0.297***	(0.01)
Venezuelaxmale	0.043***	(0.01)
Vietnamxmale	0.147***	(0.00)
Constant	0.723***	(0.05) heightR-sqr
0.381		
N	75918	

Note: The coefficients are derived from an OLS regression on dummies for the country of origin interacted with a male dummy (based on the model in equation 2). The dependent variable is a dummy equal to 1 if the individual lives with his parents. Controls include marital status, the presence of a spouse and of own children in the household, education level, income per capita and labor market status. Year and fixed effects are equally included in the estimation. Robust standard errors are clustered at the country of origin level. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Source: Current Population Survey (1994-2014).

Table 1.7: Youth residential emancipation for youth of different origins, by gender (US and home)

	(1) Men (US)		(2) Men (Home)		(3) Women (US)		(4) Women (Home)	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Argentina	0.198***	(0.01)	0.273***	(0.04)	0.070***	(0.01)	0.303***	(0.03)
Armenia	0.294***	(0.01)	0.545***	(0.05)	0.123***	(0.02)	0.417***	(0.05)
Australia	0.181***	(0.01)	0.036	(0.04)	0.022***	(0.00)	0.096***	(0.03)
Austria	0.124***	(0.01)	0.212***	(0.06)	0.117***	(0.01)	0.091**	(0.04)
Bangladesh	0.216***	(0.02)	0.492***	(0.04)	0.157***	(0.02)	0.365***	(0.03)
Belgium	0.130***	(0.02)	0.097*	(0.06)	-0.078***	(0.02)	0.035	(0.04)
Brazil	0.281***	(0.01)	0.332***	(0.05)	0.093***	(0.01)	0.358***	(0.05)
Canada	0.197***	(0.01)	-0.149***	(0.05)	0.084***	(0.01)	-0.071*	(0.04)
Chile	0.188***	(0.02)	0.311***	(0.04)	0.070***	(0.01)	0.412***	(0.03)
China	0.225***	(0.02)	0.364***	(0.03)	0.163***	(0.01)	0.467***	(0.03)
Colombia	0.232***	(0.02)	0.306***	(0.05)	0.140***	(0.01)	0.276***	(0.05)
Czech	0.125***	(0.01)	0.197***	(0.05)	0.027***	(0.01)	0.247***	(0.04)
Denmark	0.041***	(0.01)	-0.203***	(0.06)	0.080***	(0.01)	-0.284***	(0.04)
Dominican	0.209***	(0.03)	0.357***	(0.05)	0.112***	(0.02)	0.364***	(0.04)
Ecuador	0.220***	(0.02)	0.229***	(0.03)	0.185***	(0.01)	0.288***	(0.03)
Egypt	0.211***	(0.01)	0.380***	(0.03)	0.130***	(0.01)	0.271***	(0.03)
Ethiopia	0.174***	(0.02)	0.220***	(0.04)	0.161***	(0.01)	0.296***	(0.04)
France	0.207***	(0.01)	-0.095*	(0.05)	0.156***	(0.01)	-0.044	(0.04)
Germany	0.135***	(0.01)	0.089**	(0.04)	0.067***	(0.01)	0.132***	(0.04)
Ghana	0.257***	(0.01)	0.153***	(0.04)	0.092***	(0.02)	0.266***	(0.03)
Greece	0.216***	(0.02)	0.207***	(0.06)	0.140***	(0.01)	0.117**	(0.04)
Guatemala	0.248***	(0.03)	0.256***	(0.07)	0.173***	(0.02)	0.355***	(0.07)
Hong_Kong	0.166***	(0.01)	0.312***	(0.07)	0.138***	(0.01)	0.298***	(0.06)
Hungary	0.082***	(0.02)	0.240***	(0.05)	0.085***	(0.01)	0.259***	(0.04)
India	0.200***	(0.01)	0.549***	(0.04)	0.129***	(0.01)	0.467***	(0.02)
Indonesia	0.132***	(0.02)	0.406***	(0.06)	0.073***	(0.01)	0.480***	(0.04)
Iran	0.250***	(0.01)	0.383***	(0.04)	0.117***	(0.01)	0.391***	(0.03)
Iraq	0.308***	(0.02)	0.556***	(0.06)	0.223***	(0.02)	0.422***	(0.05)
Ireland	0.201***	(0.01)	0.213***	(0.06)	0.053***	(0.01)	0.192***	(0.04)
Italy	0.233***	(0.02)	0.311***	(0.05)	0.167***	(0.01)	0.277***	(0.04)
Japan	0.181***	(0.01)	0.104	(0.07)	0.067***	(0.01)	0.231***	(0.06)
Jordan	0.239***	(0.02)	0.388***	(0.04)	0.129***	(0.02)	0.310***	(0.04)
Lebanon	0.201***	(0.02)	0.259***	(0.03)	0.077***	(0.01)	0.308***	(0.03)
Lithuania	0.215***	(0.02)	0.228***	(0.05)	0.180***	(0.01)	0.229***	(0.05)
Malaysia	0.369***	(0.01)	0.351***	(0.05)	0.053***	(0.01)	0.366***	(0.04)
Mexico	0.243***	(0.03)	0.304***	(0.03)	0.170***	(0.02)	0.369***	(0.02)
Morocco	0.225***	(0.02)	0.373***	(0.03)	-0.033***	(0.01)	0.435***	(0.03)
Netherlands	0.182***	(0.01)	-0.196***	(0.04)	0.084***	(0.01)	-0.144***	(0.04)
New_Zealand	0.049***	(0.01)	0.036	(0.05)	0.229***	(0.01)	0.059	(0.04)
Nigeria	0.197***	(0.02)	0.190***	(0.04)	0.134***	(0.02)	0.232***	(0.03)
Pakistan	0.220***	(0.01)	0.446***	(0.03)	0.101***	(0.01)	0.430***	(0.03)
Palestine	0.274***	(0.02)	0.331***	(0.03)	0.349***	(0.01)	0.353***	(0.03)
Peru	0.222***	(0.02)	0.166***	(0.02)	0.188***	(0.01)	0.277***	(0.02)
Philippines	0.205***	(0.01)	0.302***	(0.03)	0.122***	(0.01)	0.355***	(0.02)
Poland	0.163***	(0.01)	0.334***	(0.05)	0.156***	(0.01)	0.380***	(0.04)
Portugal	0.282***	(0.01)	0.110*	(0.06)	0.139***	(0.01)	0.111**	(0.04)
Puerto_Rico	0.159***	(0.02)	0.251***	(0.04)	0.083***	(0.01)	0.227***	(0.03)
Romania	0.219***	(0.03)	0.378***	(0.05)	0.143***	(0.01)	0.328***	(0.04)
Russia	0.117***	(0.01)	0.059	(0.04)	-0.047***	(0.01)	0.158***	(0.03)
Salvador	0.237***	(0.03)	0.284***	(0.06)	0.196***	(0.02)	0.293***	(0.05)
Singapore	0.184***	(0.02)	0.470***	(0.04)	0.093***	(0.01)	0.523***	(0.04)
Slovakia	0.327***	(0.01)	0.355***	(0.05)	0.223***	(0.01)	0.348***	(0.04)
South_Africa	0.126***	(0.02)	0.300***	(0.03)	0.068***	(0.01)	0.321***	(0.02)
South_Korea	0.177***	(0.01)	-0.198***	(0.04)	0.082***	(0.01)	-0.135***	(0.03)
Spain	0.154***	(0.01)	0.240***	(0.04)	0.030***	(0.01)	0.270***	(0.03)
Sweden	0.062***	(0.02)	-0.072*	(0.04)	-0.026**	(0.01)	0.034	(0.03)
Switzerland	0.209***	(0.01)	0.158***	(0.04)	0.016*	(0.01)	0.127***	(0.03)
Taiwan	0.193***	(0.01)	0.423***	(0.05)	0.043***	(0.01)	0.366***	(0.04)
Thailand	0.199***	(0.02)	0.561***	(0.04)	0.112***	(0.01)	0.647***	(0.04)
Trinidad	0.211***	(0.02)	0.431***	(0.05)	0.122***	(0.01)	0.387***	(0.03)
Turkey	0.293***	(0.01)	0.339***	(0.03)	0.094***	(0.01)	0.402***	(0.02)
Uganda	0.402***	(0.01)	0.185***	(0.04)	-0.124***	(0.02)	0.212***	(0.04)
UK	0.178***	(0.01)	-0.146***	(0.05)	0.092***	(0.01)	-0.095**	(0.04)
Ukraine	0.172***	(0.01)	0.353***	(0.04)	0.039***	(0.01)	0.467***	(0.02)
Uruguay	0.307***	(0.02)	0.252***	(0.04)	0.040***	(0.01)	0.332***	(0.03)
Venezuela	0.265***	(0.01)	0.356***	(0.04)	0.251***	(0.01)	0.373***	(0.02)
Vietnam	0.234***	(0.02)	0.400***	(0.05)	0.122***	(0.01)	0.457***	(0.04)
Constant	0.567***	(0.09)	0.558***	(0.05)	0.561***	(0.06)	0.547***	(0.04)
R-sqr	0.368		0.277		0.405		0.398	
N	37735		36273		38183		38069	

Note: Coefficients are derived from OLS regressions on dummies for the country of origin (CPS) or home country (WVS) of the individual (based on the model in equation 1). The dependent variable is a dummy equal to 1 if the individual lives with his parents. Estimations are run on the youth population, separately for the two genders. Estimations in columns 1 and 3 are run on data from the Current Population Survey where country dummies designate the countries of origin of second-generation immigrants. Estimations in columns 2 and 4 are run on data from the World Values Survey, where country dummies designate individuals' home countries. Controls include marital status, the presence of a spouse and of own children in the household, education level, income per capita and labor market status. Year and fixed effects are equally included in the estimation. Robust standard errors are clustered at the country of origin level. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Source: Current Population Survey (1994-2014), World Values Survey (1989-2014).

Table 1.8: Youth residential emancipation across four generations of immigrants (General Social Survey - GSS)

	(1)	(2)	(3)
	1st&2d generations	3d generation	4th generation
	Coeff./SE	Coeff./SE	Coeff./SE
Immigrant from Eastern Europe	0.067 (0.06)	0.084** (0.03)	-0.007 (0.03)
Immigrant from Southern Europe	0.153** (0.06)	0.122*** (0.03)	0.056* (0.03)
Immigrant from Western Europe	0.058 (0.06)	0.044* (0.02)	0.014 (0.02)
Constant	0.502*** (0.16)	0.584*** (0.09)	0.905*** (0.06)
R-sqr	0.251	0.205	0.206
N	551	1630	4362

Note: First generation immigrants are defined as people who have just immigrated to the US. Second generation immigrants are US-born children of at least one parent who was born abroad, while third generation immigrants are US-born children of parents born in the US, but with at least one grand-parent who was born abroad. The fourth generation immigrant indicator is built by looking at individuals who are considered US citizens (not belonging to first, second nor third generations of immigrants) but still report a different country (than the US) from which their ancestors came and to which they feel the most attached to. In order to maximize the number of observations, the period covered spans from 1972 to 2014. Given the low number of available observations for non-European countries, the estimations only include European immigrants. Similarly, first and second generation immigrants are taken together given the low number of observations for these two groups in comparison to the third and fourth generations. All regressions control for year fixed effects and individual characteristic (education level, labor market status, gender, marital status, etc.). * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Source: General Social Survey (1972-2014).

Table 1.9: Youth participation in the labor market (US)

	Men		Women	
	Coeff.	SE	Coeff.	SE
Argentina	-0.148***	(0.01)	0.045***	(0.01)
Armenia	-0.199***	(0.01)	0.078***	(0.01)
Australia	-0.189***	(0.01)	0.074***	(0.01)
Austria	-0.136***	(0.01)	0.117***	(0.01)
Bangladesh	-0.126***	(0.01)	0.076***	(0.01)
Belgium	-0.106***	(0.02)	0.161***	(0.01)
Brazil	-0.055***	(0.01)	0.138***	(0.01)
Canada	-0.091***	(0.01)	0.132***	(0.01)
Chile	-0.079***	(0.01)	0.109***	(0.01)
China	-0.154***	(0.01)	-0.004	(0.01)
Colombia	-0.057***	(0.01)	0.095***	(0.01)
Czech	-0.178***	(0.01)	0.198***	(0.01)
Denmark	-0.073***	(0.01)	0.112***	(0.01)
Dominican	-0.102***	(0.01)	0.092***	(0.01)
Ecuador	-0.133***	(0.01)	0.097***	(0.01)
Egypt	-0.231***	(0.01)	0.009	(0.01)
Ethiopia	-0.218***	(0.01)	-0.068***	(0.01)
France	-0.057***	(0.01)	0.102***	(0.01)
Germany	-0.093***	(0.01)	0.134***	(0.01)
Ghana	-0.119***	(0.01)	0.186***	(0.01)
Greece	-0.129***	(0.01)	0.157***	(0.01)
Guatemala	0.013	(0.01)	0.118***	(0.01)
Hong_Kong	-0.191***	(0.01)	0.071***	(0.01)
Hungary	-0.127***	(0.01)	0.162***	(0.01)
India	-0.168***	(0.01)	-0.056***	(0.01)
Indonesia	-0.075***	(0.01)	0.107***	(0.01)
Iran	-0.138***	(0.01)	0.021**	(0.01)
Iraq	-0.202***	(0.02)	0.130***	(0.02)
Ireland	-0.117***	(0.01)	0.150***	(0.01)
Italy	-0.068***	(0.01)	0.132***	(0.01)
Japan	-0.147***	(0.01)	0.098***	(0.01)
Jordan	-0.076***	(0.01)	0.061***	(0.01)
Lebanon	-0.120***	(0.01)	0.009	(0.01)
Lithuania	-0.100***	(0.01)	0.116***	(0.01)
Malaysia	-0.044***	(0.01)	-0.024***	(0.01)
Mexico	-0.032***	(0.01)	0.133***	(0.01)
Morocco	-0.018	(0.01)	0.109***	(0.01)
Netherlands	-0.029**	(0.01)	0.135***	(0.01)
New_Zealand	-0.097***	(0.01)	0.265***	(0.01)
Nigeria	-0.134***	(0.01)	0.058***	(0.01)
Pakistan	-0.130***	(0.01)	-0.074***	(0.01)
Palestine	-0.169***	(0.01)	0.088***	(0.01)
Peru	-0.081***	(0.01)	0.105***	(0.01)
Philippines	-0.129***	(0.01)	0.072***	(0.01)
Poland	-0.110***	(0.01)	0.123***	(0.01)
Portugal	-0.002	(0.01)	0.159***	(0.01)
Puerto_Rico	-0.072***	(0.01)	0.103***	(0.01)
Romania	-0.065***	(0.01)	0.054***	(0.01)
Russia	-0.019*	(0.01)	0.036***	(0.01)
Salvador	-0.032***	(0.01)	0.123***	(0.01)
Singapore	-0.072***	(0.01)	-0.219***	(0.02)
Slovakia	-0.145***	(0.02)	0.180***	(0.01)
South_Africa	-0.073***	(0.02)	0.102***	(0.01)
South_Korea	-0.156***	(0.01)	0.013*	(0.01)
Spain	0.007	(0.01)	0.047***	(0.01)
Sweden	-0.118***	(0.01)	0.030***	(0.01)
Switzerland	-0.102***	(0.02)	-0.051***	(0.01)
Taiwan	-0.192***	(0.01)	-0.005	(0.01)
Thailand	-0.149***	(0.01)	0.155***	(0.01)
Trinidad	-0.169***	(0.01)	0.049***	(0.01)
Turkey	-0.122***	(0.01)	0.193***	(0.01)
Uganda	0.036*	(0.02)	0.061***	(0.01)
UK	-0.098***	(0.01)	0.117***	(0.01)
Ukraine	-0.231***	(0.01)	0.104***	(0.01)
Uruguay	-0.042***	(0.02)	0.061***	(0.01)
Venezuela	-0.107***	(0.01)	-0.033***	(0.01)
Vietnam	-0.118***	(0.01)	0.089***	(0.01)
Constant	-2.245***	(0.27)	-2.391***	(0.15)
R-sqr	0.337		0.294	
N	37735		38183	

Note: The dependent variable is a dummy equal to 1 if the individual is employed. The coefficients are derived from an OLS regression on dummies for the country of origin of the individual (based on a model similar to equation 1). Controls include age, age squared, marital status, the presence of a spouse and of own children in the household, education level and income per capita. Year and fixed effects are equally included in the estimation. Robust standard errors are clustered at the country of origin level. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Source: Current Population Survey (1994-2014).

1.7.2 Conceptual framework

Both male and female youth want to maximize the utility derived from their residence status. They thus choose to live or not in the parental household by comparing the utilities associated with these two residence situations. I assume that an individual's utility depends on the time devoted to household chores by other members of his family k which increases the amount of time the individual has for his own leisure. Utility is defined based on the consumption level c , individuals' own private leisure l , the amount of time devoted by others to household-related tasks k and the residence state r . Private leisure $l=1-h-q$ where the total time available to an individual is normalized to 1, h is the labour supply of the individual and q is the amount of time that he is expected to dedicate to household chores. Thus, $b=q-k$ defines the total amount of time an individual actually dedicates to household chores (given that k is done for him by the family, with $k \geq 0$) and k depending on the type of society the individual comes from (with traditional values about gender roles or not).

An individual i 's utility in residence state r is therefore given by

$$u_i(r^e, c^e, h^e, q^e, k_{sg}^e) = r^e + (1 - \alpha)c^e + \alpha(1 - h^e - q^e + k_{sg}^e) \quad (1.5)$$

Individuals maximize their utility function with respect to c , h , b ($b=q-k$) and subject to

$$c + wl = w(1 - q + k) \quad (1.6)$$

where e ($e = p, a, u$) shows whether the individual is living with his parents (p) or he is emancipated from them by living alone (a) or with a partner (u), α is the preference weight for leisure, s is the gender of the person ($s = f, m$), g indicates whether the individual comes from a society with traditional values about gender roles or not ($g = v, nv$) and w is the wage. I assume that $r_i^a > r_i^p$, with $r_i^e \geq 0$, meaning that the individual has a taste for privacy which makes him or her ideally want to live outside of the parental household.

I assume that for both types of societies considered, namely conservative or not when it comes to gender roles, $k_{fg}^e < k_{mg}^e$ meaning that whether individuals live within the parental household or outside of the parental household, other members of the family are expected to perform more housework for young men than for young women; in different words, women are responsible for more unpaid housework than their young male counterparts.

Young people have the choice between three residence statuses: living with parents, living alone or living with a partner. Belonging to a traditional gender roles society has different

implications for men and women when it comes to the amount of housework they have to perform when living in one of these three residence statuses:

1. *Living with parents.*

When they decide to live with parents, men from societies with traditional values about gender roles will be exempted from participation in household chores more than men from societies with less traditional values: $k_{mv}^p > k_{mnv}^p$. On the contrary, less housework will be done for women in these societies than for men.

2. *Living alone.*

When youth move out to live alone, we expect that whether they live in a society with traditional values or not, they will be performing the same amount of housework¹⁷ :

$$k_{sv}^a \simeq k_{snv}^a. \text{ }^{18}$$

3. *Living with a partner.*

When young men move outside of the parental household to live with a partner, we expect that $k_{mv}^u > k_{mnv}^u$ since in societies with conservative views about women's roles, the female spouse will most likely play her traditional role within the household, thus replacing the young men's mother. In more liberal societies, she will be less willing to do so and partners will have to share tasks more.

When young women move out, if they live in a society with traditional values they will benefit from less support from their spouse when it comes to housework than young women from societies with more liberal views on gender roles: $k_{fv}^u < k_{fnv}^u$.

Individuals are indifferent between living outside the parental household ($o = a, u$) or with parents when:

$$u_i(r^o, c^o, h^o, q^o, k_{sg}^o) = u_i(r^p, c^p, h^p, q^p, k_{sg}^p) \quad (1.7)$$

which is equivalent to:

$$r^o - r^p = (1 - \alpha)(c^p - c^o) + \alpha(h^p - h^o) + \alpha(q^p - q^o) + \alpha(k_{sg}^p - k_{sg}^o) \quad (1.8)$$

¹⁷I consider co-habitation with non-relatives to be equivalent to living alone since in such a case, the co-habitants will share the housework and a non-related female co-habitant is unlikely to agree to do all of the housework for her male roommate; the same applies for a non-related male co-habitant.

¹⁸We can actually consider that $k_{sv}^a \simeq k_{snv}^a \simeq 0$ since no housework is provided for them given that they technically live alone.

Since the purpose of this framework is to examine the difference between genders in terms of interaction between amount of time devoted to household tasks and the type of society the individual belongs to, I assume consumption and labour supply to be fixed and not to depend on the type of gender values inherited by the individual. ¹⁹

In the following, I show that women's trade-off between living with parents vs moving out based on the amount of household work performed when they come from a society with traditional values will be much more similar to that of women coming from a society with less traditional values than the equivalent trade-off will be for men. The existence of a difference in the two gender's behavior can be expressed in the following way:

$$(k_{fv}^p - k_{fv}^o) - (k_{fnv}^p - k_{fnv}^o) < (k_{mv}^p - k_{mv}^o) - (k_{mnv}^p - k_{mnv}^o) \quad (1.9)$$

1. *Living alone vs living with parents.*

The gap between the amount of housework provided for men and that for women by their parents is much stronger in societies with traditional values about gender roles than in societies with less traditional values:

$$k_{mv}^p - k_{fv}^p > k_{mnv}^p - k_{fnv}^p \quad (1.10)$$

When they move alone, youth perform the same amount of housework whether they live in a society with traditional values or not:

$$k_{sv}^a \simeq k_{snv}^a. \quad (1.11)$$

Rearranging the two previous equations, this leads to:

$$(k_{fv}^p - k_{fv}^a) - (k_{fnv}^p - k_{fnv}^a) < (k_{mv}^p - k_{mv}^a) - (k_{mnv}^p - k_{mnv}^a) \quad (1.12)$$

2. *Living with a partner vs living with parents.*

In societies with more traditional values about gender roles, even when they live with their parents, women are still expected to contribute to housework in a much more

¹⁹Other papers have focused specifically on the impact of available income and consumption levels on co-residence choices (e.g. Becker et al., 2010; Bentolila et al. 2014, etc.). Besides, there is no reason to believe a priori that differences between consumption levels when living with parents and when living outside of the parental household ($c^p - c^o$) vary between men and women. The interaction between gender values and labour supply has equally been examined by the literature (Fernandez and Fogli, 2009; Giavazzi et al., 2013; Fortin, 2015, etc.).

significant way than men. Therefore, whether they live within the household or with a partner, the amount of household-related activities they do is similar. This translates into a rather similar amount of housework that is provided for them when they live with parents or with a spouse:

$$k_{fv}^p - k_{fv}^u \rightarrow 0 \quad (1.13)$$

In such societies, for men it is also equivalent to live with parents or with a partner to the extent that in both situations they will benefit from a significant amount of housework provided for them. This leads to:

$$k_{mv}^p - k_{mv}^u \rightarrow 0 \quad (1.14)$$

Thus, for both for men and women, living with a partner or with parents results in a similar amount of housework provided for them. However, this is a small amount for women whereas it is a significant one for men. Combined with the preference for privacy, this means that women have actually more incentives to leave the parental household when they come from a society with traditional values about gender roles than men do.

In societies with less conservative values about gender roles we expect that the gap between what parents offer in terms of housework to the young person will still be less important than the gap between what partners offer depending on whether the young person is a male or a female:

$$k_{mnv}^u - k_{fnv}^u > k_{mnv}^p - k_{fnv}^p \quad (1.15)$$

Rearranging the previous two equations, we obtain again that:

$$(k_{fv}^p - k_{fv}^u) - (k_{fnv}^p - k_{fnv}^u) < (k_{mv}^p - k_{mv}^u) - (k_{mnv}^p - k_{mnv}^u) \quad (1.16)$$

Overall, in comparison to women coming from less conservative societies, women from countries with traditional values about gender roles will still perform more housework ($k_{fv}^e > k_{fnv}^e$). But their trade-off between living with parents or not relative to the amount of household work performed will be much more similar to that of women from societies with less traditional values than will the equivalent trade-off be for men:

$$(k_{fv}^p - k_{fv}^o) - (k_{fnv}^p - k_{fnv}^o) < (k_{mv}^p - k_{mv}^o) - (k_{mnv}^p - k_{mnv}^o) \quad (1.17)$$

Chapter 2

Invitation Discrimination and Hiring Discrimination

joint with Pierre Cahuc, Stéphane Carcillo and Marie-Anne Valfort

Abstract

Based on a correspondence study conducted in France, we show that fictitious low-skilled applicants in the private sector are one third less likely to be called back by the employers when they are of North-African rather than French origin. By contrast, the origin of the fictitious applicants does not impact their callback rate in the public sector. We run a survey revealing that recruiters display similarly strong negative discriminatory beliefs towards North Africans in both sectors. We present a model which shows that the absence of differences in callback rates in the public sector across both origins (i.e. no *invitation discrimination*) is compatible, in this context, with stronger *hiring discrimination* in the public sector following the job interview. This result casts doubts on the ability of correspondence studies to detect hiring decisions.

2.1 Introduction

Prejudice and stereotypes are at the core of theories of taste-based (Becker, 1957) and statistical (Phelps, 1972; Arrow, 1973) discrimination. In this paper, we run a correspondence study and put forward a situation in which similar discriminatory preferences and beliefs among recruiters belonging to two different sectors result in very different outcomes in terms of discrimination at the stage of invitation for interviews: one sector discriminates against minority candidates, whereas the other displays similar callback rates across groups. We set out a model

explaining why such a gap in discrimination between the two sectors can arise at the interview stage in absence of *ex-ante* differences in stereotypes and prejudice. This model implies that discrimination at the invitation stage is a poor predictor of discrimination at the hiring stage.

To show this, we focus on the chances of a callback of low-educated¹ candidates of French² vs. North-African³ origin, who apply to the private or the public sector. These populations have been selected because second-generation immigrants of North-African origin face strong labor market discrimination (Cediey and Forony, 2007; Duguet et al., 2010; Algan et al. 2010). The choice of public and private sectors is motivated by potentially large differences in recruitment behavior. Contrary to private sector recruiters, public sector recruiters are generally weakly constrained by profitability requirements. This correspondence study shows that individuals of North-African origin are strongly discriminated against in the private sector, while they are treated equally in the public sector. The average callback rate of our applicants is notably low: for 100 sent applications, they receive an average of 4,5 callbacks in the public sector and of 3,3 callbacks in the private sector. Being of North-African origin leads to a significant drop in the callback rate when individuals apply to private sector vacancies (by about 2 points) but no penalty is associated with ethnicity in the public sector and this finding is robust to the introduction of a variety of controls related to the type of position applied for, employers' size or economic activity. There is no difference in this regard between central government vacancies and local governments' ones, where recruitment procedures may differ.

To understand what drives this discrimination gap between the two sectors, we run a survey on a sample of 1000 public and private sector recruiters representative of those to which our fictitious applications were sent. Survey results indicate that both public and private sector employers express marked discriminatory preferences and beliefs, with only small non-statistically significant differences between the two sectors. Additionally, using data from the French Labor Force Survey, we find that North-Africans are as under-represented among public sector hires as they are among private sector ones, especially when it comes to low-educated youth. These

¹Applicants left high-school without acquiring a degree.

²Candidates of French origin are defined as French citizens with French-sounding first and last names.

³Candidates of North-African origin are defined as French citizens with North-African sounding first and last names. In 2015, North-Africans represent one third of second-generation immigrants in France (INSEE, 2017a) and faced an average unemployment rate as high as 32% over a ten year period following the end of their education (INSEE, 2017b). They are thus one of the most sizable ethnic minority groups in France and in comparison to second-generation immigrants of European origin, they have a poorer labor market performance.

findings are at odds with the absence of differences in callback rates between French and North-African candidates in the public sector.

