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Mobility and spatial accessibility of urban women : Capabilities and well-being

Vandana Vasudevan

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THÈSE

Pour obtenir le grade de

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Spécialité : Urbanisme - Mention aménagement

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Présentée par

Vandana VASUDEVAN

Thèse dirigée par **NICOLAS BUCLET**, Communauté Université
Grenoble Alpes

et codirigée par **SONIA CHARDONNEL**, Communauté Université
Grenoble Alpes

et **SONIA CHARDONNEL**

préparée au sein du **Laboratoire Pacte, Laboratoire des
sciences sociales**

dans l'**École Doctorale Sciences de l'homme, du Politique et
du Territoire**

Mobilité et accessibilité spatiale des femmes en milieu urbain : capacités et bien-être

Mobility and spatial accessibility of urban women : Capabilities and well-being

Thèse soutenue publiquement le **5 juillet 2019**,
devant le jury composé de :

Monsieur NICOLAS BUCLET

Professeur, UNIVERSITE GRENOBLE ALPES, Directeur de thèse

Madame Sonia CHARDONNEL

Chargé de Recherche, UNIVERSITE GRENOBLE ALPES, Examineur

Madame Sanjukta BHADURI

Professeur des Universités, School of Planning and Architecture, Co-
directeur de thèse

Monsieur Nicolas DUOAY

Professeur, UNIVERSITE GRENOBLE ALPES, Président

Madame Muriel GILARDONE

Maître de Conférences, UNIVERSITE DE CAEN, Examineur

Madame Ana Gil SOLA

Maître de recherche, UNIVERSITE DE GOTEBOURG, Examineur

Madame Marie-Hélène ZERAH

Directeur de Recherche, UNIVERSITE PARIS DIDEROT, Rapporteur

Madame Kamala MARIUS

Maître de Conférences, UNIVERSITE BORDEAUX MONTAIGNE,
Rapporteur



Mobilité et accessibilité spatiale des femmes en milieu urbain : capabilités et bien-être

JUILLET 2019

UNIVERSITÉ GRENOBLE-ALPES

Mobility and spatial accessibility of urban women: capabilities and well-being



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Vandana

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DEDICATION

This thesis is dedicated to all the women respondents of this study who opened a window to their lives and allowed me a glimpse. For their generosity, warmth and trust.

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This thesis is the outcome of blood, toil, tears and sweat of a few years, like most doctoral works. However, enrolling for a Ph.D. as a middle aged mother of growing kids and being mostly located far away, in another country, brought with it its own set of challenges. The ‘blood’ manifested itself as high blood pressure, the toil was literally backbreaking, the tears were exaggerated by hormonal fluctuations and the sweat in Delhi’s 40 plus degrees was exhausting!

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Abstract

Historically, women have been kept out of the city planning process due to embedded social and cultural attitudes which restricted them to the private sphere. As planning, architecture and engineering were male dominated professions, few women had a voice at policy-making level of city building, a situation which has not altered drastically even today. With the feminization of the labour force, more women began to occupy the public space and use urban infrastructure.. Yet, it was not until the 1970s that feminist geographers began to point out that women's movement pattern in the city was distinctly different from that of men's. Women made shorter, more frequent trips and 'trip chained' i.e. linking their work trips to trips made for household and family related needs. This was different from men's trajectories which were largely linear. Women were also encumbered by babies and grocery bags and pushed strollers while on the move. They had less access to private vehicles, walked more and used more public transport than men did. These behaviors have changed over time to some extent in western societies but remain stubbornly in place in developing countries.

Researchers observed that the peculiarities of women's mobility was due to two factors . Firstly, despite being in the labour force in increasing numbers, women's responsibilities at home did not change. Working women bore 'double burden' of both work and household/child care responsibilities. The resulting 'time poverty' impacted their professional careers as women have been found to take jobs closer to home so that commute time can be saved. Consequently, women have restricted themselves to certain types of occupations that can be performed without threatening the management of the home front. Additionally, women's mobility was restricted spatially and temporally by the risk of sexual harassment in public spaces including in transit environments like buses and metro stations.

The studies which brought these issues of gendered mobility to the forefront have almost always been done in western contexts. Very little is known about the mobility of urban working women in less developed countries of Asia. Further, the role and impact of mobility on women's overall lives has not been examined in existing literature. This study uses a qualitative approach to enhance our understanding of urban women's experiences of the city as they move through public spaces in the following ways :

1)Using Amartya Sen's capability approach, the study micro examines urban women's daily mobilities and their time usage in different activities performed during a working day. Having done that, it focusses on how their capability for mobility affects other capabilities necessary for well-being, such as the capabilities for leisure, for health and fitness or for nurturing valued relationships. Such an approach, of looking at women's mobility through the lens of capabilities and its role in women's overall lives is a hitherto unexplored perspective.