To reconcile these empirical findings we set out a two-sector model illustrating a situation in which the absence of invitation discrimination does not automatically result in the absence of hiring discrimination. In this model, employers are more akin to invite low quality applicants when the expected returns on interviews are high. However, following the interview, only the best applicant is hired. Insofar as interviews do not allow employers to extract all the necessary information on applicants' productivity, the final selection can be influenced by statistical discrimination. The model shows that although minority applicants can be as likely to get invited for job interviews as majority applicants, their chances to be hired after the interview may be smaller. In this context, a sector which displays *smaller* differences in callback rates between applicants of different origins can display *stronger* hiring discrimination among applicants invited to interviews. This situation typically arises if recruiters have similar discriminatory beliefs in both sectors but if one sector has stronger expected returns from job creation and lower productivity requirements than the other. This situation is precisely the one uncovered by our survey among recruiters which shows that the reservation productivity is lower in the public sector than in the private sector. Therefore the absence of invitation discrimination in the public sector, which likely flows from low profitability requirements, is compatible with significant hiring discrimination. Overall, these results cast doubts on the ability of correspondence studies to detect hiring discrimination in any circumstance. They suggest that correspondence studies should be complemented with other investigation methods.

This paper brings contributions to three strands of the literature on discrimination against racial or ethnic minorities.

First, field experiments seeking to capture discrimination based on racial or ethnic origin have already been conducted in a wide variety of developed and developing countries. They usually find marked differences in callback rates working against minority groups (see OECD, 2014, Bertrand and Duflo, 2016, Neumark, 2018). Strong evidence of invitation discrimination is available in various regional areas (e.g. North America, Latin America, Europe and Oceania), but also for different levels of skills and education, as well as various industries. There is some evidence on the difference in ethnic discrimination between the public and the private sector. In the United-Kingdom (Wood et al., 2009) and Norway (Midtboen, 2012), correspondence studies

have shown that discrimination is less frequent in the public than in the private sector. We complement this literature by showing that lower invitation discrimination in the public sector is compatible with stronger discrimination in that sector following the job interview. Additionally, we provide further empirical evidence that hiring discrimination likely prevails in both sectors. Fougère and Pourget (2004) and Berson (2010) find that workers with a migrant background are under represented in the public sector in France, as in the private sector. Berson (2016) identifies a wage gap between some minority groups (Southern Europeans) and French natives, which is higher in the public sector than in the private sector. Based on the French Labor Force Survey, we show that North-Africans are equally under-represented in the flows of entries in the private and in the public sectors compared with natives.

Second, our survey on prejudice and stereotypes relates to the literature on social values in the workplace. Lyons et al (2006) investigate whether there are identifiable sectoral differences in prosocial attitudes, work values, and organizational commitment among a sample of highly skilled workers. They find only small differences between public, parapublic and private sectors. Similarly, Tonin et al. (2015) show that public sector workers are significantly more prosocial, but that the gap is almost fully explained by differences in the composition of the workforce across the two sectors, in terms of workers' education and occupation. Based on revealed rather than self-declared preferences, Buurman et al. (2012) find no significant effect of belonging to the public sector on altruistic behaviors. To the best of our knowledge, our survey is the first to investigate potential differences in discriminatory preferences and beliefs across sectors. Consistent with previous research, we detect no significant differences between the public and the private sectors.

Third, we provide a theoretical model which highlights the relation between invitation discrimination and hiring discrimination. This relation is difficult to explore empirically. Although audit studies have become popular in the early 1990s (Cross et al.,1990, Turner, Fix and Struyk,1991 and Bendick, Jackson and Reinoso,1994), they have soon been subject to serious criticism. First, despite efforts to match auditors on several characteristics, differences that are potentially critical for the recipients of their applications inevitably remain. Second, auditors obviously know the purpose of the study they are part of. This can lead them to consciously or subconsciously behave in a way consistent or inconsistent with their beliefs about how different groups are treated. Third, audit studies are extremely expensive, which precludes

researchers from generating large samples (Bertrand and Mullainathan, 2004). Following a different approach, Bartos et al (2016) show that invitation discrimination is influenced by beliefs of recruiters but also by the nature of the markets. When acquiring information from resumes is costly, attention is not evenly distributed across applicants. Attention discrimination implies less attention toward the group with the less favorable attributes in cherry picking markets (i.e. highly selective like the labor market) than in lemon-dropping markets (weakly selective like the housing market) for given belief of recruiters. In this setting, discrimination in the selection of applicants can arise even the beliefs among recruiters are the same. We complement this approach by providing a model of the recruitment process which shows that discriminatory behaviors at the invitation and at the hiring stage can be very different: it is possible that individuals of the group which benefits from higher chances of being invited for an interview also have lower chances of being hired following the interview.

The paper is organized as follows. Section 2 presents the correspondence study which shows that North-African people are strongly discriminated in the private sector but not in the public sector. Based on data from a recruiters' survey, section 3 shows that recruiters in the private and public sectors exhibit similar strong negative beliefs about North-African people. This section also emphasizes that hiring decisions of recruiters in the public sector put less weight on financial considerations as well as on expected productivity from potential hires. Section 4 presents a model of recruitment in the private and in the public sector which shows that the absence of differences in callback rates between applicants of different origins is compatible with stronger hiring discrimination of applicants invited to interviews in the public sector.

2.2 Correspondence study

2.2.1 Experimental design

Applicants are built based on those of real applicants, whose profiles could be consulted online and who had similar qualification levels to the ones required for the type of job offers considered in our experiment.

Applicants are identical in all points, with the exception of their ethnicity. They are all French citizens, aged 20 years old. After graduating with a 2 years delay from middle school, they entered a vocational high-school seeking to obtain a professional high-school diploma

(*baccalauréat professionnel*) either in the area of services for the management of places open to the public (*Services de proximité et vie locale, Spécialité :Gestion des espaces ouverts au public*) or of reception and customer relations (*Accueil-relation clients et usagers*). During high-school, they had one summer job as a supermarket employee or a leaflet distributor; this work experience lasted 2 months. They left high-school without acquiring a degree and at the time of their application, they already had one year and a half of unemployment. They all have basic English and computer skills, as well as a driving license. Résumés equally display information on youth's interests and hobbies, chosen so as to remain very general and similar to those of real applicants. Leisure time activities include some volunteering experience, either for a sports association or for an association that organized activities for children. Finally, applicants' home addresses were located in the center of the administrative capital city of the *département* (French administrative division below the region level) in which applications were sent.

The main criteria of differentiation between the fictitious applicants is their ethnic origin: French or North-African. Ethnicity is suggested thanks to the names chosen for the applicants. Individuals with French origin have French-sounding first and last names: *Alexandre Martin*, *Julien Martin* and *Thomas Martin*. North-African individuals have North-African sounding names: *Mehdi Benslimane*, *Mohammed Benslimane* and *Yassine Benslimane*. First names were chosen based on their frequency among real individuals born in 1995⁴, which is the year of birth of our fictitious applicants.

Applications are made to receptionist, clerk and cleaning person job offers between January 2d and July 29th, 2016. The typical application included a résumé, a cover letter and was accompanied by an email message (the Appendix comprises several examples of résumés, cover letters and email messages). Two types of layouts were designed for the applicants, in order to ensure that the callback rate was not related to employers' preferences in terms of layout. For each job offer, a French application and a North African one were sent in consecutive days. The first name of the applicant, the order in which the application would be sent (first or second day since the identification of the offer) and the layout type were selected randomly.

Given the low qualification level of the applicants, only cover letters were adapted to the type of occupations individuals applied for. Job offers were sent to all types of employment contracts, whether subsidized or non-subsidized, in the profit and non-profit sectors. In order to

⁴Source: Insee - Fichier des prénoms (Edition 2011).

identify job offers, the website of the French public employment service, *Pôle Emploi*, was used with priority. Job offers were equally searched for on other websites such as *Indeed*, *Le Bon Coin* or *Météojob*. Applications were sent uniquely by email to the recruiter or to a *Pôle Emploi* counselors when employers' emails were not available. For the type of low-qualified positions sought for by our applicants, *Pôle Emploi* counselors only check that the applicant meets the basic requirements of the job offer, such as experience or education level, before transmitting it to the employer who makes the decision to contact the applicant or not. To avoid detection, it was decided to contact recruiters only once (with one French and one North African application) even if the same employer proposed several job offers in different administrative areas throughout the experiment period.

In total, 3,188 applications were sent, half of them of French applicants and the other half of North African ones to private market ⁵ (hereafter - *private*) and public non-market (hereafter - *private*) job offers. We recorded callbacks to these applications by phone and email, until September 1st, 2016. In order to mitigate the ethical concerns associated with correspondence studies (e.g. deceiving recruiters and wasting their time without their consent), we decided to send an email message to every employer who contacted an applicant either to request additional information or to invite him to an interview. This message thanked the recruiter for his consideration and informed him that the applicant had just accepted a different job offer.

⁵The OECD (2007) defines the private sector as comprising private corporations, households and non-profit institutions serving households. The public sector is defined as comprising the general government sector plus all public corporations including the central bank. In line with these definitions, in our paper, the private market sector includes all entities within the private sector that are driven by a search for profit behavior (e.g. firms), in contrast to the private non-market one which includes entities driven by non-profit objectives (e.g. NGOs). The public non-market sector would all government-related entities whose activities are based on non-profit rationales (e.g. central and local administration). In contrast, the public market sector includes all public sector entities with profit-seeking activities (e.g. state-owned enterprises).

The analysis in this paper excludes private non-market or public market sector entities. To the extent that private non-market and public market sectors combine features that make the financial situation and constraints of agents in these sectors more heterogeneous in comparison to their respective counterparts in the private market and the public non-market sectors, identifying and interpreting discrimination in these two former sectors would be less clear in light of our conceptual framework.

2.2.2 Results

Table 3.2 reports the mean callback rates of our fictitious applicants. Callbacks include both explicit invitations to an interview as well as requests for information.⁶ This average callback rate is notably low: our applicants need to send 100 résumés in order to receive around 4 positive replies. The particularly limited qualifications of our applicants who never finished high-school and barely have any work experience, combined with unfavorable labor market conditions in France (in 2016, the youth unemployment rate was 24.3 %) are most likely responsible for this extremely low response rate. Nevertheless, French applicants obtain higher than average returns to their applications: the mean callback rate is of 4.5 percent for individuals with French origin. When it comes to North-Africans, their performances on the labor market appear to be worse, with a mean response rate of only 3.3 percent. Job applications to the public sector are associated with higher callback rates in comparison to those sent to private sector job offers. These first descriptive figures are in line with our hypothesis that sectors and employment contracts that benefit from substantial public funding seem to be associated with less discriminatory attitudes than those for which labor costs are significantly higher.

In order to examine the effect of belonging to the minority group - North-African - on the probability of callback, the following linear probability model is estimated:

$$y_{ij} = \alpha + \beta_i \mathbf{1}(i) + x_j \gamma_j' + \varepsilon_{ij}$$

where y_{ij} is an indicator variable equal to 1 if applicant of *ethnicity* i receives a callback from job j . A callback is defined as a demand for an interview or a request for additional information. $\mathbf{1}(i)$ is an indicator function equal to one if the applicant is of ethnicity i (French or North-African). x_j is a vector of characteristics of the job which can include the profession, the type of contract (open-ended or fixed-term), the size of the firm, *département* and month fixed effects. ε_{ij} is a residual term. Standard errors are clustered at the job level.

Results in table 2.2 illustrate the presence of discrimination in hiring of North-African candidates but this discriminatory behavior is observed only in the private sector. Having a

⁶Table 2.10 reports results based on a more restrictive definition of the callback, which includes only explicit invitations to an interview (calls for setting interviews are considered a positive answer while demands for further information are null, like the absence of callback). Results are robust to the use of this alternative definition.

Table 2.1: Descriptive Statistics

Dependent variable: Received a callback	Mean	Standard deviation
<i>Résumé attributes</i>		
All applicants	.039	.193
French	.045	.206
North-African	.033	.179
French applying to private sector job	.040	.1896
North-African applying to private sector job	.020	.140
French applying to public sector job	.050	.218
North-African applying to public sector job	.049	.215
<i>Job characteristics</i>		
Cleaning person position	.044	.205
Clerk position	.022	.145
Receptionist position	.050	.219
Job in the public sector	.049	.217
Job in the private sector	.030	.170
Subsidized job in the private sector	.014	.117
Non-subsidized job in the private sector	.032	.177
<i>Employer and Job Descriptive Statistics</i>		
Private	.536	
Public	.464	
Receptionist position	.237	
Clerk position	.291	
Cleaning person position	.472	
Subsidized contract	.277	
Non-subsidized contract	.723	
Open-ended contract	.309	
Fixed-term contract	.691	

Note: The first column of the upper part of the table reports the mean value of the primary dependent variable which is equal to one if the rsum received a callback from the employer. The second column reports the standard deviation of this variable. The bottom part of the table reports the unemployment rate of the commuting zone of the vacant job, the share of market and non-market vacant jobs, the required profession and the type of contracts of vacant jobs.

Table 2.2: Discrimination of North-African Candidates by Sector

	(1)	(2)	(3)	(4)	(5)
	All sectors	Private	Public	Private	Public
North-African candidate	-.011*** .005	-.020*** .006	-.002 .009	-.020*** .006	-.001 .009
Department fixed effects	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Month fixed effects	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Additional controls	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>
Constant (ref: French)	.052*** .016	.063*** .019	.023 .015	.027 .055	.091** .044
N	3, 180	1, 704	1, 476	1, 704	1, 476
Adj-R ²	.043	.098	.084	.109	.112

Note: The dependent variable is a dummy variable equal to one if the application gets a callback. Estimations in columns 4 and 5 also include as controls: the size of the firm, the NACE code for the economic activity of the firm, the type of contrat offered (fixed-term or open-ended) and the occupation applied for (cleaning person, clerk or receptionist). Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

North-African sounding-name decreases the callback rate by 2 percentage points in the private sector (column 2), while no significant difference is made between French and North-African candidates when they apply to public sector job offers (column 3). Ethnicity thus has a sizeable effect on the employment prospects of young minority applicants in France. Results are robust to the introduction of a variety of controls (columns 4 and 5), including the type of position applied for, the sector of economic activity as well as the size of the firm.⁷

Moreover, table 2.3 examines whether the effect of ethnicity in the private sector varies by the type of contract to which the individual is applying, namely subsidized or non-subsidized. North-Africans appear to be discriminated against when applying to private non-subsidized jobs and the effect remains at 7 percent confidence level when the estimation is run through bootstrap on a sample of same size as that of private subsidized offers.⁸ However, there is no

⁷Positive discrimination of North-Africans (the North-African candidate receives a callback and not the French one) is observed in a minority of cases (1,5% of applications). To the extent that we ignore how recruiters assess applications (e.g. whether they examine them as they arrive, or they look at the entire sample of applications before removing the job posting), there is no inconsistency between this observed positive discrimination and the predictions of our model in which French candidates are invited with priority.

⁸Table 2.11 in the Appendix reports results for the same estimation performed on public sector job offers, based on the presence of a hiring subsidy. To the extent that all jobs in this sector are publicly funded, the presence of an additional subsidy should not have any effect on the treatment of North-Africans in the recruitment process in this sector. Our results confirm this hypothesis: in the public sector, no discrimination is observed against North-Africans, whether the contract is subsidized or not.

Table 2.3: Discrimination of North-African Candidates by Sector and Type of Job Offer

	(1)	(2)	(3)	(4)	(5)	(6)
	Private non-subsidized	Private subsidized	Private non-subsidized	Private subsidized	Private non-subsidized (bootstrap)	Private subsidized (bootstrap)
North-African candidate	-.022*** .007	-.009 .018	-.022*** .007	-.009 .019	-.022* .012	-.009 .016
Department fixed effects	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Month fixed effects	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Additional controls	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Constant (ref: French)	.066*** .020	.019 .012	-.027 .075	.122 .084	-.027 .177	.122 .128
N	1, 486	218	1, 486	218	1, 486	218
Adj-R ²	.118	.301	.132	.320	.132	.320

Note: The dependent variable is a dummy variable equal to one if the application gets a callback. All columns include department and month fixed effects. Estimations in columns 3-6 also include as controls: the size of the firm, the NACE code for the economic activity of the firm, the type of contract offered (fixed-term or open-ended) and the occupation applied for (cleaning person, clerk or receptionist). Estimations in columns 5 and 6 are based on a bootstrap with 5000 replications and a sample size of 218, in order to match the sample size of employers from the private subsidized sector. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

significant difference between callback rates of French and North-African candidates who apply to subsidized jobs in the private sector (columns 4 and 6).

2.2.3 Robustness checks

In the public sector, the lack of any discrimination behavior at the invitation for interviews stage may equally result from the specificities of the recruitment process which gives less flexibility to the central administration in hiring decisions than to the local one. Hence, results could be driven by the behavior of central government employers while local ones would be more likely to discriminate since hiring rules are less strict on them. In a similar vein, the lack of any discrimination in the public sector could stem from the political orientation of employers in this sector, whose political views or party allegiances may induce them to discriminate less. In the following, we test these two hypotheses and provide evidence that the absence of discrimination in the public sector is neither the result of more stringent hiring rules in the central government nor to the political views of employers.

Recruitment process in the public sector

Our correspondence study finds that North-Africans are discriminated against in the private sector and not in the public one. The lack of any discrimination of minority candidates in the public sector may also originate in the specificities of the recruitment process in this sector. Budgetary rules in France leave more flexibility in the hiring decisions to local administrations in comparison to central ones; hence, local administrations are likely to have more freedom with respect to the choice of their candidates and thus, be more likely to discriminate than the central government. We examine therefore whether in local administrations discrimination against North-Africans becomes statistically significant.⁹ Table 2.4 reports the main results of this analysis, taking a more extensive and a more restricted definition of local administrations. Irrespective of the definition used, no discrimination behavior can be observed when focusing only on local administrations¹⁰. On the contrary, discrimination at the invitation stage is still present in the private sector when the estimation is run on a bootstrapped sample of similar size to that of local administration employers.¹¹ The lack of discrimination in the public sector, observed in our correspondence study, does not seem to be tributary to the degree of recruitment control in the public sector.

Political orientation of potential employees

An additional concern related to our finding of no discrimination in the public sector is the extent to which recruitment decisions are driven by politically-oriented behaviors. If recruiters in the public sector belong to parties or ideologies that prone openness to foreigners or immigrants, then by coherency with the political discourse of their organization they may be more lenient with respect to the hiring of non-ethnically French individuals. To check for this alternative rationale that may be driving our findings, we examine whether discrimination behaviors in the public sector vary based on the vote share in local elections of the French far-right party

⁹Our sample comprises only 56 observations for central government employers. Hence, no estimation is run on this sample.

¹⁰Results for the extensive definition are robust to the removal of employers belonging to schools (from kindergarten to high-school), universities and hospitals.

¹¹The table reports only the estimation run on a private sector sample similar size to the one based on the restrictive definition of the local administration. The estimation run on a larger sample, similar to that of the extensive definition, delivers similar results.

Table 2.4: Discrimination of North-African Candidates by Sector

	(1)	(2)	(3)	(4)	(5)
	Local	Local	Local	Local	Private
	administration	administration	administration	administration	sector
	(extensive)	(extensive)	(restrictive)	(restrictive)	(bootstrap)
North-African candidate	-.011	-.011	-.011	-.011	-.020***
	.009	.009	.014	.014	.008
Department fixed effects	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Month fixed effects	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Additional controls	<i>no</i>	<i>yes</i>	<i>no</i>	<i>yes</i>	<i>yes</i>
Constant (ref: French)	.021	-.092**	.005	-.013	.027
	.014	.046	.029	.066	.100
N	1, 278	1, 278	508	508	1, 704
Adj-R ²	.105	.131	.178	.228	.109

Note: The dependent variable is a dummy variable equal to one if the application gets a callback. The extensive definition of the local administration includes all public non-market entities that are not considered to be part of the central government, where the central government includes all ministries and devolved State services. The restrictive definition of the local administration is based on the official nomenclature of juridical categories and includes only territorial authorities: municipalities, departments, overseas collectivities and regions. Estimation in column 5 is based on a bootstrap with 5000 replications and a sample size of 508, similar to that of the restrictive definition of the local administration. All columns include department and month fixed effects. Estimations in columns 2, 4 and 5 also includes as controls: the size of the firm, the NACE code for the economic activity of the firm, the type of contrat offered (fixed-term or open-ended) and the occupation applied for (clearing person, clerk or receptionist). Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 2.5: Political orientation and discrimination in the public sector

	(1)	(2)	(3)	(4)	(5)	(6)
	All public sector	Q1	Q2	Q3	Q4	Q5
North-African candidate	-.001	-.010	-.001	.005	.000	-.006
		.031	.030	.022	.026	.016
Controls	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Constant (ref: French)	.091**	.019	.037	-.105	.331*	.108
		.115	.144	.133	.173	.076
Far-right (FN) vote share						
Mean	23.70	10.54	18.38	23.29	28.69	37.68
Min	0.00	0.00	16.35	20.51	25.72	32.05
Max	61.4	16.34	20.49	25.62	31.99	61.4
N	1,476	228	246	282	308	310
Adj-R ²	.112	.418	.419	.370	.325	.243

Note: The dependent variable is a dummy variable equal to 1 if the application gets a callback. QX stands for the number of the quintile of the share of votes received by the FN in the commune of the job offer at the departmental elections in 2015. Mean, Min and Max denote the mean, the minimum and the maximum value of the quintile of the FN vote share at the commune level respectively. The total number of observations is slightly lower compared with the previous tables because the commune was not identified for some job offers. The regressions include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Front National (FN). We use data from the departmental elections of 2015, since these are the most recent local elections prior to our correspondence study and thus enable us to investigate whether in communes where the FN had received less vote shares in the elections, we also observed less discrimination against North-African candidates.

Table 2.5 displays the main results of this analysis.¹² No significant discrimination behavior is present in the public sector in areas where the FN obtained higher voting shares, thus confirming the lack of a relationship between the prevailing political ideology and the discrimination attitudes exhibited by recruiters in our correspondence study. Whether we look at communes where the FN obtained less than 11% of vote shares or at communes where more than 38% of votes went to the far-right, North-African candidates do not appear to be penalized by recruiters in the public sector. The political orientation of potential employers in the public sector does not seem to play a role in explaining the observed discrimination patterns.

¹²When no FN list was present in the elections in a given department, we consider this as a nul vote for the FN. Our results are robust to a definition where we consider the absence of a FN list as missing instead of a nul.

2.3 Stereotypes, prejudice and productivity requirements among recruiters

Our correspondance study finds that there is a strong discrimination against North-African applicants in the private sector but no discrimination in the public sector. To analyze the cause of this difference, we run a survey about the stereotypes and prejudice of recruiters, as well as the profitability requirements in both sectors. The survey indicates that recruiters from the public sector display similar preferences regarding discrimination to those from the private sector. At the same time, private sector recruiters have higher productivity requirements, which is likely to make them more susceptible of making fewer interview invitations to minority applicants.

2.3.1 Evidence from France

The survey investigates whether recruiters from the private and public sectors have different stereotypes and prejudice towards French of North African background (relative to French with no recent immigrant background), which may be at the origin of discrimination gap observed in our correspondance study between the private and the public sector. Survey items are similar to those found in other national or cross-country values surveys,¹³ and are designed to detect the two discrimination types or rationales put forward by the economics literature, namely taste discrimination - that flows from prejudice (Becker, 1957) and statistical discrimination - that flows from stereotypes (Phelps, 1972; Arrow, 1973). Taste based-discrimination items assess whether the respondent would mind if a North-African were appointed as his/her boss or married a close relative and if the respondent believes that the presence in France of North-Africans makes the country a worse place to live. Statistical-based discrimination items focus on whether the respondent believes a new hire will be more easily accepted by colleagues or clients if he/she is French rather than North-African, whether at similar diploma and experience levels a North-African works as hard or as efficiently as a French person (beliefs about the first moment of unobserved productivity), and finally whether the respondent believes that there is more uncertainty about a North-African's ability to work hard or efficiently than about that of a French person (beliefs about the second moment of unobserved productivity).

¹³Some of these surveys are: the European Working Conditions Survey, the World Values Survey, the European Social Survey, etc.

The survey is conducted among 1,054 recruiters from the private and the public sectors, and the sample is representative of the one from our correspondence study in terms of sector, firm size, economic activity and region¹⁴. The target population of the survey included all employers to whom applications were sent in the correspondence study. However, due to the relatively low response rate associated with this type of survey, we complemented the database with additional recruiters so as to survey a sufficiently high number of employers. Around 24% of the surveyed sample is composed of recruiters from our correspondence study¹⁵. Similarly to previous section and for coherence with our model, we restrict the sample of the following analysis to recruiters from the private market (hereafter - *private*) and public non-market (hereafter - *public*) sectors.

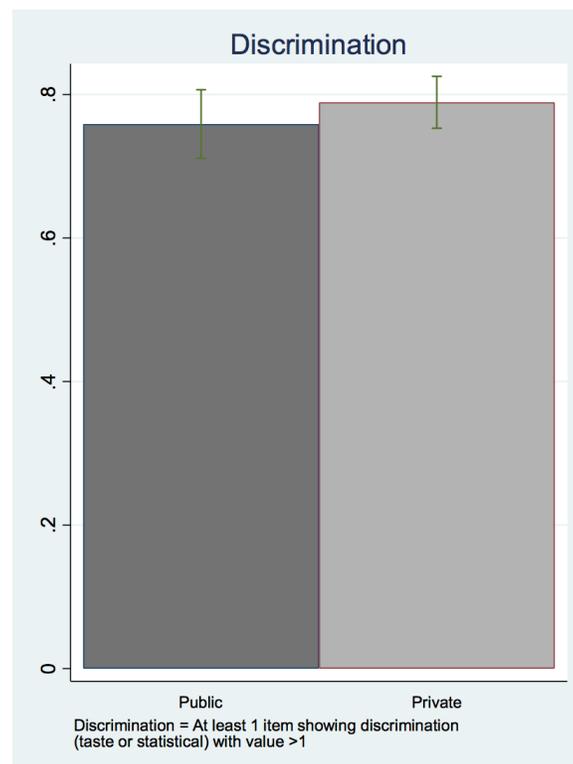


Figure 2.1: Discrimination attitudes of recruiters in the private and public sectors

Figure 2.1 reports the preferences for discrimination, whether taste or statistical, of surveyed attitudes in the private and the public sectors.¹⁶ Recruiters are considered to have discriminatory

¹⁴Table 2.12 in the Appendix provides a comparison between the two samples.

¹⁵This sub-sample is also representative in terms of sector, firm size and region to the that of the correspondence study. Descriptive statistics on this sub-sample are also included in Table 2.12 in the Appendix for comparison purposes with the entire sample of the recruiters' survey and with the correspondence study.

¹⁶Detailed results by survey item are presented in the Appendix.

beliefs when they are biased against French or North African background. More than 75% of recruiters express preferences for discrimination, and no statistically significant difference emerges between private and public employers in this respect. Next, figure 2.2 examines recruiters' beliefs by discrimination type. Statistical discrimination appears to be most recurrent among employers from both the private and public sector, whereas only a minority of recruiters exhibit taste discrimination (slightly more recurrent among private sector employers). The difference between the private and public sectors is not statistically significant for statistical-based discrimination preferences, whereas it is significant for taste-based discrimination ones but these first descriptive comparisons do not take into account any variation in individual or firm-level characteristics.

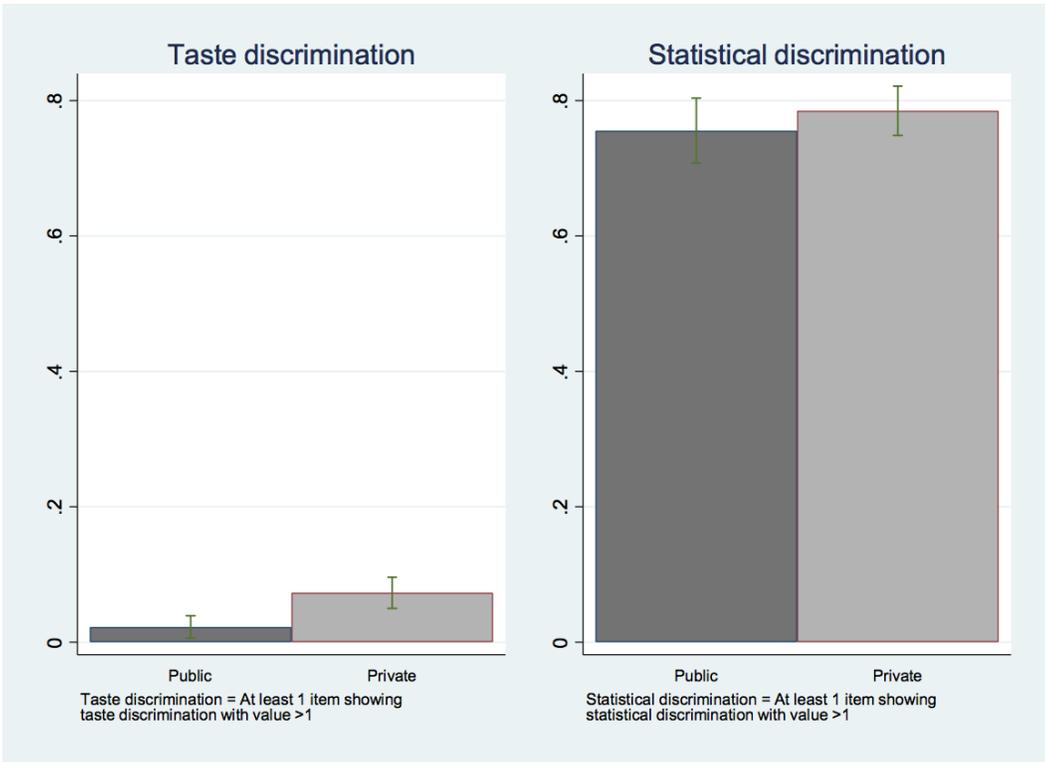


Figure 2.2: Taste-based and statistical-based discrimination of recruiters in the private and public sectors

In line with the predictions of our conceptual framework, we also include questions about the minimum productivity levels expected by employers in the private and public sectors. These questions assess the extent to which a recruiter would accept hiring a candidate to help him even if he is not very efficient, whether work intensity in their firm is high and whether it is

easy for an employee to be absent from work one or two hours for personal reasons. Based on an indicator that cumulates answers to these items, Figure 2.3 displays the difference in productivity requirements between the public and private sector. Private sector recruiters are more numerous to require hard-work from their employees whereas there is more leniency in this respect in the public sector. This difference of means between the private and the public sectors in terms of productivity requirements is statistically significant.

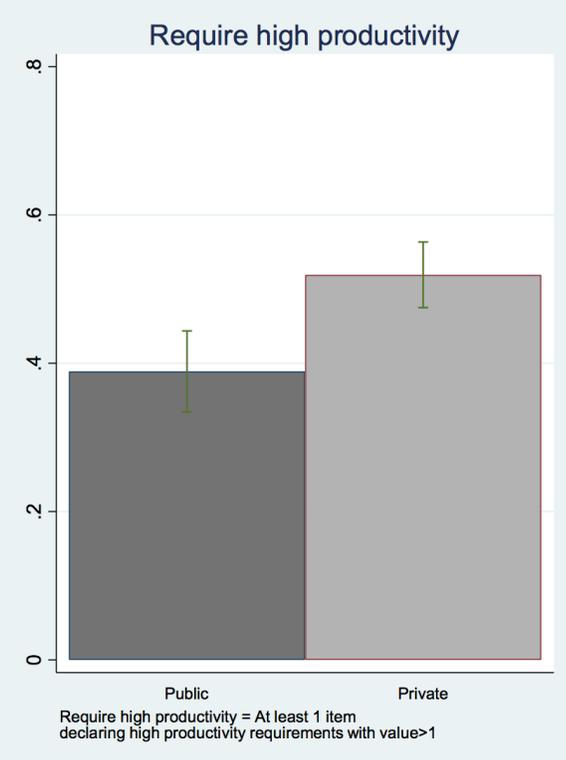


Figure 2.3: Productivity requirements in the private and public sectors

Since statistics reported in figures 2.1 to 2.3 do not account for heterogeneity in individual characteristics, table 2.6 reports results from a linear probability model that controls for such characteristics and examines the relationship between being a private sector recruiter, discrimination preferences and productivity requirements. The dependent variables in the first three columns of table 2.6 are represented by the taste-based, statistical-based and synthetic discrimination indicators built above based on our recruiters’ survey. No statistically significant difference emerges between private and public sector recruiters when it comes to discrimination attitudes, whether these attitudes are taste-based or statistically-based. Estimations control for

Table 2.6: Private sector recruiters, discrimination and productivity requirements

	(1)	(2)	(3)	(4)
	Discriminate by taste	Discriminate statistically	Discriminate (taste/statistical)	Require high productivity
Recruiter from the private sector	.032 .032	-.060 .062	-.066 .062	.249*** .067
Controls	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Constant (ref: recruiter from the public sector)	.004 .108	.941*** .168	.934*** .161	.482* .251
N	804	804	804	804
Adj-R ²	.072	.067	.065	.097

Note: In the first column, the dependent variable is a dummy equal to one if the recruiter discriminates by taste. A recruiter discriminates by taste when he agrees with at least one survey statement that reflects taste-based discrimination, namely whether he minds that a North-African is appointed as their boss or becomes the spouse of a parent, or whether he believes that North-Africans make France a worse place to live in. In the second column, the dependent variable is a dummy equal to one if the recruiter discriminates statistically. A recruiter discriminates statistically when he agrees with at least one survey statement that reflects statistical discrimination, namely whether he believes that a new hire will be more easily accepted by colleagues or clients if he is French rather than North-African, whether at similar diploma and experience levels a North-African does not work as hard or as efficiently as a French person and whether there is more uncertainty about a North-African's ability to work hard or efficiently. In the third column, the dependent variable is a dummy equal to one if the recruiter discriminates either by taste or statistically. In the fourth column, the dependent variable is a dummy equal to one if the recruiter has high productivity requirements. A recruiter has high productivity requirements when he would not recruit a candidate to help him if he is not very efficient, when he believes it is very difficult for an employee to be absent from work one or two hours for family or personal reasons and that work intensity in the firm is very high. Controls include the gender, age, education level and origin of the recruiter, the firm size and the NACE code of the recruiting firm. The origin of the recruiter is defined based on the recruiter's birth place as well as his/her parents' birth place, with individuals born in France from parents who were equally born in France being the reference category. All columns include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

individual characteristics of the recruiter (age, education level, origin and gender) as well as for firm characteristics (size and NACE code), including department and month fixed effects, and thus confirm the descriptive figures presented above according to which recruiters from the private and public sectors display similar beliefs and preferences about discrimination.

However, recruiters in the public and private sector do not have the same expectations in terms of productivity and hard work. In line with the predictions of our model, private sector recruiters appear to have higher productivity requirements from their employees. The coefficient on the difference between private and public sector recruiters is statistically significant at the 1% level.

All in all, table 2.6 illustrates that employers from the private and public sectors appear to

have similar preferences or values regarding discrimination. The gap in discrimination behaviors between the private and the public sector reflected by our correspondence study does not seem to arise because of recruiters in the private sector are more biased against French of North African background than their counterparts in the public sector.

2.3.2 Beyond France

To check the external validity of our survey results, we equally analyzed beliefs about discrimination in the private and public sectors relying on cross-country values surveys. To our knowledge, there are no international surveys focusing on discrimination-related topics that specifically target employers as respondents. We make use therefore of values surveys which enable us to examine preferences of individuals who are working in the two sectors we are interested in (i.e. not specifically recruiters). Since some of the survey items in our questionnaire were based on the European Values Survey, we relied primarily on this latter for our check.¹⁷ We use the last two rounds (2012, 2014) of the European Values Survey in which we identify taste-based discrimination items as well as statistical-based discrimination items. If taste-based discrimination items are similar to the one used in our survey,¹⁸ statistical-based ones assess whether the respondent believes that certain ethnic groups or races are born less intelligent or hard-working.¹⁹ The analysis is based on 1,463 surveyed employees, with one third of the sample made of workers from the public sector, which is consistent with the sector shares from our recruiters' survey.

Similarly to the results of our recruiters' survey, figure 2.4 emphasizes that there is no statistically significant difference between workers from the private and the public sectors for

¹⁷An alternative values survey in which it is possible to distinguish between sector types (market and non-market) is the European Quality of Life Survey. However, survey items from the European Quality of Life Survey focus more on the attitudes towards immigrants and their interaction with local culture at large, and are thus less precise at targetting taste-based and statistical-based discrimination. Based on these items for a sample of 1,101 employees from the public and private sectors, figure 2.11 in the Appendix and regression results available upon request show that there is no statistically significant difference between private and public sector workers when it comes to attitudes against immigrants.

¹⁸The only difference between our taste-based discrimination survey items and those of the ESS is related to the answers scale. In our recruiters' survey, the answer scale is composed of 3 values whereas in ESS, it is composed of 11 values, with answers going from 0 to 10. For coherence with our recruiters' survey, we define taste-based discrimination in ESS considering only extreme answers (0-1-2 vs. 8-9-10) as indicators of clear acceptance or rejection of discrimination.

¹⁹Detailed results by survey item for both taste-based and statistical-based discrimination preferences are presented in the Appendix.

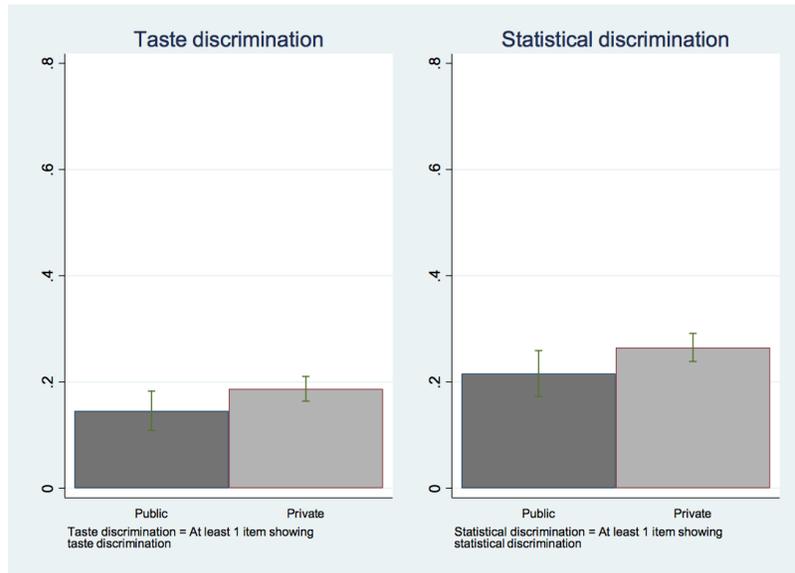


Figure 2.4: Taste-based and statistical-based discrimination of employees in the private and public sectors - European Social Survey

taste-based or statistical-based discrimination preferences. Table 2.7 reports estimation results for a linear probability model that analyses the relationship between working in the private sector and one’s discrimination attitudes. Being a private sector employee has no significant impact on the likelihood to discriminate, whether taste-based or statistical discrimination preferences are considered. Similarly to the analysis performed on our recruiters’ survey data, we build an indicator that considers an individual to discriminate when he expresses either taste-based or statistical-based discrimination attitudes. Results for this indicator are reported in column 3 of table 2.7 and confirm the lack of a relationship between working in the private sector and expressing more pronounced discrimination preferences.

2.4 From invitation discrimination to hiring discrimination

North-Africans face no discrimination at the invitation stage, although public sector recruiters exhibit similar discriminatory preferences to private sector ones. In this section, we present evidence that North-Africans are actually as under-represented in the public sector as they are in the private sector. The conceptual framework we propose helps solving this puzzle by showing

Table 2.7: Discrimination attitudes of public and private sector employees - European Social Survey

	(1)	(2)	(3)
	Discriminate by taste	Discriminate statistically	Discriminate (taste/statistical)
Employee from the private sector	.060 .064	.065 .053	.102 .067
Controls	<i>yes</i>	<i>yes</i>	<i>yes</i>
Constant (ref: employee from the public sector)	.346 .427	.358 .407	.635* .382
N	1, 106	1, 210	1, 210
Adj-R ²	.489	.652	.576

Note: In the first column, the dependent variable is a dummy equal to one if the employee discriminates by taste. An employee discriminates by taste when he agrees with at least one survey statement that reflects taste-based discrimination, namely whether he minds that an immigrant is appointed as their boss or becomes the spouse of a parent, or whether he believes that immigrants make the country a worse place to live in. In the second column, the dependent variable is a dummy equal to one if the employee discriminates statistically. An employee discriminates statistically when he agrees with at least one survey statement that reflects statistical discrimination, namely whether he believes that some races or ethnic groups are born less intelligent or less hard-working. In the third column, the dependent variable is a dummy equal to one if the employee discriminates either by taste or statistically. Controls include the gender, age, education level, origin and occupation (ISCO code) of the employee, as well as the size and the NACE code of the establishment in which he/she works. The origin of the employee is defined based on the employee's birth place as well as his/her parents' birth place, with individuals born in France from parents who were equally born in France as the reference category. All columns include region and year fixed effects. Robust standard errors are reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

that the lack of invitation discrimination does not automatically translate into an absence of hiring discrimination.

2.4.1 North-Africans' under-representation in the public sector

The analysis resulting from our correspondence study indicates the presence of a significant discrimination gap between the public and the private sector: North-African candidates face significantly lower callback rates in comparison to French when applying for private sector jobs, but experience no penalty in the public sector. This implies that hiring and employment rates should also be different between the two sectors. In the private sector, we should observe relatively fewer North-Africans while in the public one, North-Africans should be as represented in employment as native French.

To examine whether North-Africans are as likely as native French to be employed in the French public sector, we use data from the 2014-2016 waves of the French Labour Force Survey . The analysis is restricted to working-age individuals, with French nationality and born in France (similar to our correspondence study fictitious candidates). North-Africans are defined as individuals whose both parents were born in countries from North-Africa (Algeria, Morocco, Tunisia).²⁰ While they represent 3,3% of all individuals (excluding students) aged 16-64 years old in France, North-Africans appear to be under-represented in *both* the public and the private sector (2,9% of all workers in these sectors) in comparison to French (table 2.8). The under-representation of North-Africans among workers of both sectors is even more salient for the younger cohort of the population. The lower panel of table 2.8 reports the share of individuals from different origins among the group of high-school dropouts aged under 30 years old (similar to the group of interest of our correspondence study). North-Africans represent 6,5% of this group but only 4,3% among workers of the public sector and 4,5% among those of the private sector, whereas individuals born from French parents are over-represented among employees in both sectors. These figures are consistent with those of Fougère and Pouget (2004) who equally report lower shares of North-Africans among public sector employees in younger cohorts with no qualification in comparison to older ones.

Columns 4 and 5 examine moreover the case of cleaning persons, one of the occupations

²⁰This implies that individuals who only have one parent born in these countries will be excluded from the definition. To check for the robustness of our results, we also use alternative definitions where origin is defined based on the country of origin of the father or of the mother only. These definitions yield similar results.

present in our correspondence study and which requires very similar sets of skills and tasks to be performed in the public and the private sector. To the extent that skill needs for cleaning persons are very similar in both the private and the public sector, and if only the private sector discriminated, we would expect to see a difference between the two sectors in the share of employed North-Africans. In the group of 16-64 year olds, North-Africans appear to have a slightly better situation in the public than in the private sector. However, among the under 30 without any qualifications, this is no longer the case: North-Africans appear to be under-represented among employed individuals in this occupation as much in the public as in the private sector. All in all, these descriptive statistics emphasize that the situation of employed North-Africans is very similar in both the private and the public sectors, suggesting that hiring discrimination is likely to be as present in the public as in the private sector.

Figures in table 2.8 do not account for individual characteristics that are likely to shape the employment gap between North-Africans and French. To further examine the under-representation of North-Africans in the public and private sector, we perform a regression analysis similar to Algan et al. (2010) who provided evidence for the existence of employment gaps between North-Africans and French. In order to maximise the number of available observations for the analysis of private-public sector differences, we keep both men and women in the estimations. Similar to Algan et al. (2010), regressions control for the age at which the individual left full-time education, a quartic in potential experience, time and department fixed effects; we also include a female dummy.

Results in table 2.9 show that North-Africans are as likely to be employed but also be a new hire in the public as they are in the private sector, reinforcing the evidence brought by the descriptive analysis of a similar under-representation of North-African individuals in both sectors. These results suggest that hiring discrimination is likely to occur in both the public and the private sector, especially as recruiters have similar discriminatory beliefs in both sectors, as shown by our survey of recruiters. The absence of discrimination at the invitation stage, highlighted by our correspondence study, may thus not necessarily lead to an absence of discrimination at the hiring stage. In the following section we provide a model illustrating such a situation.

Table 2.8: Share of North-African workers in the public and private sector in France

	(1)	(2)	(3)	(4)	(5)
	Labour status: All sectors	Labour status: Public sector employee	Labour status: Private sector employee	Labour status: Public sector cleaning person	Labour status: Private sector cleaning person
<i>Aged 16-64</i>					
(1) French	.821	.840	.823	.853	.828
(2) North-African	.033	.029	.029	.034	.027
(3) European	.020	.017	.023	.017	.026
(4) Other African	.005	.003	.005	.002	.005
(5) Asian	.002	.001	.002	.001	.001
(6) Middle-Eastern	.003	.001	.002	.001	.001
(7) Rest of the world	.001	.001	.001	.001	.001
(8) Other	.115	.108	.115	.091	.111
N	619,051	116,138	283,465	9,226	16,830
<i>Under 30, no degree</i>					
(1) French	.724	.770	.763	.809	.815
(2) North-African	.065	.043	.045	.054	.058
(3) European	.014	.008	.020	.022	.021
(4) Other African	.025	.034	.019	.000	.019
(5) Asian	.003	.005	.003	.000	.000
(6) Middle-Eastern	.016	.004	.013	.000	.004
(7) Rest of the world	.003	.004	.001	.000	.000
(8) Other	.150	.132	.136	.115	.083
N	19,917	1,118	7,347	206	532

Note: Individuals of origins (1)-(7) are individuals born in France and whose both parents were born in a country belonging to the group of that origin. North-Africans are thus individuals born in France and whose parents were born in a North-African country. Individuals whose origin is "Rest of the world" are individuals born in France and whose both parents were born in a country not included in those covered by origins (1)-(7). The category "Other" includes all individuals born in France and whose parents come from two different countries of origin (either one born in France and one abroad, or both of them abroad but in two different countries) as well as individuals whose origin is unknown. The sample of "under 30, no degree" comprises all youth aged 16-29 years old, who dropped out of high-school. Students are excluded. Source: Enquete Emploi (2013-2016).

Table 2.9: Employment of North-Africans in the public and private sectors in France

	(1)	(2)	(3)
	Employed in the public sector (ref: in the private sector)	Employed as cleaning person in the public sector (ref: in the private sector)	Hired in the public sector (ref: in the private sector)
<i>Aged 16-64</i>			
North-African candidate	-.013 .012	.040 .033	.045 .028
Controls	<i>yes</i>	<i>yes</i>	<i>yes</i>
Constant (ref: French)	-.324*** .028	.416*** .068	.052* .029
N	334,186	22,173	8,351
Adj-R ²	.050	.059	.039
<i>Under 30, no degree</i>			
North-African candidate	-.039 .043	-.191 .141	.069 .085
Controls	<i>yes</i>	<i>yes</i>	<i>yes</i>
Constant (ref: French)	.033 .133	-.414 .450	.181 .265
N	5,124	600	471
Adj-R ²	.082	.412	.255

Note: Students and retired individuals are excluded from the sample. In column 1, the dependent variable is a dummy equal to 1 if the individual is employed in the public sector and equal to 0 if the individual is employed in the private sector. In column 2, the dependent variable is a dummy equal to 1 if the individual is employed as a cleaning person in the public sector and equal to 0 if the individual is employed as a cleaning person in the private sector. In column 3, the dependent variable is a dummy equal to 1 if the individual is a new hire in the public sector and equal to 0 if the individual is a new hire in the private sector. A new hire is a person whose seniority in the firm/public sector entity is less than or equal to 3 months. Controls include a female dummy, the age at which the individual finished full-time education, a quartic in potential experience, year and department fixed effects. Robust standard errors are clustered at the department level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

2.4.2 The Model

This sub-section presents a model of callback and hiring decisions for different types of applicants on different types of jobs. We consider a discrete time economy with infinite horizon. There are two types of workers who can be employed in two sectors. There is a private sector and a public sector. There are North-African workers and French workers. The size of the population is equal to S and the share of North-African workers is denoted by α . All workers are low skilled. In line with the features of the French labor market of low skilled labor, where there is a high minimum wage, it is assumed that the wage is fixed and identical across jobs. Nevertheless, differences in wage subsidies may imply differences in labor cost across sectors.

In every period, the timing of decisions is as follows.

1/ Employers post vacant jobs and unemployed workers send applications to vacant jobs.

2/ The matches between job openings and applications are determined by an urn-ball matching process where job openings are assimilated to “urns,” and job applications to “balls” tossed at the urns by job seekers (Hall, 1979; Pissarides, 1979; Blanchard and Diamond, 1994). A match occurs when a ball goes into an urn. It is assumed that each job seeker sends one application per period. As job seekers simultaneously apply for jobs not knowing where other job seekers send their applications, some vacancies get no application, while others may get one or more applications. It is assumed that job seekers cannot direct their search either to private or to public job ads because it is costly to sort job types.²¹

3/ Once employers have received the job applications, they choose the applicants invited for a job interview. Organizing an interview costs c . The match-specific output per period of each job applicant is the sum of two independent random variables: $\zeta + \varepsilon$; the realization of ε is observed at the end of the interview whereas the realization of ζ is observed at the end of the period, once the worker has been hired and has worked.

4/ Employers interview the job applicants they have selected.

5/ Employers take the hiring decisions. Hired workers work from the start of the next period.

6/ All jobs are destroyed at the end of each period.

²¹The assumption of random matching in a model with private and public jobs is also adopted in Burdet (2012), Bradley, Postel Vinay and Turon (2016), Albrecht, Robayo-Abril and Vroman (2017), while Gomes (2014) and Quadrini and Trigari (2007) assume directed search. We have chosen the assumption of random matching to account for the limited possibility to sort job types for low skilled individuals whose geographical mobility and job opportunities are small.

The hiring strategy

At the stage of the hiring decision, which intervenes after the interview when the employer to observe the realization of ε , the relevant variable concerning the output of workers is $\mathbb{E}(\zeta) + \varepsilon$, denoted by y . At the stage where employers screen résumés, the realization of ε is unknown. The output $y = \mathbb{E}(\zeta) + \varepsilon$ of a type- $i = a, f$ (“ a ” for African and “ f ” for French) on a job in sector $j = r, u$ (“ r ” for private and “ u ” for public) is a random variable $y \geq 0$ with cumulative distribution function $G_j^i(y)$. It is assumed that the expectation of y conditional on $y > y_j$ where y_j denotes the reservation output in sector j , whose value is determined below, of French applicants is larger than that of North-African applicants in each sector (i.e. $\mathbb{E}(y > y_j | \text{French}) > \mathbb{E}(y > y_j | \text{North-African})$ in each sector). In this context, North Africans face statistical discrimination as employers base their decision to invite applicants to job interviews on their group identity, which correlates with productivity. Hence, atypical individuals from the disadvantaged group can suffer discrimination. The distribution of expected output for the same type of worker can also be different across sectors because employers may value the production differently across sectors. In particular, as there is no price associated to the production of many jobs in the public sector, the value of the production of this sector can be influenced by preferences of the recruiters. It is assumed that the expectation of the after interview non-observed component of output, $\mathbb{E}(\zeta)$, is larger for French applicants than for North-African applicants. This difference can arise for several reasons, including the limited ability of managers to interact effectively with North-African workers, as stressed by Glover et al. (2017) in their study of discrimination of North-African workers in France. This difference implies that North-African workers face statistical discrimination.

Employers first select the applicants they want to interview and then decide whether they are hired after the interview. The optimal strategy of employers is solved backward. Therefore, we start describing the hiring decision of applicants invited for interviews before analyzing the selection of applicants for interviews.

As already mentioned, the interview allows the employer to discover the component ε of the output $\zeta + \varepsilon$ of the applicants who have been selected for a job interview. At the stage of the hiring decision, the employers knows $y = \mathbb{E}(\zeta) + \varepsilon$. The present discounted expected profits of a job which produces $y = \mathbb{E}(\zeta) + \varepsilon$ expected units of output per period in sector j , denoted by

$J_j(y)$, satisfies

$$J_j(y) = y - w_j + \beta V_j \quad (2.1)$$

where β stands for the discount factor, w_j for the labor cost and V_j for the value of a vacant job. Equation (2.1) implies that the value of filled jobs increases with expected output y . Therefore, it is optimal to hire the applicant with the highest expected output if the value of the job is larger when it is filled with this applicant than when it remains vacant. The value of the job is larger when it is filled than when it is vacant (i.e. $J_j(y) \geq V_j$) if y is larger than the threshold value

$$y_j = w_j + (1 - \beta)V_j. \quad (2.2)$$

The cost per interview is denoted by c . Assume that there are n^a North-African applicants and n^f French applicants. The problem of the recruiter is to select the applicants they want to interview. The optimal selection strategy is (see Appendix 2.6.1):

1/ Invite French applicants first and foremost as long as the marginal expected profits of the interview, which decreases with the number of invited applicants, is larger than the interview cost c ;

2/ If all French applicants have been invited, or if there are no French applicants, invite North-African workers as long as the marginal expected profits of the interview is larger than the interview cost c .

This optimal strategy implies a mapping from the number of applicants of each type n^a, n^f to the number of applicants of each type who are interviewed, which is denoted by

$$s_j^f(n^f); s_j^a(n^a, n^f),$$

where $s_j^f(n^f) \leq n^f$ is non-decreasing with n^f and $s_j^a(n^a, n^f) \leq n^a + n^f$ is non-decreasing with n^a and decreasing with n^f . The number of invitations decreases with the labor costs because the reservation output is an increasing function of the labor cost.

The probability of being called back by a recruiter depends on the number of applications of each type he has received. The probability that a type- i , $i = a, f$, worker who applies to a job with n^a and n^f applications gets a recall is equal to $s_j^f/n^f \equiv p_j^f$ for a French applicant and to $s_j^a/n^a \equiv p_j^a$ for a North-African applicant. This probability decreases with the number of applicants.

The probability of being called back is decreasing with the labor costs since increases in these costs reduce the expected profits of interviews and, hence, the number of invitations. On jobs where North-African applicants are invited, (small) increases in labor costs reduce the probability of callback of North-African applicants p_j^a but have no effects on the probability of callback of French applicants, who are invited in priority.

The value of job vacancies

Now that recruiters' hiring decision and optimal selection of applicants have been described, let us analyse the value of job vacancies. To hire workers, firms post vacant jobs. We denote by v the number of vacant jobs. Each vacant job entails search cost. The per period search cost is denoted by h .

From the optimal hiring behavior described above, we can compute the expected value of a vacant job in sector $j = r, u$, which has received n^a North-African and n^f French applications, denoted by $\Pi_j(n^a, n^f)$ (see Appendix 2.6.1). Since the matching between job applications and job openings is determined by the urn-ball model where each job seeker sends one application, the probability that a vacant job gets n^a applications from North-African job seekers is defined by the binomial probability function with parameters αS (the number of trials, since α is the share of North-African job seekers and S is the number of job seekers) and $1/v$ (the probability of success of each trial), denoted by $b(n^a, \alpha S, 1/v)$. Similarly, the probability to receive n^f applications from French workers is defined by the binomial probability function $b(n^f, (1 - \alpha)S, 1/v)$. Therefore, the value of a vacant job in sector j is

$$V_j = -h + \sum_{n^a=0}^{\alpha S} b(n^a, \alpha S, 1/v) \sum_{n^f=0}^{(1-\alpha)S} b(n^f, (1 - \alpha)S, 1/v) \Pi_j(n^a, n^f). \quad (2.3)$$

Job creation

In the private sector, free entry implies that firms create jobs until the value of vacant jobs is equal to zero: $V_r = 0$. From equation (2.3) the free entry condition in the private sector implies that:

$$h = \sum_{n^a=0}^{\alpha S} b(n^a, \alpha S, 1/v) \sum_{n^f=0}^{(1-\alpha)S} b(n^f, (1 - \alpha)S, 1/v) \Pi_r(n^a, n^f) \quad (2.4)$$

In the public sector, jobs are financed by public expenditure. The decisions about public expenditure on public jobs and about recruitments are done by different agents. Usually, the expenditure on jobs for public entities which recruit workers (ministry, school, hospital, municipality...) is determined by the central government or is voted by local councils (in municipalities for instance). Then, each public entity recruits, according to its budget, which sets expenditure target. Usually, local recruiters have very little leeways to determine wages and working conditions. Accordingly, the public the expenditure target often defines, either explicitly or implicitly, the number of jobs that the local recruiter can, or has to, create.

The per period total expenditure on public jobs is denoted by B . It is used to finance the wage of filled jobs, the cost of job vacancies and the cost of job interviews. Therefore, in every period, the public budget constraint is

$$hv_u + cI_u + N_u w_u \leq B, \quad (2.5)$$

where N_u denotes the number of filled jobs, I_u the number of job interviews and v_u the number of vacant jobs. The process of job creation in the public sector implies that the number of public jobs is not always determined by a free entry condition. If the budget constraint is binding, the value of vacant jobs in the public sector is strictly positive and the number of vacant jobs is determined by the budget constraint. This case seems to be generally empirically relevant, insofar as public budget constraints of public entities generally bind, meaning that recruiters would like to create more public jobs than allowed by the public budget.

Labor market equilibrium

The aim of the model is to determine the average callback rates for type- i applicant in each sector j , denoted by \bar{p}_j^i . Since it has been shown that the probability of callback on a job in sector j with n^a and n^f applications is equal to $s_j^a(n^a, n^f)/n^a$ for North-African workers and to $s_j^f(n^f)/n^f$ for French workers, the average callback rates are

$$\bar{p}_j^f = \sum_{n^f=1}^{(1-\alpha)S} b(n^f, (1-\alpha)S, 1/v) \frac{s_j^f(n^f)}{n^f} \quad (2.6)$$

$$\bar{p}_j^a = \sum_{n^a=1}^{\alpha S} b(n^a, \alpha S, 1/v) \sum_{n^f=0}^{(1-\alpha)S} b(n^f, (1-\alpha)S, 1/v) \frac{s_j^a(n^a, n^f)}{n^a} \quad (2.7)$$

These definitions show that the equilibrium values of the average callback rates by type of individual in each sector depend on three endogenous variables: v the number of vacants jobs, y_r the reservation output in the private sector (which appears in $s_r^f(n^f)$ and $s_r^a(n^a, n^f)$), y_u the reservation output in the public sector (which appears in $s_u^f(n^f)$ and $s_u^a(n^a, n^f)$).

Since the free entry condition in the private sector implies that $V_r = 0$, it is clear from equation (2.2) that $y_r = w_r$. Then, the number of vacant jobs v is determined by the free entry condition in the private sector (2.4) where $y_r = w_r$ (note that $\Pi_r(n^a, n^f)$ in (2.4) depends on y_r).²² Therefore, the equilibrium values of the average callback rates in the private sector, \bar{p}_r^f and \bar{p}_r^a , are determined by (2.6), (2.7) and by equations (2.2) and (2.4).

It remains to determine the equilibrium value of the reservation output in the public sector to define the callback rates in that sector.

If the public budget constraint (2.5) is not binding, the equilibrium value of public vacant jobs, V_u , is equal to zero because recruiters create jobs until the point where the value of vacant jobs is equal to zero. Then, like in the private sector, the reservation output is merely equal to the labor cost, which amounts to w_u in the public sector. Let us remark that this situation can occur only if the expected value of filled jobs in the public sector is larger or equal to that of the private sector. If the expected value of jobs is identical in both sectors, the equilibrium value of the number of public jobs can go from zero to the maximum number compatible with the public budget constraint. If the expected value of filled jobs is larger in the public sector and the public budget constraint is not binding, there are only public jobs. The number of public jobs is determined by the free entry condition applying to the public sector. If the public budget constraint is binding, the number of public jobs is determined by the binding public budget constraint, and the total number of jobs in the economy is determined by the free entry condition in the private sector.

Now, we can state the following result:

Result 1: *When the public budget constraint is binding, V_u , the value of public vacant jobs is strictly positive whereas the value of private vacant jobs is equal to zero due to the free entry condition.*

When the public budget constraint is binding, the equilibrium values of V_u and y_u are defined

²²Appendix 2.6.2 shows that this equation defines a unique value of the number of vacant jobs.

by equations (2.2) and (2.3).²³ It is worth noting that the equilibrium values of the callback rates are independent of the expenditure on public jobs, B , even when the budget constraint is binding. Changes in the expenditure on public jobs modify the number of public jobs, and then the number of private jobs, since the total number of jobs is always determined by the free entry condition, but do not change the callback rates. Callback rates depend on the expected values of jobs in each sector, which hinge on the beliefs of employers about the expected output of each worker type and on the labor costs. A drop in labor cost in sector j decreases the reservation output and then increases the callback rate in that sector. A hike in expected output has similar consequences.

Recall behavior in the private sector and in the public sector

Our model is useful to shed light on the cause of differences in callback rates between the private and public sectors. To do so, it is useful to start from the benchmark situation where the distributions of expected output are identical across sectors, i.e. $G_u^a(y) = G_r^a(y)$ and $G_u^f(y) = G_r^f(y)$, and labor costs are also identical. In this case, the value of filled jobs is identical across sectors. As the two sectors post vacant jobs on the same market and thus face the same vacant job filling rate, this implies that the value of vacant jobs is also identical, equal to zero (due to the free entry condition in the private sector), in the two sectors.²⁴ Therefore, the reservation output is identical across sectors.²⁵ This implies that the callback behavior is identical in the two sectors.

Now, if the labor cost is smaller in the public sector than in the private sector, which is the empirically relevant case in our context, the reservation output is smaller in the public sector and the budget constraint is binding.²⁶ This implies, using Result 1, that:

Result 2: *When the distributions of expected output of French and North-African workers are identical in both sectors, i.e. $G_u^a(y) = G_r^a(y)$ and $G_u^f(y) = G_r^f(y)$, and the labor cost is lower*

²³These two equations define a unique value of (V_u, y_u) because (2.2) defines an increasing relation between y_u and V_u and (2.13) a negative relation between these variables.

²⁴Note that the equilibrium value of vacant jobs in the public sector and the private sector are necessarily equal (to zero thanks to the free entry condition) if the wages and output distributions are identical in these two sectors, even if the public budget constraint is binding. The public budget constraint determines the maximum number of public jobs.

²⁵See Appendix 2.6.3.

²⁶See Appendix 2.6.3.

in the public sector, there is less invitation discrimination against North-African applicants in the public sector than in the private sector.

The lower labor costs in the public sector increase the value of filled jobs and of vacant jobs, which boosts job creation in the public sector and induces employers to hire workers who produce lower output. Since the callback rate of job applicants decreases with the reservation output, the lower labor cost in the public sector raises the callback rate in that sector. As remarked above, such an increase in the public sector callback rate reduces the relative difference in callback rates between French and North-African applicants since North-African applicants are called back only if all French applying on the same job have been called back. All in all, this model indicates that the difference between the callback rates of North-African applicants and French applicants should be lower in the sector where the expected returns of filled jobs is bigger when the distributions of expected output of French and North-African workers are identical in both sectors, i.e. $G_u^a(y) = G_r^a(y)$ and $G_u^f(y) = G_r^f(y)$.

In the limit, if the expected returns of filled jobs in the public sector is very large with respect to the cost of interview, the callback rate in the public sector goes to one, meaning that there is no difference in the callback rate between French and North-African applicants in that sector.

Several reasons could explain that the expected returns of filled jobs is higher in the public than in the private sector. First, since there is no price for the output of many jobs which are financed with public expenditure in the public sector, the expected returns of jobs in the public sector is to a large extent the result of the subjective evaluation of recruiters. The fact that there is a demand for job creation which almost always binds the budget constraint in the public sector suggests that recruiters expect high returns in this sector. Second, public jobs are strongly subsidized or are financed in a way which implies that their opportunity cost to the recruiters is low, since the budget allocated to each particular job cannot be used for other purposes by recruiters if the job is not created.

From invitation discrimination to hiring discrimination

It has been shown that callback rates of French and North-African applicants can be close when the expected returns of filled jobs is high relative to the cost of interview even if recruiters

exhibit discriminatory beliefs about North-African individuals. Nevertheless, once workers have been called back, only the best candidate is recruited.

It is important to know whether the sector which discriminates more at the stage of invitations to job interviews also discriminates more at the recruitment stage, once applicants have been interviewed. To see this, it is useful to start again from the benchmark situation in which the distributions of expected output y are identical across sectors, i.e. $G_u^a = G_r^a = G^a$ and $G_u^f = G_r^f = G^f$, and labor costs are also identical so that the callback rates and the hiring rates are identical in both sectors. Let us look at a drop in the labor cost in the public sector, which induces, as discussed above, a fall in the reservation output y_u and an increase in the callback rate in this sector. It can be shown that the fall in the reservation output raises the hiring probability of North-African with respect to that of French applicants if and only if the elasticity of the cumulative distribution of output of North-African applicants at y_u is larger than that of French applicants.²⁷ Accordingly, we can state the following result:

Result 3: *When the distributions of expected output of French and North-African workers are identical in both sectors, i.e. $G_u^a(y) = G_r^a(y)$ and $G_u^f(y) = G_r^f(y)$, and the labor cost is lower in the public sector, there is more hiring discrimination against interviewed North-African job applicants in the public sector than in the private sector if the elasticity of the cumulative distribution of output of North-African applicants at the public sector reservation output y_u is smaller than that of French applicants.*

It is easy to check that the elasticity of the cumulative distribution of output of North-African applicants at the reservation output y_u can be smaller than that of French applicants. For example, this is the case for all values of $y_u > 0$ if y has a log-normal distribution $\log \mathcal{N}(0, 1)$ for North-African workers and $\log \mathcal{N}(\mu, 1)$, $\mu > 0$ for French workers. Results 2 and 3 clearly indicate that comparing callback rates between demographic groups across sectors is not necessarily informative on differences in hiring probability across sectors.

Figure 2.5 illustrates a situation where the distributions of expected output y per worker are identical in the private and in the public sector and where the elasticity of the cumulative distribution of output of North-African applicants at the reservation output y_u is smaller than that of French applicants. In this example, North Africans may be strongly discriminated at the

²⁷See appendix 2.6.4.

invitation stage in the private sector but not in the public sector, because the reservation output is much lower in the public sector than in the private sector. However, at the recruitment stage, North-African applicants invited for interviews have a lower probability to be hired than French applicants in both sectors, because the North Africans have a lower probability to get the highest score at the interview in both sector. Actually, in the example displayed on Figure 2.5, where the output per worker is $\log \mathcal{N}$ distributed, the probability of recruitment is lower for North African applicants invited for interview in the public than in the private sector.

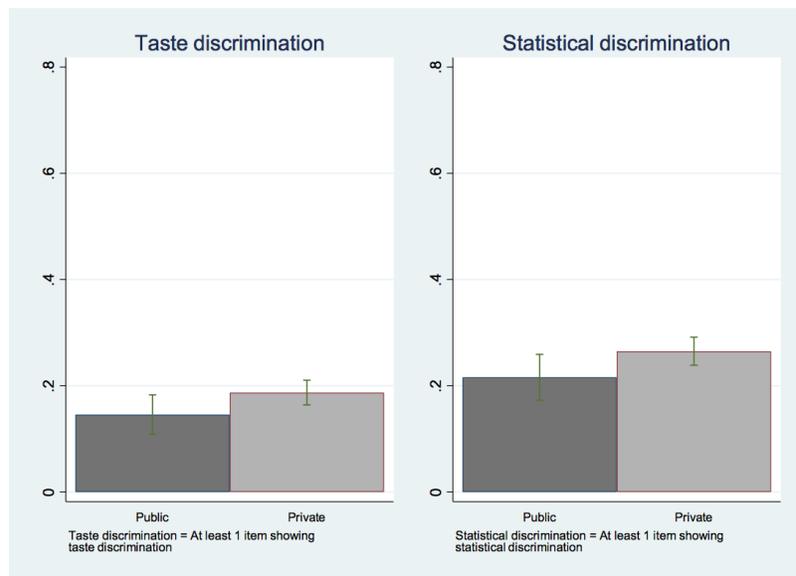


Figure 2.5: The densities of output per worker and the reservation output in the private and in the public sector.

Note: The distributions of output per worker are identical in both sectors. The log of output per worker has a normal distribution with variance equal to one for the North Africans and for the French and a mean equal to 3 for the North Africans and to 4 for the French.

Until now, our analysis has highlighted the impact of differences in labor costs on the decisions to invite to job interviews and on the hiring decisions. It has been shown that lower labor costs in the public sector can induce less invitation discrimination but more hiring discrimination of interviewed applicants in the public sector when recruiters have identical beliefs about expected output of North-African and French applicants in both sectors. But it is worth remarking that other differences across sectors can induce less invitation discrimination associated with more hiring discrimination in the public sector than in the private sector. For instance, assume that the output expected by recruiters is much larger in the public sector than in the private sector,

implying that the cost of interviews is smaller relative to expected output in the public sector than in the private sector. In this situation, the difference in callback rates between French and North African is smaller in the public sector, because more applicants are interviewed in that sector. Nevertheless, this situation is consistent with strong discrimination at the hiring stage in the public sector, possibly bigger than in the private sector. All in all, it is possible that the absence of invitation discrimination in the public sector arises although hiring discrimination, non conditional on being interviewed, is stronger than in the private sector.

2.5 Conclusion

Starting from a correspondence study, this article presents a situation in which similar discriminatory preferences and beliefs among employers in both sectors result in distinct outcomes in terms of discrimination at the stage of the invitation for an interview of minority candidates. We send 3,188 applications to public and private sector job offers in France, half of them of French applicants and the other half of North-African applicants. In the private sector, the callback rate of candidates with North-African origins is significantly lower than that of French, whereas in the public sector there is no penalty associated with ethnicity and callback rates are similar across both groups. At the same time, our survey of recruiters, run on a sample of recruiters representative of the one from our correspondence study, shows that both sectors display marked discriminatory preferences and beliefs. Moreover, using data from the French Labor Survey we provide evidence that North-African low-educated youth are as under-represented among public sector hires and workers as they are among private sector ones. To reconcile these findings, in the last section of the paper, we set out a model explaining how, despite similar stereotypes and prejudice of recruiters, a gap in discrimination can nevertheless appear at the interview stage between the private and the public sector. The model shows that the chances to be hired of minority candidates may be smaller after the interviews, even if they are as likely to get invited for an interview as majority candidates. Such a situation arises if one sector has stronger expected returns from job creation and lower productivity requirements, despite similar discriminatory beliefs in both sectors. It is consistent with the findings of our survey of recruiters which show that productivity requirements are less important in the public than in the private sector. Thus, our model implies that the lack of discrimination at the interview

stage may be compatible with the presence of discrimination at the hiring stage, questioning therefore the ability of correspondence studies to capture hiring decisions.

The analysis in this paper suggests therefore that correspondence studies should be accompanied by other research methods in order to better describe and assess the hiring process, contrasting the invitation for interview stage and the hiring stage. In their audit study of sex discrimination, Neumark et al. (1996) were able to make such a distinction between the interview stage and the job offer one, comparing callbacks when no interaction with a manager had happened to actual job offers received after the fictitious candidate met with a manager. However, most subsequent experimental studies focused either on the invitation for interview stage or on the interview and job offer one, with correspondence studies eventually prevailing in the literature after audit studies came under heavy criticism (Heckman and Siegelman, 1993; Heckman, 1998). Our paper shows that correspondence studies need however to be complemented by additional investigation methods to allow for an accurate description of hiring decisions. Considering the inherent weaknesses of audit studies, an alternative is represented by laboratory experiments, which have been only seldom used until now in the discrimination literature (Fershtman and Gneezy, 2001; Fershtman et al., 2005). In such a setting, participants could be confronted with different productivity requirements (so as to simulate differences between sectors), with some participants representing potential "employers" while others would represent potential "candidates". Discrimination behaviors based on ethnicity (or other criteria) could thus be assessed in a situation that would simulate that of a hiring decision. The potential of such experiments, as complements to correspondence studies, remains therefore to be examined by future research.

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2.6 Appendix

2.6.1 Optimal hiring behavior

This appendix describes the optimal hiring behavior.

Let us consider a recruiter with a vacant job in sector $j = r, u$, who has received n^a North-African applications and n^f French applications. The problem of the recruiter is to select the applicants for a job interview. The cumulative distribution function of $y = \mathbb{E}(\zeta) + \varepsilon$, of North-African and French workers in sector j is denoted by $G_j^a(y)$ and $G_j^f(y)$ respectively.

The assumption that $\mathbb{E}(y > y_j | \text{French}) > \mathbb{E}(y > y_j | \text{North-African})$ implies that French applicants are called first.

When several French workers are interviewed, the recruiter hires the worker who yields the highest expected output, assuming that each interview amounts to an independent draw in the distribution $G_j^f(y)$.

The net expected profit of interviewing $s^f < n^f$ French applicants is²⁸

$$\mathbb{E}[V_j | s^f] = \beta \int_{y_j}^{\infty} J_j(y) d[G_j^f(y)]^{s^f} + \beta [G_j^f(y_j)]^{s^f} V_j - cs^f, \quad (2.8)$$

where V_j denotes the value of a vacant job, $J_j(y)$ is defined by equation (2.1) and y_j is the reservation output defined by equation (2.2). We can also write

$$\int_{y_j}^{\infty} J_j(y) d[G_j^f(y)]^{s^f} = \left[1 - [G_j^f(y)]^{s^f}\right] V_j + \int_{y_j}^{\infty} 1 - [G_j^f(y)]^{s^f} dy. \quad (2.9)$$

To get this expression we integrate $\int_{y_j}^{\infty} J_j(y) d[G_j^f(y)]^{s^f}$ by part, with $J_j(y) = y - w_j + \beta V_j$, which gives

$$\begin{aligned} \int_{y_j}^{y_{\text{sup}}} (y - w_j + \beta V_j) d[G_j^f(y)]^{s^f} &= \left[(y - w_j + \beta V_j) [G_j^f(y)]^{s^f} \right]_{y_j}^{y_{\text{sup}}} - \int_{y_j}^{y_{\text{sup}}} [G_j^f(y)]^{s^f} dy \\ &= (y_{\text{sup}} - w_j + \beta V_j) - (y_j - w_j + \beta V_j) [G_j^f(y_j)]^{s^f} - \int_{y_j}^{y_{\text{sup}}} [G_j^f(y)]^{s^f} dy. \end{aligned}$$

Noting that for a continuous distribution F with support on (a, b) , we can write:

$$b - \int_a^b F(y) dy = a + \int_a^b 1 - F(y) dy$$

²⁸Let us remind that: if $y = \max(x_1, \dots, x_n)$ where x_i , $i = 1, \dots, n$ are n independent random variables with CDF F_i , the CDF of y is equal to $\prod_{i=1}^n F_i(y)$.

we have, since $y_j = w_j + (1 - \beta)V_j$,

$$y_{\text{sup}} - w_j + \beta V_j - (y_j - w_j + \beta V_j) \left[G_j^f(y_j) \right]^{s^f} - \int_{y_j}^{y_{\text{sup}}} G_j^f(y)^{s^f} dy = V_j \left[1 - \left[G_j^f(y) \right]^{s^f} \right] + \int_{y_j}^{y_{\text{sup}}} 1 - \left[G_j^f(y) \right]^{s^f} dy$$

and we get equation when $y_{\text{sup}} = \infty$. Therefore, using equations (2.8) and (2.9), the net expected profit of interviewing $s^f < n^f$ French applicants can be written

$$\mathbb{E} [V_j(y)|s^f] = \beta V_j + \beta \int_{y_j}^{y_{\text{sup}}} 1 - \left[G_j^f(y) \right]^{s^f} dy - cs^f.$$

If $\mathbb{E} [V_j(y)|s^f]$ reaches a maximum for $s^f \leq n^f$, the first order condition for the optimal choice of the number of interviews is

$$\frac{\partial \mathbb{E} [V_j(y)|s^f]}{\partial s^f} = 0 \iff -\beta \int_{y_j}^{\infty} \ln \left[G_j^f(y) \right] \left[G_j^f(y) \right]^{s^f} dy = c$$

The second order condition is satisfied since

$$\frac{\partial^2 \mathbb{E} [V_j(y)|s^f]}{\partial (s^f)^2} = -\beta \int_{y_j}^{\infty} \left(\ln \left[G_j^f(y) \right] \right)^2 \left[G_j^f(y) \right]^{s^f} dy < 0$$

If $\mathbb{E} [V_j(y)|s^f]$ reaches a maximum for $s^f > n^f$, it is worth calling back all French applicants, i.e. $s^f = n^f$. Thus, the optimal value of s^f is defined by

$$s_j^f(n^f) = \left\{ \sup s^f \leq n^f \mid -\beta \int_{y_j}^{\infty} \ln \left[G_j^f(y) \right] \left[G_j^f(y) \right]^{s^f} dy \geq c \right\}. \quad (2.10)$$

If all French applicants are interviewed, the employer can consider inviting North-African applicants. The net expected profit of inviting n^f French applicants and s^a North-African applicants is

$$\mathbb{E} [V_j(y)|s^a, n^f] = \beta V_j + \beta \int_{y_j}^{\infty} 1 - \left[G_j^f(y) \right]^{n^f} \left[G_j^a(y) \right]^{s^a} dy - c(n^f + s^a).$$

The same reasoning as before implies that this net expected profit is a concave function of s^a .

Thus the optimal value of s^a is defined by

$$s_j^a(n^a, n^f) = \left\{ \sup s^a \leq n^a \mid -\beta \int_{y_j}^{\infty} \ln \left[G_j^a(y) \right] \left[G_j^f(y) \right]^{n^f} \left[G_j^a(y) \right]^{s^a} dy \geq c \right\}. \quad (2.11)$$

At this stage we have shown that the optimal invitation strategy of the n^a, n^f applicants whose resumes have been inspected is

1/ Invite French applicants first and foremost as long as the marginal expected profits of the interview (which decreases with the number of invited applicants) is larger than the interview cost c ;

2/ If all French applicants have been invited (or if there is no French applicant), also invite North-African workers as long as the marginal expected profits of the interview is larger than the interview cost c .

This optimal strategy implies a mapping from the number of applicants of each type n^a, n^f , to the number of invitations for an interview of each type, s_j^a, s_j^f .

It is obvious to check that the optimal number of invitations of each type satisfies the following properties: $s_j^f(n^f) \leq n^f$ is non-decreasing with n^f and $s_j^a(n^a, n^f) \leq n^a + n^f$ is non-decreasing with n^a and decreasing with n^f .

The number of interviews s^f and s^a decreases with y_j since the left-hand sides of the second inequalities in equations (7) and (8) decrease with y_j . Since y_j increases with the labor cost w_j , according to equation (2), this implies that the number of interviews decreases with the labor cost. Using the definition of the optimal number of invitations, we get the mapping from the number of applicants of each type (n^a, n^f) to the net expected profit, $\mathbb{E} \left[V_j(y) | s_j^f(n^f), s_j^f(n^a, n^f) \right]$, which is denoted by:

$$\Pi_j(n_j^a, n_j^f) = \beta V_j + \beta \int_{y_j}^{\infty} 1 - \left[G_j^f(y) \right]^{s_j^f} \left[G_j^a(y) \right]^{s_j^a} dy - c \left(s_j^a + s_j^f \right). \quad (2.12)$$

2.6.2 The value of vacant jobs

This appendix defines the value of vacant jobs in the private sector and in the public sector. The expected profit of a vacant job of sector $j, = r, u$, which has received n^a, n^f applications has been defined in Appendix 2.6.1, equation (2.12). Since the matching between job applications and job openings is yielded by the urn-ball model where each job seeker sends one application, the probability that a vacant job gets n^a applications from North-African job seekers is defined by the binomial probability function with parameters αS (the number of trials, as α is the share of North-African job seekers and S is the number of job seekers) and $1/v$ (the probability of success of each trial), denoted by $b(n^a, \alpha S, 1/v)$. Similarly, the probability to receive n^f applications from French workers is defined by the binomial probability function $b(n^f, (1 - \alpha)S, 1/v)$. Therefore,

the value of a vacant job in sector j is

$$V_j = -h + \sum_{n^a=0}^{\alpha S} b(n^a, \alpha S, 1/v) \sum_{n^f=0}^{(1-\alpha)S} b(n^f, (1-\alpha)S, 1/v) \Pi_j(n^a, n^f)$$

where h stands for the cost of vacant job. Using the definition (2.12) of $\Pi_j(n^a, n^f)$ we get

$$V_j = -h + \sum_{n^a=0}^{\alpha S} b(n^a, \alpha S, 1/v) \sum_{n^f=0}^{(1-\alpha)S} b(n^f, (1-\alpha)S, 1/v) \left[\beta \int_{y_j}^{\infty} 1 - [G_j^f(y)]^{s_j^f} [G_j^a(y)]^{s_j^a} + \beta V_j - c(s_j^a + s_j^f) \right] \quad (2.13)$$

The free entry condition in the private sector implies, noting that $y_r = w_r$ when $V_r = 0$:

$$h = \sum_{n^a=0}^{\alpha S} b(n^a, \alpha S, 1/v) \sum_{n^f=0}^{(1-\alpha)S} b(n^f, (1-\alpha)S, 1/v) \left[\beta \int_{w_r}^{\infty} 1 - [G_r^f(y)]^{s_r^f} [G_r^a(y)]^{s_r^a} - c(s_r^a + s_r^f) dy \right] \quad (2.14)$$

This equation defines a unique value of v as a function of the parameters of the model, since b is a decreasing function of v and the envelope theorem implies that the expected profit $\Pi_j(n^a, n^f)$ defined equation (2.12) does not depend on v .

In the public sector, the value of vacant jobs is defined by relation (2.13) where $j = u$ and $y_u = w_u + (1 - \beta)V_u$, which yields

$$V_u = -h + \sum_{n^a=0}^{\alpha S} b(n^a, \alpha S, 1/v) \sum_{n^f=0}^{(1-\alpha)S} b(n^f, (1-\alpha)S, 1/v) \left[\beta \int_{y_u}^{\infty} 1 - [G_u^f(y)]^{s_u^f} [G_u^a(y)]^{s_u^a} + \beta V_u - c(s_u^a + s_u^f) \right] \quad (2.15)$$

This equation defines a unique value of V_u , if it exists, as the derivative of the left-hand side with respect to V_u is equal to one while the derivative of the right-hand side with respect to V_u is smaller than one.

2.6.3 Comparison of the reservation output in the private sector and in the public sector

This appendix shows that the reservation output is lower in the public sector than in the private sector if labor costs are lower in the public sector and if recruiters of the public and the private sectors have identical beliefs about the distributions of output of North-African and French workers. Equation (2.15) can be rewritten

$$V_u = \sum_{n^a=0}^{\alpha S} b(n^a, \alpha S, 1/v) \sum_{n^f=0}^{(1-\alpha)S} b(n^f, (1-\alpha)S, 1/v) \max_{x, s^a, s^f} \left[\beta \int_x^{\infty} (y - w_u + \beta V_u) dG(y) + \beta G(x) V_u - c(s^a + s^f) \right]$$

where $G(y) = [G_u^f(y)]^{s^f} [G_u^a(y)]^{s^a}$. This formula allows us to compute the derivative of V_u with respect to w_u . Using the envelope theorem, we get:

$$\frac{dV_u}{dw_u} = \frac{-\beta \left[1 - \sum_{n^a=0}^{\alpha S} b(n^a, \alpha S, 1/v) \sum_{n^f=0}^{(1-\alpha)S} b(n^f, (1-\alpha)S, 1/v) G(y) \right]}{1 - \beta(1-\beta) \left[1 - \sum_{n^a=0}^{\alpha S} b(n^a, \alpha S, 1/v) \sum_{n^f=0}^{(1-\alpha)S} b(n^f, (1-\alpha)S, 1/v) G(y) \right]}$$

and, therefore, using the definition of $y_u = w_u + (1-\beta)V_u$,

$$\frac{dy_u}{dw_u} = \frac{1 - \beta(1-\beta)}{1 - \beta(1-\beta) \left[1 - \sum_{n^a=0}^{\alpha S} b(n^a, \alpha S, 1/v) \sum_{n^f=0}^{(1-\alpha)S} b(n^f, (1-\alpha)S, 1/v) G(y) \right]} > 0$$

Now, assume that the distributions of output are identical in the private and in the public sector, i.e. $G_u^a(y) = G_r^a(y)$ and $G_u^f(y) = G_r^f(y)$ and that the labor costs are identical in the two sectors. Equations (2.14) and (2.15) and the definition of the reservation output $y_j = w_j + (1-\beta)V_j$ imply that $V_u = 0$ and $y_u = w_u$. Since y_u increases with w_u this implies that $y_u < w_r = y_r$ iff $w_u < w_r$.

2.6.4 Hiring probability of applicants invited to job interview

This appendix computes the hiring probability of type- i applicants on a job in sector j when there are s^a and s^f individuals called back for interview. During the interview, each applicant draws an output level y . The applicant who draws the highest y is recruited. The cumulative distribution function of the maximum output drawn by type- i applicants on a job in sector j is $[G_j^i(y)]^{s^i}$. Therefore, the probability that a type- i applicant is recruited is

$$\begin{aligned} \Pr [m_i > m_{i'} | m_i > y_j] \Pr [m_i > y_j] &= \int_{y_j}^{\infty} [G_j^{i'}(y)]^{s^{i'}} d [G_j^i(y)]^{s^i}, i' \neq i \\ &= \int_{y_j}^{\infty} [G_j^{i'}(y)]^{s^{i'}} s^i g_j^i(y) [G_j^i(y)]^{s^i-1} dy \end{aligned}$$

where $g_j^i(y)$ stands for the derivative of function $G_j^i(y)$, m_i denotes the maximum output drawn by type- i applicants and y_j the reservation output in sector j . This expression shows that the hiring probabilities depend on the cumulative distribution functions and on the number of applicants of each type. The hiring probability for a type- i applicant is equal to the probability

that a type- i applicant is recruited divided by the number of type- i applicants. Thus, we get, from the previous equation:

$$\Pr [\text{hiring for type-}i] = \int_{y_j}^{\infty} \left[G_j^{i'}(y) \right]^{s^{i'}} g_j^i(y) \left[G_j^i(y) \right]^{s^i-1} dy, i' \neq i.$$

From this expression, we can compute the effect of an increase in the reservation output y_j on the difference in the hiring probability between type- a and type- f applicants. We get

$$\frac{\partial [\Pr [\text{hiring for type-}a] - \Pr [\text{hiring for type-}f]]}{\partial y_j} = \left[G_j^a(y_j) \right]^{s^a} g_j^f(y_j) \left[G_j^f(y_j) \right]^{s^f-1} - \left[G_j^f(y_j) \right]^{s^f} g_j^a(y_j) \left[G_j^a(y_j) \right]^{s^a-1}$$

Therefore an increase in y_j raises the hiring probability of North-African with respect to that of French applicants in sector j if and only if

$$\frac{g_j^f(y_j)y_j}{G_j^f(y_j)} > \frac{g_j^a(y_j)y_j}{G_j^a(y_j)}$$

or, to put it differently, if and only if the elasticity of the cumulative distribution of expected output of North-African applicants is smaller than that of French applicants at y_j .

2.6.5 Additional descriptive statistics and estimations

Table 2.10: Discrimination of North-African Candidates by Sector

	(1)	(2)	(3)	(4)	(5)
	All sectors	Private	Public	Private	Public
North-African candidate	-.007*	-.013**	-.000	-.013**	-.000
	.004	.005	.006	.005	.006
Controls	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>
Constant (ref: French candidate)	.024**	.033**	.009	-.013**	.036
	.011	.014	.010	.005	.027
N	3,188	1,708	1,480	1,704	1,476
Adj-R ²	.055	.094	.082	.102	.089

Note: The dependent variable is a dummy variable equal to one if the application gets a callback, where a callback is defined as an explicit invitation to an interview. All columns include department and month fixed effects. Estimations in columns 4 and 5 also include as controls: the size of the firm, the NACE code for the economic activity of the firm, the type of contrat offered (fixed-term or open-ended) and the occupation applied for (clearing person, clerk or receptionist). Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 2.11: Discrimination of North-African Candidates by Sector and Type of Job Offer

	(1)	(2)	(3)	(4)
	Public	Public	Public non-subsidized	Public
	non-subsidized	subsidized	non-subsidized	subsidized
North-African candidate	-.003	-.000	-.003	-.000
Controls	.010	.018	.010	.018
	<i>no</i>	<i>no</i>	<i>yes</i>	<i>yes</i>
Constant (ref: French candidate)	.005	.027	-.012	.136
	.026	.034	.038	.105
N	814	666	810	666
Adj-R ²	.133	.174	.166	.209

Note: The dependent variable is a dummy variable equal to one if the application gets a callback. All columns include department and month fixed effects. Estimations in columns 4 and 5 also include as controls: the size of the firm, the NACE code for the economic activity of the firm, the type of contrat offered (fixed-term or open-ended) and the occupation applied for (cleaning person, clerk or receptionist). Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 2.12: Correspondence study and survey of recruiters - sample comparisons

	(1)	(2)	(3)
	Correspondence study	Survey of recruiters	Recruiters from survey & correspondence study
<i>Gender</i>			
Female	60.55	67.18	66.00
<i>Sector</i>			
Private	67.37	68.12	59.2
Public	32.63	33.88	40.8
<i>Firm size</i>			
0-19	42.36	47.62	49.20
20-249	39.24	43.94	41.60
250-4999	7.69	8.24	8.80
5000+	0.57	0.19	0.40
<i>Economic activity</i>			
A (Agriculture)	0.35	1.33	1.20
B (Industry)	2.02	3.04	2.40
C (Construction)	0.70	1.71	0
D (Trade)	4.26	5.03	4.00
E (Transportation)	1.01	1.23	1.20
F (Accommodation and food services)	7.95	7.69	6.00
G (Other mainly for-profit services)	24.96	23.81	22.40
H (Other mainly non-profit services)	58.74	57.59	62.80
<i>Region</i>			
Aquitaine	9.27	9.30	8.8
Auvergne-Rhône-Alpes	16.39	14.52	20.4
Bourgogne-Franche-Comté	4.79	4.46	4.8
Bretagne	6.06	5.88	7.6
Centre	5.14	4.93	4.8
Corse	0.53	0.57	1.2
Grand Est	7.60	8.54	8.4
Hauts-de-France	5.18	6.64	3.6
Ile-de-France	13.71	15.37	8.8
Languedoc-Midi-Pyrénées	9.40	10.72	9.6
Normandie	5.10	5.31	4.8
Pays-de-la-Loire	6.46	5.98	6.00
Provence-Alpes-Côte d'Azur	10.37	7.78	11.20
Number of observations	4,560	1,054	250

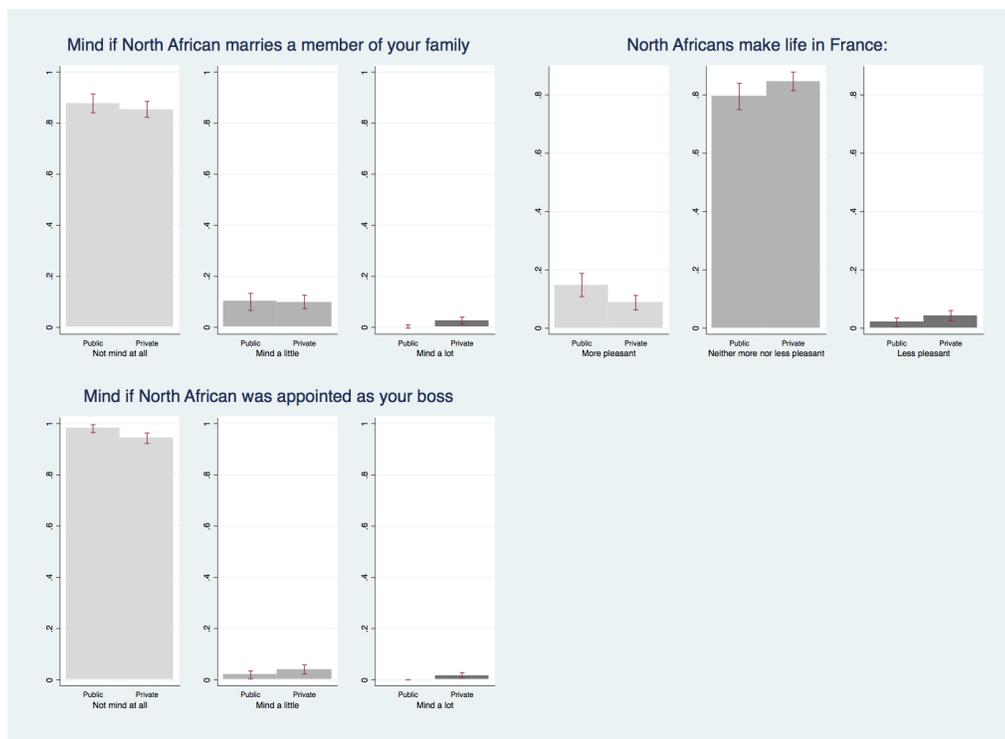


Figure 2.6: Survey of recruiters in the private and the public sectors - detailed items of tasted-based discrimination

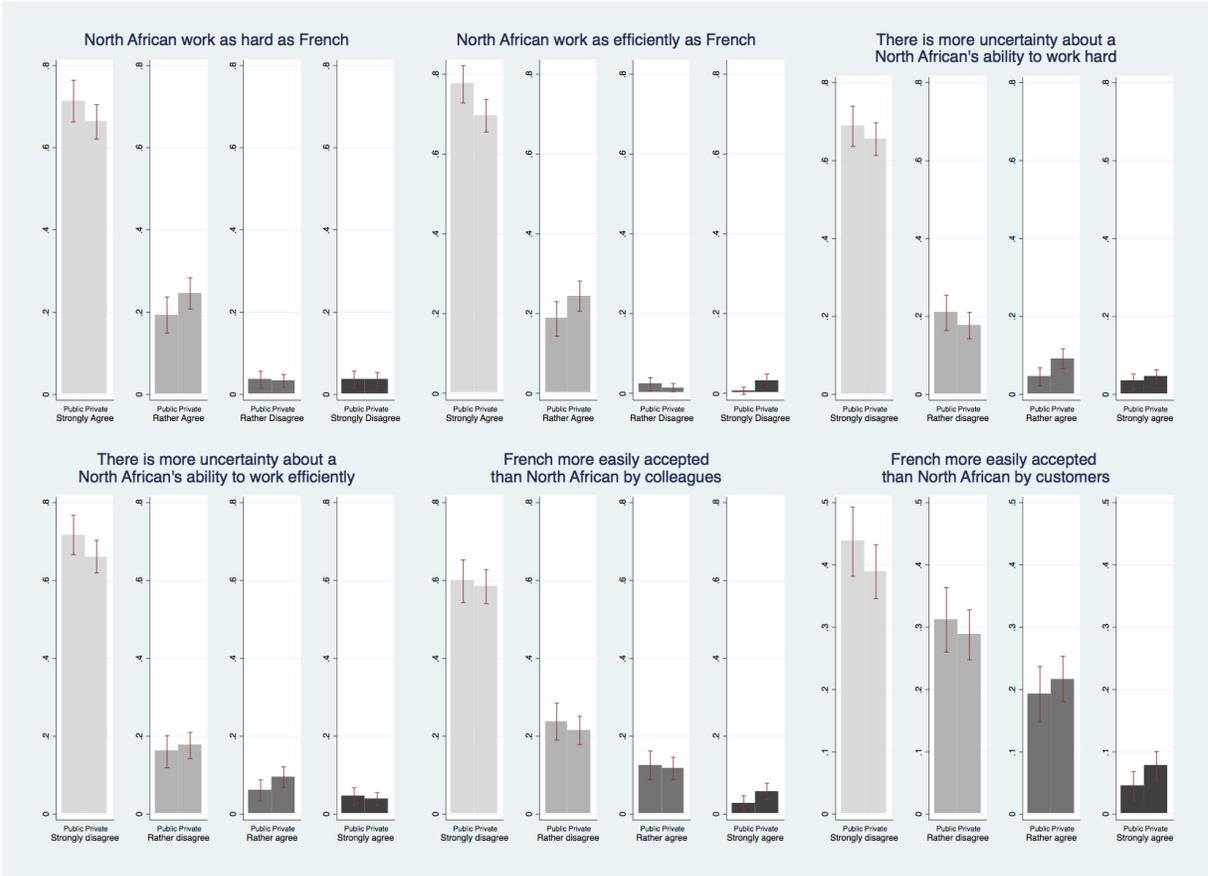


Figure 2.7: Survey of recruiters in the private and the public sectors - detailed items of statistical-based discrimination

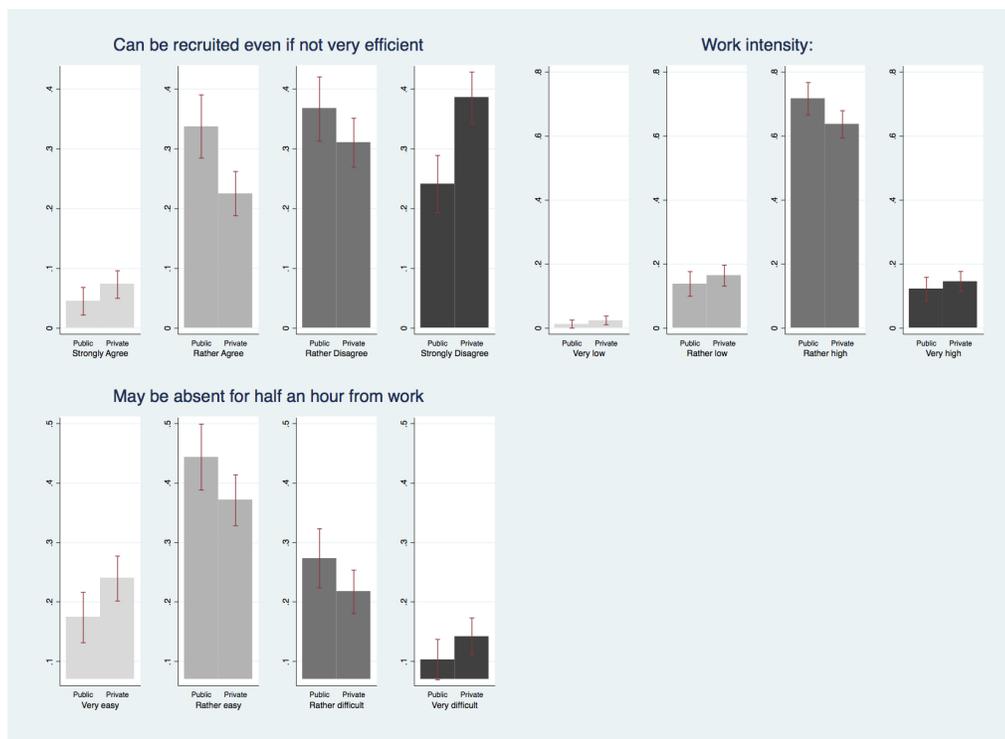


Figure 2.8: Survey of recruiters in the private and the public sectors - detailed items of productivity requirements

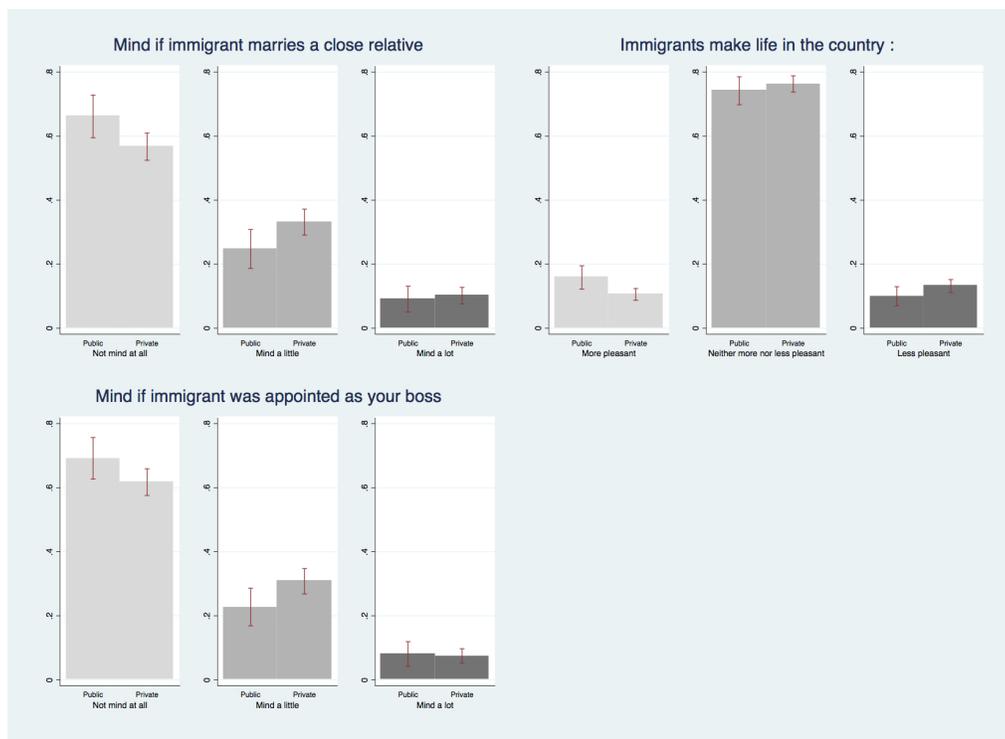


Figure 2.9: Survey of employees in the private and the public sectors - detailed items of tasted-based discrimination, European Social Survey

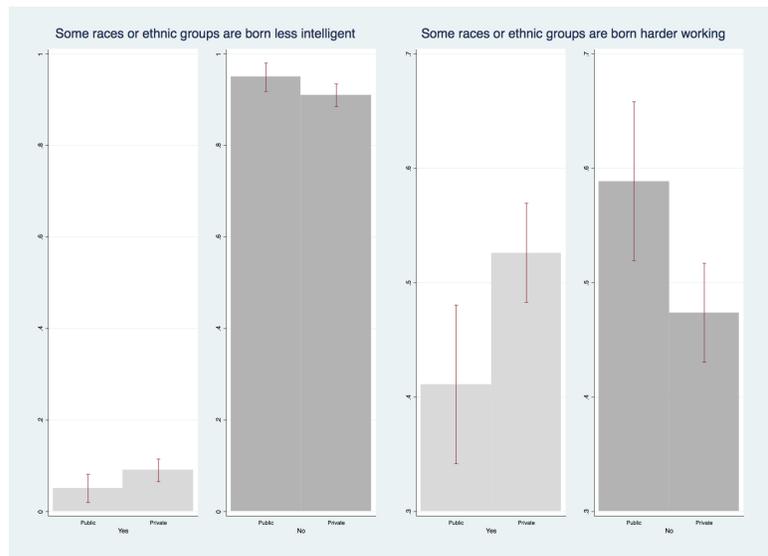


Figure 2.10: Survey of employees in the private and the public sectors - detailed items of statistical-based discrimination, European Social Survey

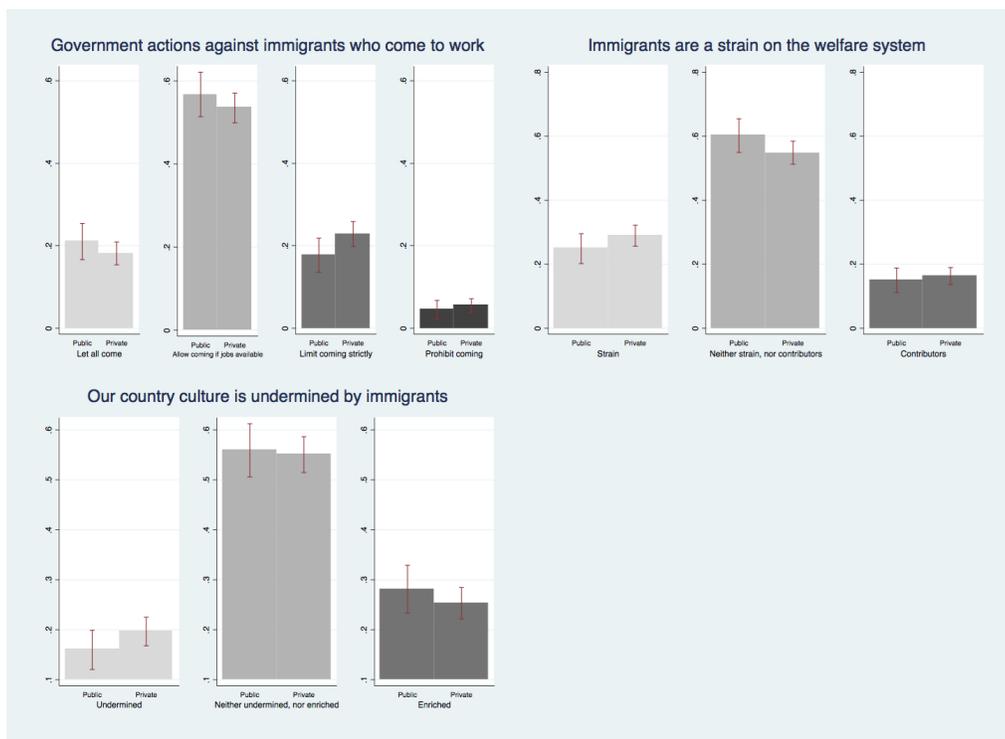


Figure 2.11: Survey of employees in the private and the public sectors - detailed items of attitudes against immigrants, European Quality of Life Survey

Chapter 3

The Difficult School-to-Work Transition of High School Dropouts: Evidence from a field experiment

joint with Pierre Cahuc and Stéphane Carcillo

Abstract

This chapter investigates the effects of the labor market experience of high school dropouts four years after leaving school by sending fictitious résumés to real job postings in France. Compared to those who have stayed unemployed since leaving school, the callback rate is not raised for those with employment experience, whether it is subsidized or non-subsidized, in the market or non-market sector, if there is no training accompanied by skill certification. In particular, we find no stigma effect associated with subsidized or non-market sector work experience. Moreover, training accompanied by skill certification improves youth prospects only when the local unemployment rate is sufficiently low, which occurs in one fifth of the commuting zones only.

3.1 Introduction

Youth unemployment and inactivity is a recurring and persistent problem in many countries with a systematic and growing disadvantage among unskilled youth. In the OECD, the share of youth between 15 and 29 years old neither in employment, education nor training (NEET) was, on average, 15 percent in 2015. High school dropouts are over-represented: they make up a third of NEET youth. This disadvantage tends to be very persistent. Most dropouts remain

out of employment for long periods of time with lasting consequences on their personal and professional pathways (OECD, 2016). Over the last thirty years, many programs have been tried out for disadvantaged youth: intensive job search, hiring credits in the private sector, fixed-term jobs in the public sector, and intensive training. In France, subsidized employment in the non-market sector represents an important lever of employment policy. The latest such program for the hardest-to-place youth was established in 2012, creating 150,000 *Emplois d'avenir* in the non-market sector to help improve the employment prospects of low-skilled youth. Yet, despite the substantial public finance costs associated with the implementation of such measures,¹ little is known about the effectiveness of specific interventions at easing school-to-work transitions among under-educated youth.

This paper evaluates the efficiency of programs for unemployed youth by measuring the chances of getting a callback from employers for high school dropouts with various types of labor market experience. The method involves sending résumés of young people who, over a three year period following their leaving high school, have been either unemployed, unemployed with some temporary work experience, or continuously employed in non-subsidized or subsidized jobs in the market or the non-market sector, with or without a certification of acquired skills. In all cases, young applicants did not finish high school and never got further education before entering the labor market.

We sent 5,388 applications over a period of 6 months in 2016 to actual job offers posted in France for receptionist and gardener positions. This strategy ensures that résumés can vary in one dimension only, which serves to identify the effects of different labor market experiences on the probability of callback. For instance, in our framework, the résumés of individuals who held a subsidized job in the past are identical in all respects to those who held a non-subsidized job. Since some otherwise identical job experiences are subsidized while some are not – which is specified in the résumé by mentioning the label of the well-known² youth employment program in France *Emploi d'avenir* – any significant stigma effect attached to contract subsidization can be identified.³ The same holds for having held a job in the market or non-market sector and

¹Employment policies devote around 15% of resources to subsidized employment programs (Source: Assemblée Nationale, draft Budget Bill for 2017).

²Since 2012, the *Emploi d'avenir* program has been the flagship employment measure of the French government for young people. The government conducted an extensive information and communication campaign to advertise the *Emplois d'avenir*, including press announcements, a dedicated website for youth and employers, factsheets and guides for youth, employers and local operators that deployed the measure, etc.

³One might think that real individuals would not overtly disclose in their CVs that their previous employment

getting a certification of skills or none.

Our results show that few interventions can really make a difference in the likelihood of being contacted by employers. In the absence of training accompanied by a certification of skills, employment periods, whether subsidized or not, in the market or non-market sector, have no impact on the callback rate of young individuals with low qualifications compared with an unemployment spell of the same duration. The hardest-to-place youth in France exhibit a low callback rate in response to their applications – about 8 percent. Employment experience, either in the market or non-market sector, does not appear to increase this rate. As long as work experience is not paired with training and a certification of skills, employers are always insensitive to job spells in the résumé whatever the situation of their local labor market. However, when training providing certified skills is paired with employment, callback rates are significantly increased even if the vocational degree acquired corresponds only to the lowest level of certification available in France. Getting this vocational degree leads to a 42 percent rise in the probability of callback – a substantial effect on the employment prospects of youth with few or no qualifications. Labor market conditions also have a significant impact: the effect of certified training decreases quickly with the local unemployment rate. It is only significant at the 5 percent level in about 20 percent of the commuting zones with the lowest unemployment rates.

Like any other field experiment based on résumés, our results cannot capture all the consequences of employment experience. In particular, we do not take into account the advantages of on-the-job contacts made with employers and colleagues, as well as direct recommendations, which can help job seekers direct their search in a more effective manner. Instead, in our experiment résumés are sent at random to existing job offers.

Our analysis brings contributions to the field experiments literature in the area of labor markets and more specifically résumé audit studies devoted to the effect of labor market experience on the likelihood of receiving a callback for an interview. This approach finds that subsequent work experience eliminates any potential negative effects associated with long-term unemployment spells in the past (Eriksson and Rooth, 2014). But the effects of contemporary

experiences were in subsidized contracts. In order to check for this potential issue that may affect the credibility of our fictitious applicants, we looked at real unemployed individuals' applications available online and found that mentions of subsidized employment such as *Emploi d'avenir* do appear on applicants' profiles. In any case, our paper shows that providing such information has no negative effect on applicants' callback rates.

spells are different. While short spells are not negatively interpreted by employers, long spells impact callback rates negatively (L'Horty et al. 2016 for low to medium skilled jobs in France, Eriksson and Rooth, 2014 for low to medium skilled jobs in Sweden). Randomizing résumés across various unemployment spell durations reveals that the callback rate significantly decreases with the length of a worker's current unemployment spell for young individuals below thirty with college education (Kroft et al. 2013, and Gayad, 2013 for the United States), and that duration dependence is stronger when the local labor market is tighter (Kroft et al. 2013) for those individuals. However, Farber et al. (2016) do not find any relationship between callback rates and the duration of unemployment for mature and older female workers in the United States. These experiments cover different job types, worker types, time periods, countries and regions. It is not clear which combinations of these factors explain the differences in their results. Our study brings fresh information by studying the case of low skilled young workers on labor markets with high unemployment rates. For the low skilled young individuals in our experiment, we find no detrimental effect of past unemployment experience on the likelihood of being called back for an interview. Some experiments have also evaluated the impact of the quality of work experience. For instance, holding temporary jobs may negatively affect the incidence of callback, implying that unemployed workers may be better advised to remain unemployed rather than to compromise on job quality (Farber et al. 2016). Our tests reveal that employment periods on fixed-term contracts do not improve the chances for young and low skilled individuals. They also show that past employment accompanied by certified training significantly improves the callback rate when the local unemployment rate is low, but has no effect when the local unemployment rate is high.

This paper is also related to the literature on the impact of active labor market policies and more specifically, of job creation and training programs. In an influential study, Heckman et al. (1999) look at existing evidence from policy evaluations in the United States and Europe on the effectiveness of training, job search and job subsidy policies. They conclude that public (or non-market) sector job programs yield only a very poor performance in comparison to other interventions, a finding that is also confirmed by Kluve and Schmid (2002). In a study of Swedish activation policies in the 1990s, Sianesi (2002) shows that there is no evidence of impact for temporary public jobs on the subsequent employment probability of the beneficiaries of such programs. Similarly, Hujer et al. (2004) examine the effect of job creation programs, mostly

in the public sector, in Germany and find that two years after the beginning of the programs, participants in such schemes have lower success rates in the labor market in comparison with non-participants. More recently and relying on meta-analysis methods, Card et al. (2010, 2015) show that job creations in the public sector are less efficient than other measures. They show that while training and private sector employment programs have significant effects in the medium and longer runs despite a minor impact in the short-run, public sector employment subsidies seem to be inefficient whatever the time horizon considered for their evaluation. Autor et al. (2016) find no effect of employment programs for low skilled workers on earnings, notably temporary help jobs. Looking at more than 100 studies Kluve et al. (2016) find that youth programs which integrate multiple types of interventions are more likely to succeed. However, they find no significant impact of programs focusing only on job search activities or subsidized employment, as opposed to programs comprising entrepreneurship and skills training which lead to larger effects. Our experiment reveals that neither public sector nor private sector subsidized employment makes a difference for low skilled youth in the French context, characterized by high youth unemployment. Work experience only has an impact when accompanied with training leading to certification. As a matter of fact, training has a stronger impact on the callback rate when associated with non-market work experience than with market jobs, which suggests that employers give more credibility to the training component in the former situation.

The paper is organized as follows. Section 2 presents the situation of high school dropouts in France to justify our experimental setting. Section 3 describes the experimental design. Section 4 presents the main findings. Section 5 concludes.

3.2 Background

Almost ten years after the Great Recession, youth unemployment has not fully receded in France: in 2016, the unemployment rate of young people rose to 24.3% from 18.5% at the beginning of the crisis. Unskilled youth bear most of the burden: French high school dropouts are 3 times more likely than university graduates not to be in employment, education or training (OECD, 2016). As one in six people aged 25 to 34 never finished high school, and never completed any program later on that would give them a certificate equivalent to upper secondary education, the challenge is sizable when it comes to the labor market integration of these youth.

Figure 3.1 displays some of the key characteristics of the labor market situation of high

school dropouts in France in relation to the number of years they have been out of the education system. Employment rates of early school leavers are particularly low, with, on average, less than 1 in 3 of these young people being engaged in an employment contract. A significant share of these youth is thus unemployed: 4 years after they left school, youth who did not complete upper-secondary education face unemployment rates as high as 51%. It is actually among this latter group of young people that the number of subsidized jobs is the most frequent: about one third of youth who do work in this group have a subsidized employment contract.

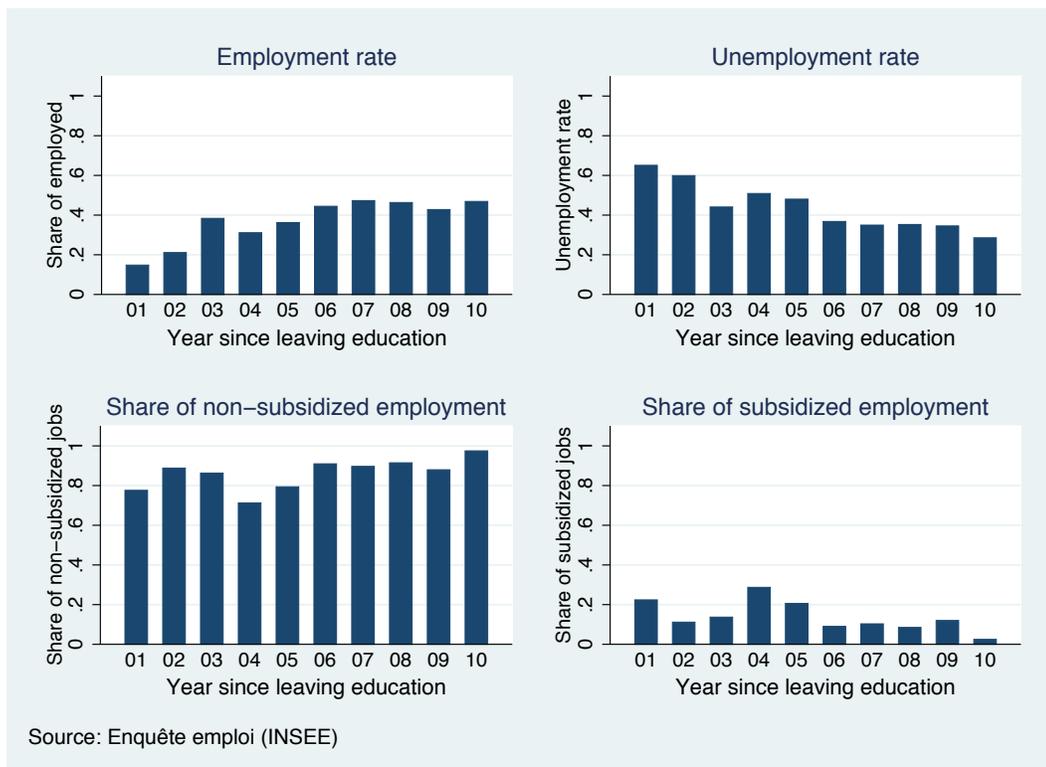


Figure 3.1: Labor market situation of young high-school dropouts in France

Source: Source: Enquête Emploi

Note: Rates are calculated on the population of young people aged 15 to 29 years old who left school without completing upper-secondary education. The share of non-subsidized employment reports the share of jobs other than *Emploi d'Avenir* or a *Contrat Unique d'Insertion* among all jobs occupied by these youth. The share of subsidized employment reports the share of jobs defined as *Emploi d'Avenir* or *Contrat Unique d'Insertion* among all jobs occupied by these youth. Figures are calculated for the first 3 quarters of 2016 for the employment rate and the unemployment rate. The shares of non-subsidized and of subsidized employment are calculated on pooled 2013-2016 data due to the low number of available observations per year for the chosen breakdown in the Labor Force Survey (*Enquête Emploi*).

Indeed, subsidized employment is one of the most frequently used policy tools in France to stimulate employment of youth who are furthest away from the labor market. These young people have access to specific contracts for which hiring is financially supported by the State. The latest such program is the *Emploi d'Avenir* created in 2012 and rapidly made familiar in France given the ample communication campaign unfolded by the government to promote the measure.⁴ It targets youth aged 16 to 25 years old, who are unemployed, have a low level of education, and have been searching for a job for at least 6 months during the previous year. Non-market sector employers benefit from a state subsidy of 75% of the gross minimum wage for up to 3 years, against a 35% one for market employers.⁵ Notably, the program is associated with a training component enabling youth to acquire professional skills and even to get these skills certified. Since its inception, the *Emploi d'Avenir* has been used for hiring more than 300 000 young people (Dares, 2016b). Moreover, youth in France can also benefit from another subsidized employment program, the *Contrat Unique d'Insertion*,⁶ which started in 2010. Similarly to the *Emploi d'Avenir*, the *Contrat Unique d'Insertion* provides benefits both for market (up to 47% of the gross minimum wage) and non-market employers (up to 95% of the gross minimum wage), for contracts that last between 6 and 24 months. For both the *Emploi d'Avenir* and the *Contrat Unique d'Insertion*, non-market employers are the main providers of employment contracts with around 80% of entries into such contracts being in the non-market sector in 2014.

Since it is specifically designed for young people, the *Emploi d'Avenir* has been the core measure of the French government in the area of youth employment in recent years. In contrast, the *Contrat Unique d'Insertion* counts among its beneficiaries all those who encounter substantial professional and social difficulties in finding a job. Thus, in 2014, only 20% of the around 196 000 newly-signed *Contrats Unique d'Insertion* were destined for young people (Dares, 2015) and since the inception of the *Emploi d'Avenir* program, youth are supposed to sign an *Emploi*

⁴A survey conducted among French employers from the Ile de France region in 2013, soon after the launch of the *Emploi d'Avenir*, indicated that more than 60% of surveyed recruiters already had knowledge of the program. Besides, since the majority of *Emploi d'Avenir* contracts are signed in the non-market sector (see below), which includes the French central and local administration, it is beyond doubt that employers from this sector became familiar with the measure from a very early stage.

⁵Individuals employed in *Emploi d'Avenir* jobs are mainly paid the minimum wage, which covers 25% of youth employees below 25 years old in France.

⁶In 2013-2016, among youth aged 15 to 29 years old who benefited from a subsidized employment contract defined as *Emploi d'Avenir* or *Contrat Unique d'Insertion*, 56% were in an *Emploi d'Avenir* (Source: Enquête Emploi).

d'Avenir instead of a *Contrat Unique d'Insertion*. Beneficiaries of *Emploi d'Avenir* contracts are employed full-time, whereas those in *Contrat Unique d'Insertion* can be employed either full or part-time. Most importantly, the provision of training by the employer during the subsidized employment period is an essential feature of the *Emploi d'Avenir* program, whereas training requirements are more lax when it comes to the *Contrat Unique d'Insertion*. Market sector employers who make use of the *Contrat Unique d'Insertion* are not expected to train the new hire, while non-market sector ones only need to deliver one training activity. Conversely, training provision is mandatory for all types of employers who sign an *Emploi d'Avenir* : training activities must be specified by the employer, together with the local public employment service, 3 months after the beginning of the contract; and an assessment is carried out yearly in order to determine if the employer fulfilled its commitments. The enhanced training effort associated with *Emploi d'Avenir* contracts is confirmed by the number of training recipients among the beneficiaries of this contract: in 2014, one year after the beginning of their contract, 3 in 4 youth who benefited from an *Emploi d'Avenir* had already followed one course.⁷ In contrast, among *Contrat Unique d'Insertion* recipients,⁸ only 46% had received training in the non-market sector and only 23% in the market sector (Dares, 2016a). In the light of these specific features, we decided to use the *Emploi d'Avenir* and not the *Contrat Unique d'Insertion* as a signal for the subsidized employment experience of the young applicants in our experiment.

Figure 3.2 therefore reports the share of subsidized employment jobs by the main profession categories in France for youth aged 15 to 29 years old. Gardening, teaching and reception/secretariat related jobs display the highest shares of young people who benefit from an assisted contract. This means that employers in these professions are more used to recruiting under such contracts and to receiving applications from youth who have professional experience in a subsidized job. Combined with the evidence presented above on the significant size of the high school dropouts group in France, this decided us to focus our experiment on high school dropouts who have had gardening or reception jobs under subsidized contracts and then apply for employment in these professions. We leave teaching aside since high school dropouts are excluded from subsidized employment programs for teaching. Also, by selecting gardening and

⁷However, not all youth get their skills certified. Among youth who began an *Emploi d'avenir* contract between October 2013 and March 2014, only 47% received a skill certification. The share of youth offered skill certification was 52% for *Emploi d'avenir* contracts in the non-market sector and 35% for similar contracts in the market sector (Dares, 2016a).

⁸The following shares include both youth and non-youth beneficiaries.

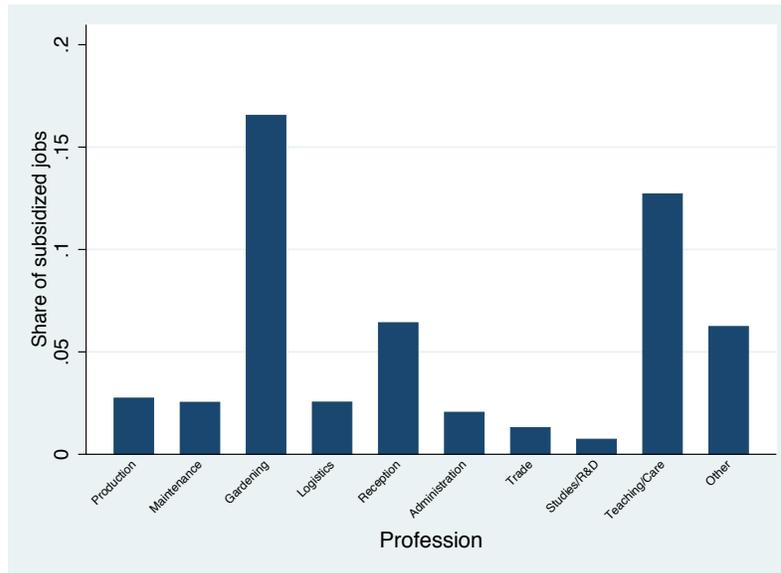


Figure 3.2: Share of subsidized jobs by profession
Source: Source: Enquête Emploi

Note: Rates are calculated on the population of young people aged 15 to 29 years old, on pooled 2013-2016 data due to the low number of available observations per year for the chosen breakdown in the Labor Force Survey (*Enquête Emploi*). Subsidized jobs are either *Emploi d’Avenir* or *Contrat Unique d’Insertion*.

reception activities, we ensure that we cover both jobs that require specific technical skills as well as jobs that focus more on social interactions.⁹

3.3 Experimental design

In order to build the résumés, we rely on similar profiles, found online, of French unemployed youth with varied labor market experience.

3.3.1 The fictitious applicants

The applicants are identical in all points, with the exception of their employment status and type of contract in the past 3 years. Their names and surnames were chosen from among those most commonly encountered in the French population, in order to avoid signaling any type

⁹When it comes to the external validity our experiment, while gardening is indeed a more restricted profession, receptionists can be found across all types of sectors and industries. Hence, we may consider that our results are not swayed by the specific characteristics of a given industry. Furthermore, Figure 2 shows that the share of subsidized employment among young receptionists is not especially high (6.42%).

of ethnic origin or religious affiliation. Two types of occupations are sought by these young people in their job search: gardener and receptionist. These occupations were selected given their high frequency among the subsidized jobs, *Emplois d'avenir*, offered both in the market and non-market sectors (see section above).

The applicants are young men who graduated from middle school with a delay of 2 years and then went to a vocational high school in order to obtain a vocational high school diploma.¹⁰ They all attended high school for 2 years without acquiring a degree, left school when they were 19, and then experienced one year of unemployment. Following that year, they faced different labor market experiences. They could benefit either from an *Emploi d'Avenir* or from a non-subsidized employment contract for a duration of 3 years, or they were again unemployed over the same 3-year duration but engaged in part-time volunteering activities related to their field of occupation over the same 3-year duration. To ensure that employers received similar messages about the intrinsic motivation of both the unemployed and employed candidates, youth with an employment profile also displayed a volunteering experience on their CV.

At the time of the experiment, fictitious applicants are all 24 years old and have been searching for jobs since their previous employment or volunteering activity ended, in December 2015. They all have an elementary level in English as well as some basic knowledge of IT softwares related to document creation or Internet use. Finally, all CVs include some information about their main hobbies or leisure activities, which remain very standard and similar to other CVs that can be found online.

CVs are tailored such that applicants' profiles correspond to the specificities of the two types of occupations chosen for this study: gardener and receptionist. For the gardener profile, youth attended a vocational high school in which they prepared for a vocational high school diploma in the area of landscaping (*Travaux paysagers*). This degree trains youth to prepare a landscaping site under the supervision of a hierarchical superior as well as to implement the different techniques necessary for the creation and maintenance of such sites. For the receptionist profile, they prepare for a vocational high school diploma in the area of services for the management of places open to the public (*Services de proximité et vie locale, Spécialité :*

¹⁰In France, vocational baccalaureate corresponds to level IV based on the National Classification of Levels of Training. On this scale, a Bachelor degree corresponds to level III whereas a PhD corresponds to level I. For international comparison purposes, the French vocational baccalaureate corresponds to level 3 of ISCED 2011 whereas early childhood education is at level 0 and a PhD at level 8 on the same scale.

Gestion des espaces ouverts au public). This high school track prepares youth to greet and assist the public in places receiving a large number of customers or users, as well as to maintain the premises and to look after the general safety of people who are present. Apart from this, for both profiles, the previous 3-year employment or volunteering experience of the subjects likewise matches the type of occupation they are applying to, namely gardener or receptionist, and they also display specific competencies in a “Skills” section on their CV that is directly related to this occupation.

For each occupation, we build a total of 12 CV types that can be differentiated based on the type of professional trajectory individuals had in the previous three years. The primary level of differentiation between our applicants is whether they were employed or unemployed throughout that period.

The employed youth profiles

Among the employed, we distinguish between those who were in a subsidized vs. a non-subsidized job, working in the market vs. the non-market sector. The employers’ names, both in the market and non-market sectors, correspond to real employers who hired youth in *Emploi d’avenir* contracts. Besides, since the subsidy associated with the *Emploi d’avenir* is granted on the condition that recruiters provide training (certified or non-certified), we introduced an additional level of differentiation based on whether our fictitious applicants acquired skill certification in the form of a vocational degree (*titre professionnel*) of level V during their 3-year employment period. A vocational degree, which corresponds to the lowest level in the National Classification of Levels of Training, is delivered by the Ministry of Employment and certifies that its holder possesses the skills, abilities and competencies required to exercise a given profession. It can be obtained after a vocational training course or through the accreditation of prior learning (*Validation des Acquis de l’Expérience* or VAE). Thus, 8 employed youth profiles emerged from the combination of contract type, sector and acquisition of a vocational degree during the 3-year employment period as described in table 3.1. As explained above, both employed and non-employed youth profiles feature volunteering experiences on their CVs, hence volunteering does not constitute an additional level of differentiation.

Table 3.1: Employment experience of applicants

	Market				Non-Market			
Subsidized job	Yes	No	Yes	No	Yes	No	Yes	No
Vocational degree	Yes	No	Yes	No	Yes	No	Yes	No

Note: this table displays the employment experience of applicants who could have worked either in the market or in the non-market sector, on a job either subsidized or non-subsidized and who could get either a vocational degree or no vocational degree.

The unemployed youth profiles

We create 4 types of unemployed profiles allowing us to distinguish between youth who were unemployed for the entire 3-year period and youth who were engaged in one, two or three short fixed-term contracts throughout this period. The comparison of these profiles with those of youth having benefited from an “Emploi d’avenir” enables us to specify whether even very short employment spells in the private sector are preferable to subsidized jobs when it comes to their impact on youths’ subsequent employment opportunities. The short fixed-term contracts chosen are in occupations not related to the two main occupations youth apply for (gardener and receptionist) and each of these short-term job spells lasts only two months. A first one is that of sales person (*animateur de vente*) in a home furnishings retail chain whereas the second one is that of team member (*équipier polyvalent*) in a fast-food chain. For youth who had three of these short fixed-term contracts, two of them are with the same company and on the same position; this was considered to be an indicator that the company considered the individual to be good enough to be hired a second time for the same job. All individuals with an unemployment profile were engaged in a volunteering activity that lasted three years in their main occupational field. Thus, youth applying for a gardener position were volunteering as gardeners for a local gardening association whereas those applying for a receptionist position were volunteering as receptionists in a sports association. This resulted in 4 unemployed profiles:

- unemployed with no short fixed-term contract experience in the previous three years.
- unemployed with one short fixed-term contract experience in the previous three years.
- unemployed with two short fixed-term contract experiences in the previous three years.
- unemployed with three short fixed-term contract experiences in the previous three years.

The variation in the previous employment status, contract type, sector and acquisition of a vocational degree following training during this last job for the employed youth, and that in the number of short fixed-term jobs performed by the unemployed youth results in twelve applicant profiles:

(2 contract types) x (2 sectors) x (2 training) + (4 unemployment paths).

3.3.2 The applications

Applications are sent to job offers from all French *départements* (administrative areas) between the 15th of February and the 15th of July, 2016. Applicants' addresses were chosen to be in the center of whatever city serves as the administrative capital (*préfecture*) of the department in which the job was posted, in order to ensure that candidates live relatively close to their potential future job.

Job offers for both occupations are identified using mainly the website of *Pôle Emploi*, the French public employment service. A few private job search websites, such as *Le Bon Coin* or *Indeed* are also used in case the number of offers available on the *Pôle Emploi* platform is too low on a given day. Applications are sent only when it is possible to contact the recruiter directly by email, hence job offers issued by temporary work agencies or other intermediaries are not considered. It was also decided to send applications when a *Pôle Emploi* email address was mentioned in the job offer instead of the employer's. This choice was motivated by the fact that for the type of low-skilled positions sought by the applicants in this study, *Pôle Emploi* counselors only check that the candidate fulfills the general prerequisites of the job offer (level of education, experience, etc.) before forwarding the application to the employer who makes the actual recruitment decision. Finally, the same recruiter could never be contacted more than once, even if it posted different job positions in different *départements* throughout the entire experiment period. The same applied for offers providing only a *Pôle Emploi* counselor email address: only one application could be sent for each *Pôle Emploi* email address.

The typical application included a résumé and a cover letter, and was accompanied by a short email message (see the Appendix for the different types of résumés, cover letters and email messages based on individuals' profiles). In order to ensure that callback rates are not due to employers' preferences for a given presentation style of résumés and cover letters, two types of layout were created for all applications. Two applications were sent for each job offer,

but on consecutive days: one with an employed profile and one with an unemployed profile. The name of the applicant, the application profile (employed or unemployed), layout type and day of application (first or second day since the identification of a job offer) were all selected at random. In total, 5 388 applications were sent throughout the entire period, half of them corresponding to unemployed profiles and the other half to employed profiles. Overall, there are on average 674 applications per unemployed profile and 337 per employed profile.

Callbacks to job applications were received by email as well as by phone, since candidates had distinct phone numbers that varied according to their names. Email addresses and phones were checked regularly until the 5th of September, 2016, when the last recruiter responses were recorded. When recruiters provided a positive answer to an application by inviting the applicant to an interview or requesting additional information about the application, an email (see Appendix 3.6.3) was sent in order to thank the recruiter and inform him that the applicant had signed an open-ended contract with a different employer.

3.4 Results

The mean callback rates are reported in Table 3.2, while Table 3.3 provides information regarding the characteristics of applications. Callbacks include both explicit invitations to interviews as well as requests for additional information. As a robustness check, we present in Appendix 3.6.1 results based on a more restrictive definition of the callback rate that confines callbacks to explicit invitations to an interview.

About three quarter of the applications are in the market sector. The average callback rate for all types of applicants is low at 8 percent. Applicants who were employed on subsidized non-market jobs and who got a vocational degree at the end of their employment spell get the highest callback rate, equal to 12.5 percent. Unemployed workers who occupied 3 two-month temporary jobs during their three-year unemployment period get the lowest callback rate, equal to 5.4 percent.

To analyze the experimental data, we estimate the following linear probability model:¹¹

$$y_{ij} = \alpha + \beta_i \mathbf{1}(i) + x_j \gamma'_j + \varepsilon_{ij}$$

¹¹To address concerns about non-linear effects that can arise when the average callback rate is low, we report results replacing the OLS (linear probability) model with a Probit model in Appendix 3.6.2. The Probit results show that the estimated marginal effects are very similar to the OLS results.

Table 3.2: Callback Rate Descriptive Statistics

<i>Dependent variable: Received callback for interview or information request</i>	Mean	Std. deviation
<i>Résumé attributes</i>		
All applicants	.080	.271
Unemployed, no job experience at all	.070	.256
Unemployed, 1 temporary job	.079	.270
Unemployed, 2 temporary jobs	.074	.263
Unemployed, 3 temporary jobs	.054	.226
Employed, market, subsidized, certified skills	.108	.311
Employed, market, non-subsidized, certified skills	.072	.260
Employed, market, subsidized, no certified skills	.079	.256
Employed, market, non-subsidized, no certified skills	.083	.277
Employed, non-market, subsidized, certified skills	.125	.331
Employed, non-market, non-subsidized, certified skills	.103	.304
Employed, non-market, subsidized, no certified skills	.069	.254
Employed, non-market, non-subsidized, no certified skills	.068	.253
<i>Job characteristics</i>		
Gardener position	.115	.319
Receptionist position	.044	.206
Job in the non-market sector	.110	.313
Job in the market sector	.071	.257
Job in the public sector	.128	.334
Job in the private sector	.073	.261

Note: The first column of the table reports the mean value of the primary dependent variable which is equal to 1 if the résumé received a callback from the employer. The second column reports the standard deviation of this variable.

Table 3.3: Employer Descriptive Statistics

	Mean	Std. deviation
<i>Employment pool characteristics</i>		
Unemployment rate (%)	9.580	1.830
Unemployment rate, quintile 1	7.398	0.720
Unemployment rate, quintile 2	8.595	0.173
Unemployment rate, quintile 3	9.315	0.324
Unemployment rate, quintile 4	10.344	0.288
Unemployment rate, quintile 5	12.523	1.270
<i>Employer's characteristics</i>		
Market	.776	
Non Market	.224	
Private	.871	
Public	.129	
<i>Job characteristics</i>		
Gardener position	.495	
Receptionist position	.505	
Open-ended contract	.285	
Fixed-term contract	.715	
<i>Job characteristics in the market sector</i>		
Gardener position	.497	
Receptionist position	.503	
Open-ended contract	.333	
Fixed-term contract	.667	
<i>Job characteristics in the non-market sector</i>		
Gardener position	.535	
Receptionist position	.465	
Open-ended contract	.106	
Fixed-term contract	.894	

Note: The table reports the unemployment rate of the commuting zone of the vacant job, the share of market and non-market vacant jobs, the required profession and the type of contracts of vacant jobs.

Table 3.4: The Effect of Individual Pathway on Probability of Callback

Dependent variable: Received a callback		(1)	(2)	(3)	(4)
		All applicants		Gardener	Receptionist
(1)	Unemployed, 1 temporary job	.008 .013	.009 .013	.003 .021	.012 .014
(2)	Unemployed, 2 temporary jobs	.005 .015	.001 .014	-.002 .025	.005 .015
(3)	Unemployed, 3 temporary jobs	-.018 .013	-.015 .013	-.019 .023	-.003 .014
(4)	Employed, market, subsidized, certified skills	.039** .016	.038** .016	.045* .025	.026 .018
(5)	Employed, market, non-subsidized, certified skills	.001 .021	.004 .021	-.036 .034	.036 .028
(6)	Employed, market, subsidized, no certified skills	-.000 .015	.002 .015	-.002 .024	.013 .016
(7)	Employed, market, non-subsidized, no certified skills	.012 .018	.014 .018	.014 .029	.006 .019
(8)	Employed, non-market, subsidized, certified skills	.051*** .019	.051*** .020	.041 .030	.054** .024
(9)	Employed, non-market, non-subsidized, certified skills	.033** .017	.032* .017	.037 .026	.030 .019
(10)	Employed, non-market, subsidized, no certified skills	-.004 .016	-.004 .016	-.007 .027	.001 .015
(11)	Employed, non-market, non-subsidized, no certified skills	-.003 .019	-.002 .019	.021 .035	-.012 .016
(12)	Constant (ref: unemployed, no job experience at all)	.059*** .013	.059*** .013	.105*** .023	.018 .013
	N	5,388	5,388	2,720	2,668
	Adj-R ²	.008	.041	.073	.041
	Department fixed effects	no	yes	yes	yes
	Month fixed effects	yes	yes	yes	yes

Note: The dependent variable is a dummy variable equal to one if the application gets a callback. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

where y_{ij} is an indicator variable equal to 1 if applicant of type i receives a callback from job j . A callback is defined as an invitation to an interview or a request for additional information. $\mathbf{1}(i)$ is an indicator function equal to one if the applicant is of type i . x_j is a vector of characteristics of the job which can include the profession, the type of contract (open-ended or fixed-term), the size of the firm, a *département* fixed effect and the unemployment rate of its commuting zone. ε_{ij} is a residual term. Standard errors are clustered at the job level.¹²

3.4.1 Employed versus unemployed

Our applicants have had different work experiences in the three years preceding their applications. They could occupy several temporary jobs for 2-month periods or they could be employed continuously, with the same employer. We compare applicants who followed either of these two paths with applicants who remained continuously unemployed over the last three years.

¹²As a robustness check, we also run regressions without any clustering as well as with clustering at the commuting zone level. Results are similar to those presented in the core of the paper.

This section is focused on applicants who did not get any skill certification. The impact of skill certification is examined in the next section.

Experience on temporary jobs

Table 3.4 shows that having some patchy work experience during the period of unemployment does not improve the relative situation of the candidates. This type of brief work experience gives no advantage to the unemployed who performed these jobs compared to other unemployed candidates with absolutely no work experience during their unemployment spell. This result holds both for gardeners and reception staff. It is consistent with those of Farber et al. (2016) who look at the impact of low wage jobs which do not match the previous work experience and education of college-educated females who apply for administrative support jobs. In their correspondence study, they find that such low-level temporary jobs do not increase the probability of callback. Farber et al. even show that taking a temporary job significantly reduces the likelihood of receiving a callback. Similarly, Nunley et al. (2016) look at the case of recent college graduates in the U.S. and find that youth who had job spells in positions for which a bachelor's degree was not required had a lower probability of being called back for an interview than more appropriately employed youth. The results of Farber et al. and of Nunley et al. suggest that low-level work experience is not valued at all by employers, who may even believe that it makes the applicant ill-suited for the position. The absence of negative effects of having held temporary jobs in our setup might be due to the very low skill level of our applicants. For our low skilled candidates facing very high unemployment rates, it is likely that having temporary jobs does not signal that they are ill-suited to the job vacancy. But nor does it help them to get more callbacks by signaling that they are more strongly motivated to work than other candidates who did not work at all over the last three years.

Experience on jobs without certified training

Table 3.4 shows that being employed rather than unemployed does not significantly improve the likelihood of receiving a callback if there is no training and certification of the skills acquired. This is true for gardeners as well as for receptionists. Hence, for high school dropouts, being employed for three years on fixed-term contracts, either in the market or non-market sector, subsidized or not, but without a qualifying training does not improve the chances of a positive

callback even among employers from the market sector (rows 6, 7, 10 and 11 of Table 3.4). These results are striking, as it is often claimed that getting a job in the market sector is a pathway to employment. They are nevertheless consistent with those of Fremigacci et al. (2016) who find that men unemployed for one year who apply for waiter jobs in France do not have lower callback rates than men employed on fixed-term contracts over the last year. All in all, it turns out that accumulating experience, even in the market sector, is not sufficient to get higher callback for young low skilled workers in France. It is however possible that being employed allows young people to plug into networks of connections which transmit more job offers. Our experiment does not allow us to explore this mechanism.

3.4.2 The importance of training and certified skills

Table 3.5 shows that only applicants with skills certified by a vocational degree at the end of their employment spell have higher callback rates than applicants who remained unemployed. The impact of skill certification is large (+3.4 percentage points, Table 3.5) but very heterogeneous. Skill certification has a stronger impact when the youth occupied a subsidized job rather than a non-subsidized job, and the impact is even stronger if the job on which the experience has been certified was in the non-market sector (rows 4, 5, 8 and 9 of Table 3.4). Unlike other subsidized employment schemes, subsidization is indeed conditional on participation in training under the *Emploi d'Avenir* program, which is supervised by the public employment service. Youth employed in an *Emploi d'Avenir* are followed by a contact person from the public employment service and by a tutor chosen among the employees or managers of the employing structure. Contact person, tutor and youth have to meet regularly. This means that the monitoring of training of youth employed on subsidized jobs is likely stronger than on non-subsidized jobs. It is also likely that more time can be devoted to studying and training in the non-market sector than in the market sector. Another reason might be that, in the non-market sector, due to budgetary constraints many of the 3-year temporary contracts are not renewable and there is very little possibility of recruitment on permanent contracts, whereas employers in the market sector have more leeway to transform temporary jobs into permanent ones if they are satisfied with their employee. Accordingly, it is likely that candidates with certified skills who come from market jobs are deemed less effective than candidates who come from non-market jobs since their contract has not been converted into an open-ended one while it could have been.

All in all, recruiters may expect youth who acquired certified skills on subsidized jobs in the non-market sector to be more skilled/effective than youth who acquired skill certification on other types of job. In the Appendix, we provide results based on a definition of the callback rate which considers as a positive callback only explicit invitations for interviews. When this more restrictive callback rate definition is used, the effect of training on the probability of callback becomes non-significant for youth with work experience in market subsidized jobs (see row 4 of Table 3.13 in the Appendix). This provides evidence that training acquired in the market sector is indeed perceived as less serious by employers, who are more inclined to request additional information from applicants with such profiles, instead of inviting them directly to an interview.

The situation of applicants who acquired their vocational degree at the end of a non-subsidized employment spell in the market sector is yet another illustration of this interpretation. Table 3.4 (row 5) shows that the callback rate for these applicants is not significantly different from those who remained completely unemployed. This result hinges on the applications of gardeners who were working in a large retail store, where they maintained green spaces, before sending their applications. For potential employers, even if these applicants got a vocational degree in this field, being employed by a large retail store might mean that they must not have had much time to properly train as gardeners especially as they were most likely not required to perform very advanced gardening tasks. Accordingly, recruiters do not value this type of profile.¹³ However, they do seem to value more the profile of applicants who were receptionists in the same store and got a vocational degree in the corresponding field, as shown by column 4, row 5. Recruiters may take the view that individuals with a receptionist profile had more opportunities to properly train and expand on their skills in a retail store (in comparison to gardeners), hence the positive, though not significant, coefficient observed for receptionists.

¹³When callback is defined only as an explicit invitation to an interview (hence, excluding requests for more information), the negative coefficient on the non-subsidized employment spell in the market sector profile for gardeners becomes statistically significant at the 10% level. On the contrary, certification in a non-market, subsidized experience displays a strong positive and statistically significant impact (rows 5 and 8, column 3 of Table 3.13 in the Appendix), which contrasts with the lack of any effects observed in Table 3.4 (row 5) where requests for information are taken into account.

3.4.3 The effects of being employed on subsidized jobs and on non-market jobs

Contrary to prior expectations according to which experience accumulated on non-subsidized employment should be more highly valued by employers than experience accumulated on subsidized employment, we find that individuals who performed a subsidized job do not get lower callback rates. Table 3.6, column 1, shows that subsidized jobs improve the chances of callback (+2.1 percentage points). But this effect is triggered by the role of skills certification, which appears to have more credibility when performed in the context of an assisted job as explained above. Indeed, the effect of subsidized employment on the callback rates disappears when certified skills are controlled for, as shown by column 2 of table 3.6. This result holds true both for gardeners and receptionists, as shown by columns 3 and 4 of table 3.6. Accordingly, there seems to be no “stigma” effect associated with subsidized employment for low-skilled youth in France.

When it comes to the type of sector in which individuals worked previously, it appears that professional experience in the non-market sector increases the chances of callback more than employment in the market sector (+2.1 against +1.6 percentage point), as shown by table 3.7, column 1. Once again this effect relies on the credibility of the training in the non-market sector: any specific effect of going through the non-market sector disappears if training is controlled for, as shown by column 2 of table 3.7. All in all, work experience without certified training does not improve the probability of callback whatever the sector, either market or non-market, in which experience was accrued.

The effect of candidates’ previous professional experience on their callback rates may nevertheless depend on the type of sector they apply in. Indeed, we might expect market sector employers to place less value on certain applicant profiles, such as those exhibiting subsidized or non-market sector employment experiences. Panels B and C of tables 3.6 and 3.7 examine this hypothesis. Results show that market sector employers do not stigmatize individuals having held subsidized jobs in the past, nor those having worked in the non-market sector. When the effect of training is taken into account, both market sector and non-market sector recruiters react in a similar way to the previous employment experience of our applicants.

Finally, we can examine whether subsidized employment in the market sector is more efficient at increasing youth’s chances of getting a callback from potential employers than subsidized

Table 3.5: The Effect of Skill Certification on Probability of Callback

	(1)	(2)	(3)
	All applicants	Gardener	Receptionist
Employment without certified skills	.003 .008	.008 .013	.000 .008
Employment with certified skills	.034*** .009	.035** .014	.031*** .010
Constant (ref: unemployed)	.059*** .012	.104*** .021	.021* .011
N	5,388	2,720	2,668
Adj-R ²	.040	.071	.040

Note: The dependent variable is a dummy variable equal to 1 if the application gets a callback. Employment with certified skills comprises all applications of applicants who were employed on jobs in the market or non-market sector, with or without subsidy, which offered skill certification. Employment without certified skills comprises all applications of applicants who were employed on jobs in the market or non-market sector, with or without subsidy, which did not offer skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a skill certification. All columns include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

employment in the non-market sector. Meta-analyses (Card et al. 2010, Kluve, 2010) found that private sector incentive schemes are more effective than other programs for young people. Similarly, a recent assessment of subsidized jobs conducted in France between 2005 and 2007 indicates that subsidized jobs in the market sector had a positive impact on access to stable employment two and a half years after the entry into the contract, unlike subsidized jobs in the non-market sector which had a negative effect (Benoteau, 2015). Our results are displayed in table 3.8 and suggest that, in the absence of training, subsidized market work experience, similarly to subsidized non-market sector experience, has no effect on the probability of callback. This holds whether individuals apply to market or non-market sector job offers, as reported in Panels B and C. Put differently, table 3.8 reports a stronger effect of subsidized non-market employment on the chances of receiving a callback (column 1), but this effect withers away when training is controlled for (column 2). This results holds true for gardeners and receptionists (columns 3 and 4). Thus, for the hardest-to-place youth in France, previous work experience whether subsidized or non-subsidized, in the market or non-market sector, has no effect on their employment prospects if it is not accompanied by a qualification component in order to enhance their skills.

Table 3.6: The Effect of Having Been Employed in Subsidized Jobs vs. Non-Subsidized Jobs on Probability of Callback

	(1)	(2)	(3)	(4)
	All applicants		Gardener	Receptionist
<i>Panel A (All job offers)</i>				
Non-subsidized employment	.017* .009	−.001 .011	.006 .018	−.005 .011
Subsidized employment	.021*** .008	.005 .009	.009 .015	.003 .009
Constant (ref: unemployed)	.061*** .012	.059*** .012	.104*** .021	.021* .011
Certified skills	no	yes	yes	yes
N	5,388	5,388	2,720	2,668
Adj-R ²	.038	.050	.071	.040
<i>Panel B (Market sector job offers)</i>				
Non-subsidized employment	.019* .010	.002 .012	.011 .019	−.005 .013
Subsidized employment	.019*** .008	.004 .009	.015 .017	−.004 .009
Constant (ref: unemployed)	.052*** .012	.050*** .012	.084*** .022	.018 .012
Certified skills	no	yes	yes	yes
N	4,236	4,236	2,104	2,132
Adj-R ²	.046	.047	.081	.066
<i>Panel C (Non-market sector job offers)</i>				
Non-subsidized employment	.011 .021	−.012 .026	.006 .045	−.013 .025
Subsidized employment	.024 .019	.003 .020	−.006 .034	.029 .025
Constant (ref: unemployed)	.106** .041	.102** .041	.200*** .075	.047 .035
Certified skills	no	yes	yes	yes
N	1,152	1,152	616	536
Adj-R ²	.125	.128	.176	.160

Note: The dependent variable is a dummy variable equal to 1 if the application gets a callback. Subsidized employment comprises all applications of applicants who were employed on subsidized jobs in the market or non-market sector, with or without skill certification. Non-subsidized jobs comprises all applications of applicants who were employed on non-subsidized jobs in the market or non-market sector, with or without skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a skill certification. All columns include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.7: The Effect of Having Been Employed in Non-Market Jobs vs. Market Jobs on Probability of Callback

	(1)	(2)	(3)	(4)
	All applicants		Gardener	Receptionist
<i>Panel A (All job offers)</i>				
Market sector experience	.016** .008	.002 .009	.005 .015	.001 .010
Non-market sector experience	.021*** .008	.003 .010	.012 .017	-.001 .010
Constant (ref: unemployed)	.061*** .012	.059*** .012	.105*** .021	.021* .011
Certified skills	no	yes	yes	yes
N	5,388	5,388	2,720	2,668
Adj-R ²	.038	.040	.071	.040
<i>Panel B (Market sector job offers)</i>				
Market sector experience	.014 .008	.000 .010	.003 .016	-.002 .011
Non-market sector experience	.024** .010	.008 .011	.029 .020	-.008 .010
Constant (ref: unemployed)	.052*** .012	.051*** .012	.086*** .022	.018 .012
Certified skills	no	yes	yes	yes
N	4,236	4,236	2,104	2,132
Adj-R ²	.046	.048	.081	.066
<i>Panel C (Non-market sector job offers)</i>				
Market sector experience	.024 .021	.005 .023	.020 .040	.001 .022
Non-market sector experience	.014 .019	-.012 .023	-.031 .038	.024 .028
Constant (ref: unemployed)	.105** .041	.102** .041	.195** .075	.046 .036
Certified skills	no	yes	yes	yes
N	1,152	1,152	616	536
Adj-R ²	.125	.128	.178	.158

Note: The dependent variable is a dummy variable equal to 1 if the application gets a callback. Market employment comprises all applications of applicants who were employed in the market sector, on subsidized or non subsidized jobs, with or without skill certification. Non-market employment comprises all applications of applicants who were employed in the non-market sector, on subsidized or non subsidized jobs, with or without skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a skill certification. All columns include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.8: The Effect of Subsidized and Non-Market Job Experience on Probability of Callback

	(1)	(2)	(3)	(4)
	All applicants	Gardener	Receptionist	
<i>Panel A (All job offers)</i>				
Non-subsidized market sector experience	.010 .013	-.002 .013	-.007 .022	.001 .015
Non-subsidized non-market sector experience	.021* .012	-.000 .013	.019 .023	-.009 .014
Subsidized non-market sector experience	.022* .011	.007 .012	.008 .020	.006 .013
Subsidized market sector experience	.020** .010	.004 .011	.013 .018	-.000 .012
Constant (ref:unemployment)	.060*** .012	.059*** .012	.103*** .021	.021* .011
Certified skills	no	yes	yes	yes
N	5,388	5,388	2,720	2,668
Adj-R ²	.038	.040	.071	.040
<i>Panel B (Market sector job offers)</i>				
Non-subsidized market sector experience	.013 .013	.001 .014	-.010 .022	.007 .018
Non-subsidized non-market sector experience	.023* .013	.003 .015	.033 .026	-.017 .015
Subsidized non-market sector experience	.026** .013	.012 .013	.027 .023	-.001 .013
Subsidized market sector experience	.014 .010	-.001 .012	.013 .020	-.008 .012
Constant (ref:unemployment)	.052*** .012	.051*** .012	.084*** .022	.019 .012
Certified skills	no	yes	yes	yes
N	4,236	4,236	2,104	2,132
Adj-R ²	.046	.048	.082	.067
<i>Panel C (Non-market sector job offers)</i>				
Non-subsidized market sector experience	.005 .036	-.009 .038	.039 .067	-.054** .023
Non-subsidized non-market sector experience	.015 .026	-.014 .030	-.024 .055	.014 .034
Subsidized non-market sector experience	.012 .027	-.009 .029	-.038 .043	.036 .041
Subsidized market sector experience	.034 .025	.012 .026	.011 .043	.027 .031
Constant (ref:unemployment)	.103** .041	.100*** .041	.196*** .075	.045 .035
Certified skills	no	yes	yes	yes
N	1,152	1,152	616	536
Adj-R ²	.126	.128	.179	.164

Note: The dependent variable is a dummy variable equal to 1 if the application gets a callback. Non-subsidized market sector experience comprises all applications of applicants who were employed in the market sector, on non-subsidized jobs, with or without skill certification. Non-subsidized non-market sector experience comprises all applications of applicants who were employed in the non-market sector, on non-subsidized jobs, with or without skill certification. Subsidized non-market sector experience comprises all applications of applicants who were employed in the non-market sector, on subsidized jobs, with or without skill certification. Subsidized market sector experience comprises all applications of applicants who were employed in the market sector, on subsidized jobs, with or without skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a skill certification. All columns include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

3.4.4 The type of job offer

Results from previous sections are robust to the control of a variety of employer characteristics such as size or sector. In this section, we explore differences in callback rates based on the type of job offer. The callback rate is 3.5 percentage points lower for market jobs than for non-market jobs, as reported by table 3.9, row 1, column 1. This result is mainly driven by gardeners who have a decreased probability (-6.1 percentage points, row 1, columns 3 and 4) to get an interview when sending a job application to a market sector employer, unlike receptionists for whom applying to a market or non-market employer is virtually equivalent. This results holds when the acquisition of certified skills is controlled for, meaning that market and non-market employers react in a similar way to the level of competence of our candidates.

Table 3.9, row 2, shows that the callback rate is similar for jobs that offer a fixed-term contract and those that offer an open-ended one. This is true for gardeners and receptionists, whether they have certified skills or not. This result is unexpected to the extent that open-ended contracts are preferable to fixed-term contracts for most people. One could have expected a longer waiting line, and therefore a lower callback rate, for open-contracts. However, it is possible that we observe no difference because low-skill applicants like the ones in our experiment, who face very strong barriers to accessing any type of employment, decide not to be selective and to apply to all jobs. Hence, the waiting line also becomes longer for fixed-term contracts, which explains the similar callback rates we observe for applications to open-ended and to fixed-term jobs.

3.4.5 The impact of local labor market conditions

So far, we have found that only training leading to a certification of skills significantly raises callback rates among all types of applicants who have some employment experience. A possible interpretation is that an important obstacle to getting a job is the insufficient level of skills among our applicants, who compete with more qualified and experienced candidates on markets where there is a strong excess of labor supply. Our candidates who acquired a vocational degree are in a better position to compete. However, their vocational degree corresponds to the lowest level in the National Classification of Levels of Training (*titre professionnel* of level V). Therefore, the advantage provided by their degree should significantly decline when the number of other candidates increases, which is the case when the unemployment rate is higher. Table

Table 3.9: The Effect of Job Characteristics on Probability of Callback

	(1)	(2)	(3)	(4)
	All applicants		Gardener	Receptionist
Market job offer	-.035*** .012	-.036*** .012	-.061*** .020	.000 .013
Fixed-term contract	.010 .010	.010 .010	.000 .017	.019* .011
Constant	.085*** .018	.075*** .018	.150*** .032	.001* .017
Certified skills	no	yes	yes	yes
N	5, 150	5, 150	2, 570	2, 580
Adj-R ²	.039	.042	.075	.043

Note: The dependent variable is a dummy variable equal to 1 if the application gets a callback. Market job is an indicator variable equal to one if the job offer belongs to the market sector. Fixed-term contract is an indicator variable equal to 1 if the job offer is a fixed-term contract. Certified skills is an indicator variable equal to 1 if the applicant has a skill certification. All columns include department and month fixed effects. The total number of observations is slightly lower compared with the previous tables because the market / non-market status was missing for some job offers. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

3.10 reports the impact of skill certification according to the unemployment rate at the level of the commuting zone¹⁴ where the job offer was posted. It is clear that training accompanied by skill certification significantly improves the callback rate only when the local unemployment rate is sufficiently low.¹⁵ The effect of training wanes very quickly and becomes non-significant as soon as the unemployment rate exceeds 9.31 percent (which is below the national average of 9.58 percent).

In order to check for the robustness of our results, we also use the average callback rate of our applicants by commuting zone as a measure of local labor market conditions. Commuting zones where local unemployment is higher have lower average callback rate.¹⁶ Results, displayed in Table 3.11, corroborate those derived from using the unemployment rate as a proxy for local labor market conditions. The effect of training is higher in areas where the average callback rate is also higher. Put differently, in areas with low callback rates, which also correspond to higher unemployment rates, employers appear to be insensitive to the accrued qualification of

¹⁴We use “*zone d’emploi*” as defined by INSEE, the French National Statistical Office. There are 277 commuting zones in our sample.

¹⁵We find no systematic pattern based on local labor market conditions concerning the effect of other outcomes, such as subsidized or non-market work sector experience, on the probability of callback.

¹⁶One point of unemployment rate at the commuting zone level decreases the callback rate by 0.007 points, which represents a 9% decrease on average of the callback rate (the average callback rate is 0.080). The regression coefficient is negative and statistically significant at the 1% level.

Table 3.10: The Effect of Certified Skills on Probability of Callback by Quintile of Unemployment Rate of the Commuting Zone where the Job was Posted

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Q1	Q2	Q3	Q4	Q5
Certified skills	.034*** .009	.074*** .023	.038* .021	.026 .019	.024 .018	.012 .017
Constant	.060*** .012	.046 .028	.114*** .035	.052** .020	.083** .035	.030* .017
Unemployment rate						
Mean	9.58	7.40	8.59	9.31	10.34	12.52
Min	5.45	5.45	8.20	8.95	9.90	10.90
Max	17.60	8.15	8.90	9.80	10.85	17.60
N	5,144	1,078	996	1,020	1,114	936
Adj-R ²	.040	.076	.071	.106	.059	.056

Note: The dependent variable is a dummy variable equal to 1 if the application gets a callback. Certified skills is an indicator variable equal to 1 if the applicant has a skill certification. QX stands for the number of the quintile of the unemployment rate of the commuting zone of the job offer. Mean, Min and Max denote the mean, the minimum and the maximum value of the quintile of the unemployment rate of the commuting zone respectively. The total number of observations is slightly lower compared with the previous tables because the employment zone was not identified for some job offers. The regressions include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

the applicants. Skill certification, at least at the basic level at which our applicants get it, may well be considered insufficient by potential employers to trigger hiring decisions when excess of labor supply is very large.

3.5 Conclusion

This article reports results from a field experiment studying the impact of individual pathways with various forms of labor market experience for youth who dropped out of high school. Our results indicate that the likelihood of receiving a callback from employers sharply improves when youth get a certification of their skills. Other pathways in the labor market seem unable to improve the employment outlook of unskilled youth. Notably, subsidized or non-subsidized work experience, either in the market or non-market sector, even for a cumulated period of 3 years, does not significantly improve the chances of being contacted by employers compared with an unemployment spell of the same duration. This result is consistent with previous research showing that accruing work experience, even in the market sector, is not always sufficient to get callbacks more frequently. It suggests that employment support measures, such as temporary

Table 3.11: The Effect of Certified Skills on Probability of Callback by Quintile of Callback Rate of the Commuting Zone where the Job was Posted

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Q1	Q2	Q3	Q4	Q5
Certified skills	.034*** .009	.003 .003	.023 .014	.028 .023	.053** .024	.071** .030
Constant	.060*** .012	-.002 .002	.019 .015	.077** .033	.104** .043	.145*** .042
Callback rate						
Mean	.080	.001	.050	.074	.101	.200
Min	.000	.000	.027	.065	.081	.127
Max	1.000	.022	.062	.079	.125	1.000
N	5,388	1,128	1,424	858	1,026	952
Adj-R ²	.040	.031	.019	.058	.015	.083

Note: The dependent variable is a dummy variable equal to 1 if the application gets a callback. Certified skills is an indicator variable equal to 1 if the applicant has a skill certification. QX stands for the number of the quintile of the callback rate of the commuting zone of the job offer. Mean, Min and Max denote the mean, the minimum and the maximum value of the quintile of the callback rate of the commuting zone respectively. The regressions include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

jobs in the non-market sector or hiring subsidies in the market sector, should be conditional on getting a certification of skills at the end of the employment period, at least for previously unskilled youth.

The effect of skill certification is more pronounced in tight labor markets where the unemployment rate is low. This result suggests that additional measures supporting the geographical mobility of youth could add important leverage to the employment effect of training. Our test cannot, however, measure the full potential effects of training on employment, such as job stability or job quality, which are typically identified in the longer-run (Card et al. 2010, 2015). Also, in terms of external validity, the very fact of obtaining a certification may not have the same value for employers in different countries. French employers may be more appreciative of the degree itself, as it conveys a positive message about the candidates' abilities, while their foreign counterparts may react primarily to actual skills observed upon meeting with the candidate. In this respect, employers from other cultures may not consider the mere acquisition of a training certification as a sufficient signal regarding the candidate's real work capacities. Similarly, our results cannot capture the full employment effect of activities that improve the social networks of young people. It is likely, for instance, that work experience notably in

the market sector helps job seekers direct their search in a more effective manner thanks to counseling and direct recommendations.

Last, the results in our experiment suggest several additional areas for future research. First, we have focused on some of the most common occupations of low skilled youth in subsidized employment— receptionists and gardeners. We think it would be useful to examine whether our results generalize to other types of occupations, some of which could be less sensitive to local unemployment conditions. Second, our fictitious candidates' applications were sent by email to job offers available online on the public employment service's website and on a few private websites. To the extent that employers relying on this channel may be more selective or have different expectations than employers who recruit through their acquaintances or private networks, it would be opportune for future studies to explore alternative application methods. Sending spontaneous job applications may be appropriate in order to examine if there is any selection problem related to the chosen recruitment channel. Third, we focused entirely on unskilled youth. We suspect that the effect of skill certification, and hence the return to public programs, should be decreasing with the initial level of education. Finally, we focused only on employment-related pathways. As a result we cannot compare the effect of a certification of skills acquired mostly on the job, with other forms of training available for young people, such as apprenticeship or comprehensive second-chance programs. Future audit studies should explore what type of training is most efficient in improving the chances of callback for a given level of certification.

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3.6 Appendix

3.6.1 Robustness check

This appendix reproduces the main analyses based on an alternative and more restrictive definition of the callback rate whereby only calls for setting interviews are considered a positive answer (thus, demands for further information are null, like the absence of callback).

Table 3.12: Callback Rate Descriptive Statistics

<i>Dependent variable: Received callback for interview</i>	Mean	Std. deviation
<i>Résumé attributes</i>		
All applicants	.045	.208
Unemployed, no job experience at all	.039	.194
Unemployed, 1 temporary job	.037	.191
Unemployed, 2 temporary jobs	.043	.203
Unemployed, 3 temporary jobs	.037	.189
Employed, market, subsidized, certified skills	.06	.237
Employed, market, non-subsidized, certified skills	.027	.165
Employed, market, subsidized, no certified skills	.050	.219
Employed, market, non-subsidized, no certified skills	.043	.204
Employed, non-market, subsidized, certified skills	.098	.298
Employed, non-market, non-subsidized, certified skills	.053	.226
Employed, non-market, subsidized, no certified skills	.031	.175
Employed, non-market, non-subsidized, no certified skills	.027	.163
<i>Job characteristics</i>		
Gardener position	.070	.255
Receptionist position	.020	.140
Job in the non-market sector	.061	.240
Job in the market sector	.041	.199
Job in the public sector	.069	.254
Job in the private sector	.042	.200

Note: In this table we consider that the callback variable equals 1 if an interview is requested and zero in all other cases. Thus, the first column of the table reports the mean value of the primary dependent variable which is equal to 1 if the résumé received a callback from the employer explicitly asking to set up an interview and to zero otherwise. The second column reports the standard deviation of this variable.

Table 3.13: The Effect of Individual Pathway on Probability of Callback

Dependent variable: Received a callback for an interview		(1)	(2)	(3)	(4)
		All applicants		Gardener	Receptionist
(1)	Unemployed, 1 temporary job	-.002 .009	-.001 .009	.001 .016	-.003 .008
(2)	Unemployed, 2 temporary jobs	.003 .011	-.000 .011	.001 .020	.003 .011
(3)	Unemployed, 3 temporary jobs	-.004 .011	-.001 .011	-.006 .018	.013 .011
(4)	Employed, market, subsidized, certified skills	.021* .012	.020 .012	.019 .019	.020 .015
(5)	Employed, market, non-subsidized, certified skills	-.013 .014	-.010 .014	-.039* .023	.017 .018
(6)	Employed, market, subsidized, no certified skills	.012 .012	.014 .012	.023 .021	.013 .012
(7)	Employed, market, non-subsidized, no certified skills	.003 .013	.004 .013	.010 .023	-.009 .010
(8)	Employed, non-market, subsidized, certified skills	.055*** .018	.056*** .018	.057** .028	.047** .020
(9)	Employed, non-market, non-subsidized, certified skills	.013 .015	.015 .012	.020 .020	.014 .013
(10)	Employed, non-market, subsidized, no certified skills	-.010 .011	-.010 .011	.004 .022	-.016** .007
(11)	Employed, non-market, non-subsidized, no certified skills	-.014 .013	-.012 .013	-.004 .027	-.012* .007
(12)	Constant (ref: unemployed, no job experience at all)	.031*** .010	.030*** .010	.055*** .018	.006** .009
	N	5,388	5,388	2,720	2,668
	Adj-R ²	.009	.046	.072	.059
	Department fixed effects	no	yes	yes	yes
	Month fixed effects	yes	yes	yes	yes

Note: In this table we consider that the callback variable equals 1 if an interview is requested and zero in all other cases. Thus, the dependent variable is a dummy variable equal to 1 if the application gets a callback asking for an interview. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.14: The Effect of Skills Certification on Probability of Callback

	(1)	(3)	(4)
	All applicants	Gardener	Receptionist
Employment without certified skills	.002 .006	.011 .012	-.006 .005
Employment with certified skills	.023*** .007	.022** .011	.021*** .008
Constant (ref: unemployed)	.029*** .008	.054*** .015	.007 .007
N	5,388	2,720	2,668
Adj-R ²	.042	.068	.054

Note: In this table we consider that the callback variable equals 1 if an interview is requested and zero in all other cases. Thus, the dependent variable is an indicator variable equal to 1 if the application gets a callback asking for an interview. Employment with certified skills comprises all applications of applicants who were employed on jobs in the market or non-market sector, with or without subsidy, which offered skill certification. Employment without certified skills comprises all applications of applicants who were employed on jobs in the market or non-market sector, with or without subsidy, which did not offer skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a certified skill. All columns include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.15: The Effect of Having Been Employed in Subsidized Jobs vs. Non-subsidized Jobs on Probability of Callback

	(1)	(2)	(3)	(4)
	All applicants	Gardener	Receptionist	
<i>Panel A (All job offers)</i>				
Non-subsidized employment	.003 .007	-.009 .008	-.001 .014	-.015** .007
Subsidized employment	.019*** .006	.008 .007	.020 .013	-.001 .006
Constant (ref: unemployed)	.030*** .008	.029*** .008	.053*** .015	.007 .007
Certified skills	no	yes	yes	yes
N	5,388	5,388	2,720	2,668
Adj-R ²	.042	.043	.069	.055
<i>Panel B (Market sector job offers)</i>				
Non-subsidized employment	.001 .007	-.010 .009	-.001 .015	-.017** .008
Subsidized employment	.017*** .007	.008 .008	.021 .014	-.004 .006
Constant (ref: unemployed)	.024*** .008	.023*** .008	.040** .016	.005 .007
Certified skills	no	yes	yes	yes
N	4,236	4,236	2,104	2,132
Adj-R ²	.052	.053	.087	.090
<i>Panel C (Non-market sector job offers)</i>				
Non-subsidized employment	.010 .017	-.008 .021	.004 .040	-.010 .015
Subsidized employment	.025 .016	.008 .016	.015 .030	.014 .015
Constant (ref: unemployed)	.064** .026	.061** .026	.099** .046	.043 .030
Certified skills	no	yes	yes	yes
N	1,152	1,152	616	536
Adj-R ²	.111	.114	.143	.181

Note: In this table we consider that the callback variable equals 1 if an interview is requested and zero in all other cases. Thus, the dependent variable is an indicator variable equal to 1 if the application gets a callback asking for an interview. Subsidized employment comprises all applications of applicants who were employed on subsidized jobs in the market or non-market sector, with or without skill certification. Non-subsidized jobs comprises all applications of applicants who were employed on non-subsidized jobs in the market or non-market sector, with or without skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a certified skill. All columns include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.16: The Effect of Having Been Employed in Non-Market Jobs vs. Market Jobs on Probability of Callback

	(1)	(2)	(3)	(4)
	All applicants	Gardener	Receptionist	
<i>Panel A (All job offers)</i>				
Market sector experience	.011* .006	.002 .007	.008 .013	-.004 .007
Non-market sector experience	.013** .007	.001 .007	.016 .014	-.004 .007
Constant (ref: unemployed)	.030*** .008	.029*** .008	.054*** .015	.007 .007
Certified skills	no	yes	yes	yes
N	5,388	5,388	2,720	2,668
Adj-R ²	.041	.042	.069	.054
<i>Panel B (Market sector job offers)</i>				
Market sector experience	.004 .007	-.004 .008	-.000 .014	-.007 .007
Non-market sector experience	.017** .008	.007 .009	.030* .016	-.012* .006
Constant (ref: unemployed)	.025** .008	.024** .008	.043*** .016	.006 .007
Certified skills	no	yes	yes	yes
N	4,236	4,236	2,104	2,132
Adj-R ²	.051	.052	.088	.089
<i>Panel C (Non-market sector job offers)</i>				
Market sector experience	.034* .019	.018 .021	.035 .037	.009 .017
Non-market sector experience	.005 .015	-.017 .015	-.021 .029	-.002 .013
Constant (ref: unemployed)	.062** .026	.059** .026	.095** .046	.041 .031
Certified skills	no	yes	yes	yes
N	1,152	1,152	616	536
Adj-R ²	.112	.115	.147	.179

Note: In this table we consider that the callback variable equals 1 if an interview is requested and zero in all other cases. Thus, the dependent variable is an indicator equal to 1 if the application gets a callback asking for an interview. Market employment comprises all applications of applicants who were employed in the market sector, on subsidized or non subsidized jobs, with or without skill certification. Non-market employment comprises all applications of applicants who were employed in the non-market sector, on subsidized or non subsidized jobs, with or without skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a certified skill. All columns include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.17: The Effect of Subsidized and Non-Market Job Experience on Probability of Callback

	(1)	(2)	(3)	(4)
	All applicants	Gardener	Receptionist	
<i>Panel A (All job offers)</i>				
Non-subsidized market sector experience	-.001 .009	-.009 .010	-.009 .017	-.013 .009
Non-subsidized non-market sector experience	.006 .009	-.009 .010	.007 .018	-.016* .008
Subsidized non-market sector experience	.021** .010	.010 .009	.026* .017	-.003 .008
Subsidized market sector experience	.018** .008	.007 .009	.017 .016	.001 .009
Constant (ref:unemployment)	.030*** .008	.029*** .008	.054*** .015	.007 .007
Certified skills	no	yes	yes	yes
N	5,388	5,388	2,720	2,668
Adj-R ²	.042	.043	.069	.055
<i>Panel B (Market sector job offers)</i>				
Non-subsidized market sector experience	-.006 .009	-.014 .010	-.019 .016	-.012 .011
Non-subsidized non-market sector experience	.007 .010	-.006 .012	.018 .022	-.022** .009
Subsidized non-market sector experience	.027** .011	.018* .011	.042** .020	-.004 .009
Subsidized market sector experience	.010 .008	.001 .009	.010 .017	-.005 .009
Constant (ref:unemployment)	.025*** .008	.024*** .008	.042*** .016	.006 .007
Certified skills	no	yes	yes	yes
N	4,236	4,236	2,104	2,132
Adj-R ²	.053	.054	.089	.090
<i>Panel C (Non-market sector job offers)</i>				
Non-subsidized market sector experience	.026 .030	.013 .033	.051 .060	-.020** .010
Non-subsidized non-market sector experience	.001 .019	-.025 .020	-.037 .038	-.004 .023
Subsidized non-market sector experience	.009 .020	-.010 .019	-.011 .034	.002 .020
Subsidized market sector experience	.038* .022	.019 .023	.025 .040	.024 .025
Constant (ref:unemployment)	.062*** .026	.059** .026	.097** .046	.040 .030
Certified skills	no	yes	yes	yes
N	1,152	1,152	616	536
Adj-R ²	.112	.116	.148	.182

Note: The dependent variable is an indicator variable equal to 1 if the application gets a callback asking for an interview and zero in all other cases. Non-subsidized market sector experience comprises all applications of applicants who were employed in the market sector, on non-subsidized jobs, with or without skill certification. Non-subsidized non-market sector experience comprises all applications of applicants who were employed in the non-market sector, on non-subsidized jobs, with or without skill certification. Subsidized non-market sector experience comprises all applications of applicants who were employed in the non-market sector, on subsidized jobs, with or without skill certification. Subsidized market sector experience comprises all applications of applicants who were employed in the market sector, on subsidized jobs, with or without skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a certified skill. All columns include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.18: The Effect of Job Characteristics on Probability of Callback

	(1)	(2)	(3)	(4)
	All applicants		Gardener	Receptionist
Market job offer	-.019** .009	-.019** .009	-.034** .015	.000 .009
Fixed-term contract	.004 .007	.004 .007	.014 .013	-.005 .008
Constant	.050*** .013	.043*** .013	.078*** .023	.009** .012
Certified skills	no	yes	yes	yes
N	5,150	5,150	2,570	2,580
Adj-R ²	.043	.046	.074	.056

Note: In this table we consider that the callback variable equals 1 if an interview is requested and zero in all other cases. Thus, the dependent variable is an indicator variable equal to 1 if the application gets a callback asking for an interview. Market job is an indicator variable to 1 if the job offer belongs to the market sector. Fixed-term contract is an indicator variable equal to 1 if the job offer is a fixed-term contract. Certified skills is an indicator variable equal to 1 if the applicant has a certified skill. All columns include department and month fixed effects. The total number of observations is slightly lower compared with the previous tables because the market / non-market status was missing for some job offers. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.19: The Effect of Certified Skills on Probability of Callback by Quintile of Unemployment Rate of the Commuting Zone where the Job was Posted

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Q1	Q2	Q3	Q4	Q5
Certified skills	.022*** .007	.050*** .019	.016 .016	.027* .016	.024 .015	.004 .014
Constant	.030*** .008	.032 .021	.059*** .022	.030** .015	.021 .021	.014 .013
Unemployment rate						
Mean	9.58	7.40	8.59	9.31	10.34	12.52
Min	5.45	5.45	8.20	8.95	9.90	10.90
Max	17.60	8.15	8.90	9.80	10.85	17.60
N	5,388	1,078	996	1,020	1,114	936
Adj-R ²	.042	.069	.079	.119	.036	.070

Note: In this table we consider that the callback variable equals 1 if an interview is requested and zero in all other cases. Thus, the dependent variable is an indicator variable equal to 1 if the application gets a callback asking for an interview. Certified skills is an indicator variable equal to 1 if the applicant has certified skills. QX stands for the number of the quintile of the unemployment rate of the commuting zone of the job offer. Mean, Min and Max denote the mean, the minimum and the maximum value of the quintile of the unemployment rate of the commuting zone respectively. The total number of observations is slightly lower compared with the previous tables because the employment zone was not identified for some job offers. The regressions include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.20: The Effect of Certified Skills on Probability of Callback by Quintile of Callback Rate of the Commuting Zone where the Job was Posted

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Q1	Q2	Q3	Q4	Q5
Certified skills	.022*** .007	.000 .	-.005 .014	.039** .015	.035* .018	.046* .025
Constant	.008*** .003	.000 .	-.001 .008	.017 .015	.041 .028	.107*** .030
Callback rate						
Mean	.045	.000	.019	.035	.053	.134
Min	.000	.000	.011	.027	.039	.067
Max	.750	.000	.027	.038	.066	.750
N	5,388	1,544	664	1200	936	1,044
Adj-R ²	.042	.	.047	.029	.023	.071

Note: In this table we consider that the callback variable equals 1 if an interview is requested and zero in all other cases. Thus, the dependent variable is an indicator variable equal to 1 if the application gets a callback asking for an interview. Certified skills is an indicator variable equal to 1 if the applicant has certified skills. QX stands for the number of the quintile of the callback rate of the commuting zone of the job offer. Mean, Min and Max denote the mean, the minimum and the maximum value of the quintile of the callback rate of the commuting zone respectively. The regressions include department and month fixed effects. Robust standard errors are clustered at the job level and reported below the coefficients. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

3.6.2 Probit model

This appendix reports the estimated marginal effects at means of the Probit model of the relations presented in tables 3.4 to 3.11.

Table 3.21: The Effect of Individual Pathway on Probability of Callback (Marginal Effects at the Mean)

Dependent variable: Received a callback		(1)	(2)	(3)
		All applicants	Gardener	Receptionist
(1)	Unemployed, 1 temporary job	.009 .013	.007 .022	.015 .015
(2)	Unemployed, 2 temporary jobs	.004 .015	.014 .025	.005 .017
(3)	Unemployed, 3 temporary jobs	-.020 .016	-.023 .027	-.006 .018
(4)	Employed, market, subsidized, certified skills	.035** .014	.044* .023	.027* .015
(5)	Employed, market, non-subsidized, certified skills	.002 .023	-.035 .043	.034* .020
(6)	Employed, market, subsidized, no certified skills	-.000 .016	-.005 .027	.014 .017
(7)	Employed, market, non-subsidized, no certified skills	.013 .018	.019 .028	.005 .021
(8)	Employed, non-market, subsidized, certified skills	.047*** .015	.048* .026	.046*** .019
(9)	Employed, non-market, non-subsidized, certified skills	.030** .015	.038 .024	.024 .017
(10)	Employed, non-market, subsidized, no certified skills	-.002 .017	-.002 .029	.007 .016
(11)	Employed, non-market, non-subsidized, no certified skills	-.002 .020	.021 .032	-.024 .028
	N	5,388	2,720	2,668
	Pseudo R ²	.007	.006	.016

Note: The table reports marginal effects for the probability of receiving a callback based on probit regressions. The dependent variable is a dummy variable equal to 1 if the application gets a callback. Robust standard errors are clustered at the job level and reported below the marginal effects. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.22: The Effect of Certification of Skills on Probability of Callback (Marginal Effects at the Mean)

	(1)	(3)	(4)
	All applicants	Gardener	Receptionist
Employment without certified skills	.002 .008	.006 .014	.001 .009
Employment with certified skills	.033*** .008	.035*** .013	.027*** .008
N	5,388	2,720	2,668
Pseudo R ²	.005	.003	.010

Note: The table reports marginal effects for the probability of receiving a callback based on probit regressions. The dependent variable is a dummy variable equal to 1 if the application gets a callback. Employment with certified skills comprises all applications of applicants who were employed on jobs in the market or non-market sector, with or without subsidy, which offered skill certification. Employment without certified skills comprises all applications of applicants who were employed on jobs in the market or non-market sector, with or without subsidy, which did not offer skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a certified skill. Robust standard errors are clustered at the job level and reported below the marginal effects. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.23: The Effect of Having Been Employed in Subsidized Jobs vs. Non-subsidized Jobs on Probability of Callback (Marginal Effects at the Mean)

	(1)	(2)	(3)	(4)
	All applicants		Gardener	Receptionist
Non-subsidized employment	.016* .009	-.002 .011	.004 .017	-.007 .012
Subsidized employment	.021*** .007	.005 .009	.007 .015	.005 .009
Certified skills	no	yes	yes	yes
N	5,388	5,388	2,720	2,668
Pseudo R ²	.002	.005	.003	.011

Note: The table reports marginal effects for the probability of receiving a callback based on probit regressions. The dependent variable is a dummy variable equal to 1 if the application gets a callback. Subsidized employment comprises all applications of applicants who were employed on subsidized jobs in the market or non-market sector, with or without skill certification. Non-subsidized jobs comprises all applications of applicants who were employed on non-subsidized jobs in the market or non-market sector, with or without skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a certified skill. Robust standard errors are clustered at the job level and reported below the marginal effects. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.24: The Effect of Having Been Employed in Non-Market Jobs vs. Market Jobs on Probability of Callback (Marginal Effects at the Mean)

	(1)	(2)	(3)	(4)
	All applicants		Gardener	Receptionist
Market sector experience	016.** .008	.001 .009	.002 .016	.002 .010
Non-market sector experience	.022*** .008	.004 .010	.011 .017	-.001 .010
Certified skills	no	yes	yes	yes
N	5,388	5,388	2,720	2,668
Pseudo R ²	.002	.005	.003	.010

Note: The table reports marginal effects for the probability of receiving a callback based on probit regressions. The dependent variable is a dummy variable equal to 1 if the application gets a callback. Market employment comprises all applications of applicants who were employed in the market sector, on subsidized or non subsidized jobs, with or without skill certification. Non-market employment comprises all applications of applicants who were employed in the non-market sector, on subsidized or non subsidized jobs, with or without skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a certified skill. Robust standard errors are clustered at the job level and reported below the marginal effects. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.25: The Effect of Subsidized and Non-Market Job Experience on Probability of Callback (Marginal Effects at the Mean)

	(1)	(2)	(3)	(4)
	All applicants	Gardener	Receptionist	
Non-subsidized market sector experience	.009 .013	-.003 .014	-.006 .023	.000 .014
Non-subsidized non-market sector experience	.021* .011	-.004 .013	.017 .022	-.014 .014
Subsidized non-market sector experience	.024** .010	.008 .012	.010 .020	.008 .011
Subsidized market sector experience	.019** .009	.002 .011	.008 .018	.001 .011
Certified skills	no	yes	yes	yes
N	5,388	5,388	2,720	2,668
Pseudo R ²	.002	.005	.003	.012

Note: The table reports marginal effects for the probability of receiving a callback based on probit regressions. The dependent variable is a dummy variable equal to 1 if the application gets a callback. Non-subsidized market sector experience comprises all applications of applicants who were employed in the market sector, on non-subsidized jobs, with or without skill certification. Non-subsidized non-market sector experience comprises all applications of applicants who were employed in the non-market sector, on non-subsidized jobs, with or without skill certification. Subsidized non-market sector experience comprises all applications of applicants who were employed in the non-market sector, on subsidized jobs, with or without skill certification. Subsidized market sector experience comprises all applications of applicants who were employed in the market sector, on subsidized jobs, with or without skill certification. Certified skills is an indicator variable equal to 1 if the applicant has a certified skill. Robust standard errors are clustered at the job level and reported below the marginal effects. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.26: The Effect of Job Characteristics on Probability of Callback (Marginal Effects at the Mean)

	(1)	(2)	(3)	(4)
	All applicants		Gardener	Receptionist
Market job offer	-.032*** .010	-.033*** .010	-.058*** .017	-.001 .011
Fixed-term contract	.013 .010	.013 .010	-.004 .016	.018* .010
Certified skills	no	yes	yes	yes
N	5,150	5,150	2,570	2,580
Pseudo R ²	.006	.012	.013	.015

Note: The table reports marginal effects for the probability of receiving a callback based on probit regressions. The dependent variable is a dummy variable equal to 1 if the application gets a callback. Market job is an indicator variable equal to 1 if the job offer belongs to the market sector. Fixed-term contract is an indicator variable equal to 1 if the job offer is a fixed-term contract. Certified skills is an indicator variable equal to 1 if the applicant has a certified skill. The total number of observations is slightly lower compared with the previous tables because the market / non-market status was missing for some job offers. Robust standard errors are clustered at the job level and reported below the marginal effects. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.27: The Effect of Certified Skills on Probability of Callback by Quintile of Unemployment Rate of the Commuting Zone where the Job was Posted (Marginal Effects at the Mean)

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Q1	Q2	Q3	Q4	Q5
Certified skills	.032*** .008	.065*** .019	.033* .018	.027 .017	.021 .016	.014 .015
Unemployment rate						
Mean	9.58	7.40	8.59	9.31	10.34	12.52
Min	5.45	5.45	8.20	8.95	9.90	10.90
Max	17.60	8.15	8.90	9.80	10.85	17.60
N	5,388	5,388	996	1,020	1,114	936
Pseudo R ²	.005	.014	.005	.004	.002	.002

Note: The table reports marginal effects for the probability of receiving a callback based on probit regressions. The dependent variable is a dummy variable equal to 1 if the application gets a callback. Certified skills is an indicator variable equal to 1 if the applicant has certified skills. QX stands for the number of the quintile of the unemployment rate of the commuting zone of the job offer. Mean, Min and Max denote the mean, the minimum and the maximum value of the quintile of the unemployment rate of the commuting zone respectively. The total number of observations is slightly lower compared with the previous tables because the employment zone was not identified for some job offers. Robust standard errors are clustered at the job level and reported below the marginal effects. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

Table 3.28: The Effect of Certified Skills on Probability of Callback by Quintile of Callback Rate of the Commuting Zone where the Job was Posted (Marginal Effects at the Mean)

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Q1	Q2	Q3	Q4	Q5
Certified skills	.032*** .008	.002 .002	.020 .012	.028 .019	.050*** .019	.074*** .027
Callback rate						
Mean	.080	.001	.050	.074	.101	.200
Min	.000	.000	.027	.065	.081	.127
Max	1.000	.022	.062	.079	.125	1.000
N	5,388	1,128	1,424	858	1,026	952
Pseudo R ²	.005	.018	.004	.004	.008	.006

Note: The table reports marginal effects for the probability of receiving a callback based on probit regressions. The dependent variable is a dummy variable equal to 1 if the application gets a callback. Certified skills is an indicator variable equal to 1 if the applicant has certified skills. QX stands for the number of the quintile of the callback rate of the commuting zone of the job offer. Mean, Min and Max denote the mean, the minimum and the maximum value of the quintile of the callback rate of the commuting zone respectively. Robust standard errors are clustered at the job level and reported below the marginal effects. * significant at 10 percent, ** significant at 5 percent, *** significant at 1 percent.

3.6.3 Examples of applications

Application email messages

For the type 1 application, the email message was the following :

Dear Madam, Dear Sir,

Following your offer XXX for a job of YYY, I am pleased to send you my application.

Please find enclosed my cover letter and my resume.

Yours sincerely,

ZZZ

For the type 2 application, the email message was the following :

Dear Sir/Madam,

I am pleased to submit my application for the position YYY following your offer XXX published on the Pôle Emploi website.

I am sending you enclosed my CV and my cover letter.

Yours faithfully,

ZZZ

Application reply email messages

Type 1 reply to the employer who contacted the applicant :

Dear Madam, Dear Sir,

Thank you for your reply to my application. But the fact is, I have just accepted another employment offer.

Yours sincerely,

ZZZ

Type 2 reply to the employer who contacted the applicant :

Dear Sir/Madam,

Thank you for your interest in my application. However, I cannot follow it up, as I have just accepted another job proposal.

Yours faithfully,

ZZZ

CV Receptionnist- Unemployed, 3 summer jobs

Mathieu Richard

3, rue d'Ypres
01000 Bourg-en-Bresse
06 26 26 93 40
mathieu.rchd@gmail.com

Born on 05/06/1992
Single

Driving license: B

PROFESSIONAL SKILLS

Good social skills, document monitoring, good computer skills, communication skills with various audiences

PROFESSIONAL EXPERIENCES

11/12 - 11/15 (Volunteer): Receptionist, Sports Association Sport in the City

09/15 - 10/15 (Fixed-term contract): Salesperson, Conforama

07/14 - 08/14 (Fixed-term contract): Crew member, McDonald's

09/13 - 10/13 (Fixed-term contract): Salesperson, Conforama

EDUCATION

2009-2011: Training in a "Local services, Specialization: Management of spaces open to the public" degree seeking to obtain the professional Baccalaureate

2009: Middle-school Certificate

FOREIGN LANGUAGES

English: beginner (reading + ; writing + ; speaking +)

IT

General office automation tools: word processing, spreadsheets, internet

INTERESTS

Handicrafts, Cinema, Sports

Cover letter Receptionnist- Unemployed, 3 summer jobs

Mathieu Richard
3, rue d'Ypres
01000 Bourg-en-Bresse
Tel : 06 26 26 93 40
mathieu.rchd@gmail.com

Monday, 29 January 2016

Object : *Application Receptionist*

Dear Sir/Madam,

Allow me to explain why I am well suited for your position as a receptionist.

After passing my middle-school certificate, I chose to prepare a professional Baccalaureate in "Local services, Specialization: Management of spaces open to the public". This choice corresponds to my strong interest in welcoming the public. During these studies, I was able to acquire several skills: communication with the public, administrative tasks, making appointments and understanding the functioning of local services.

I then chose to pursue this path and apply this knowledge. I have held fixed-term positions as a salesperson and a team member. I also volunteered three nights a week to work as a receptionist for a sports association. This experience has been very beneficial for me. I was able to develop as part of a team and meet the expectations of the people I interacted with, both users and staff. On the other hand, I had to carry out the administrative tasks entrusted to me and to learn how to participate in the secretariat. Thus, these three years of practice gave me the opportunity to confirm my interest in this field.

I think that the skills I have developed and the experience I have acquired will allow me to respond to your expectations. I would thus be happy to meet with you and discuss my interest in this position.

Yours sincerely,
Mathieu Richard

CV Gardener- Employed, market, subsidized, certified skills

Romain Moreau

1, rue Villeneuve
01000 Bourg-en-Bresse
06 46 61 96 41
romain.moreau.1992@gmail.com

Born on 22/04/1992
Single

Driving license B

PROFESSIONAL SKILLS

Planting and plant cutting techniques, maintenance of lawns, plants and flowers, use of mowing machines, knowledge of soils and plants

PROFESSIONAL EXPERIENCE

12/12 - 12/15 (Fixed-term Emploi d'avenir): Gardener, Blanc Mesnil Distribution

FORMATION

2015: Vocational title "Landscape worker" Level V

2009-2011: Training in a "Landscaping" degree seeking to obtain the professional Baccalaureate

2009: Middle-school Certificate

FOREIGN LANGUAGES

English: beginner (reading + ; writing + ; speaking +)

INTERESTS

Hand-ball

Music

Volunteer in an association promoting social and cultural activities

Cover letter Gardener- Employed, market, subsidized, certified skills

Romain Moreau
1, rue Villeneuve
01000 Bourg-en-Bresse
Tel : 06 46 61 96 41
romain.moreau.1992@gmail.com

29 January 2016

Object: Application for a Gardener Job

Dear Madam,
Dear Sir,

Allow me to explain why I am well suited for the position of gardener you are proposing.

After acquiring my middle-school certificate, I chose to orient myself towards the development and maintenance of landscaped spaces. I therefore did two years of training in a "Landscaping" degree in order to prepare the professional Baccalaureate. This training allowed me to acquire several skills: the implementation of earthworks, the installation of watering, as well as planting and landscaping techniques. On the other hand, I had the opportunity to work in a team and to understand the expectations of the people who were hiring me.

Today, I am pleased to have been able to benefit from a fixed-term contract in an "Emploi d'avenir" as a gardener for Blanc Mesnil Distribution. This initial experience encourages me to persevere in this field, especially as I obtained the vocational title of "Landscape Worker". At the same time, I have taken part in various sports, but also cultural and associative activities that gave me a taste for effort and commitment. I thus believe I will be able to meet your expectations and make use of my skills while working for you.

I would be delighted to meet you and would be pleased to answer any questions you may have.

Yours sincerely,
Romain Moreau

CV Gardener- Employed, non-market, non-subsidized, no certified skills

Mathieu Richard

Date of birth: 22/04/1992
Single
Driving license B

3, rue d'Ypres
01000 Bourg-en-Bresse
06 26 26 93 40
mathieu.richard.1992@gmail.com

TRAINING

2009-2011 Preparation of a professional Baccalaureate in "**Landscaping**"
2009 Middle-school certificate

EMPLOYMENT

12/12 - 12/15 **Gardener**, Paris Habitat OPH (fixed-term contract)

COMPETENCIES

Knowledge of plants, planting methods, size technique and use of cutting tools, maintenance of surfaces and lawns, adaptability (climate, building sites, etc.)

LANGUAGES

English Good written and oral notions

HOBBIES

Hand-ball
Music
Volunteer in an association promoting social and cultural activities

Cover letter Gardener- Employed, non-market, non-subsidized, no certified skills

Mathieu Richard
3, rue d'Ypres
01000 Bourg-en-Bresse
06 26 26 93 40
mathieu.richard.1992@gmail.com

Monday, 29 January 2016

Object: Gardener position application

Dear Sir/Madam,

I recently learned your had a gardener job opening and I would be happy to answer your needs.

Following my middle-school diploma, passed successfully in 2009, I took a strong interest in landscaping. I therefore attended a degree in order to prepare a professional Baccalaureate in this field. During these studies, I learned to conceive, develop and implement landscape projects. In particular, I worked on landscape development (drainage, watering), planting and decoration, as well as the use of the required maintenance equipment. I also took an active part in several sports and associative activities that allowed me to learn how to work in a team and to develop projects.

Since the end of my studies, I have sought to enhance my skills through professional experiences. I thus had an Emploi d' Avenir open-ended contract as a gardener for Paris Habitat OPH. This experience allowed me to extend my training and sharpened my interest in gardening. I was thus able not only to deepen my theoretical knowledge but also to acquire hands-on skills by working in a team where a rotation of the tasks took place. This first experience encourages me to persevere in this field.

I am highly motivated by the prospect of continuing on this path and working with your team. I therefore stress again all my interest in your job opening.