2)The study puts the spotlight on accessibility, showing that while mobility is vital, it is an insufficient condition to improve people's quality of life. What is more meaningful as a goal for policy makers is the improvement of spatial accessibility, which encompasses reachability and quality of the journey undertaken.

3)In order to operationalize the capability approach, a new visual technique named 'Game of Cards' using picture cards was created to elicit responses about achieved and potential functionings.

4)As the primary research was done in three cities across a developed and developing country-France and India- it offers valuable insights about the commonalities in the lives of working mothers, that cut across the binary of developed and developing countries.

The study concludes that the capability for mobility and spatial accessibility is not only vital on its own for women but is also instrumental in the attainment of other capabilities necessary for well-being. Policy initiatives that impact mobility hence have the potential to ameliorate women's daily lives by reducing their temporal constraints and allowing them to pursue those activities that they consider important for their well-being.

Résumé

Historiquement, les femmes ont été exclues du processus de planification de la ville en raison d'attitudes sociales et culturelles enracinées qui les limitaient à la sphère privée. La planification, l'architecture et l'ingénierie étant des professions à prédominance masculine, peu de femmes se sont exprimées au niveau des décideurs politiques en matière de construction des villes, une situation qui n'a pas radicalement changé, même aujourd'hui. La féminisation de la main-d'œuvre a entraîné une augmentation du nombre de femmes occupant l'espace public. Ce n'est que dans les années 1970 que les géographes féministes ont commencé à souligner que les formes de mobilité des femmes dans la ville étaient différentes de celles des hommes. Les des femmes, plus courts et plus fréquents forment des schémas en toile d'araignée, tandis que les trajectoires des hommes sont en grande partie linéaires. La mobilité des femmes est souvent contrainte par l'accompagnement en poussette des jeunes enfants doublé du port des sacs d'épicerie. Dans plusieurs pays, elles ont moins accès aux véhicules privés marchent plus et utilisent plus les transports publics que les hommes. Ces particularités ont été attribuées à deux facteurs :

Premièrement, les femmes qui travaillent assument une «double charge» tant pour le travail que pour les tâches ménagères et familiales. La « pauvreté temporelle » qui en résulte influence leur carrière professionnelle, car les femmes prennent des emplois plus près de chez elles afin que le temps de trajet puisse être raccourci. Par conséquent, les femmes se sont limitées à certains types de professions qui peuvent être exécutées sans menacer la gestion de la sphère domestique. En outre, la mobilité des femmes était limitée dans le temps et dans l'espace par le risque de harcèlement sexuel.

Les études qui ont mis au premier plan ces questions de mobilité de genre ont presque toujours été réalisées dans des contextes occidentaux. On sait très peu de choses sur la mobilité des travailleuses urbaines dans les pays asiatiques moins développés. De plus, le rôle et l'impact de la mobilité sur la vie des femmes en Asie, n'ont pas été examinés dans la littérature existante. Cette thèse utilise une approche qualitative pour contribuer à la compréhension des expériences urbaines des femmes qui se déplacent dans les espaces publics de la manière suivante :

- 1) En utilisant l'approche par les capacités, l'étude examine les mobilités quotidiennes des femmes des villes et leur emploi du temps dans différentes activités effectuées au cours d'une journée de travail. Cela étant fait, l'accent est mis sur la façon dont leur capacité de mobilité affecte d'autres capacités nécessaires au bien-être, telles que les capacités de loisirs, de santé et de relations personnelles.
- 2) L'étude met l'accent sur l'accessibilité et montrant que, même si la mobilité est vitale, elle n'est pas une condition suffisante pour améliorer la qualité de vie des personnes. L'amélioration de

l'accessibilité spatiale, qui englobe la capacité d'atteindre une destination ainsi que la qualité du parcours, devrait être un objectif plus important pour les décideurs

- 3) Afin de rendre opérationnelle l'approche de capacité, une nouvelle méthode d'entretien appelée « Jeu de cartes » s'appuyant sur des cartes d'image a été créée pour obtenir des réponses sur les activités et « états d'être » (correspondant aux « fonctionnements » dans la terminologie de l'approche par les capacités) réalisés et souhaités par les femmes interrogées.
- 4) Comme les travaux de terrain a été faite dans trois villes situées dans un pays développé et en développement -la France et l'Inde- elle offre des informations précieuses sur les points communs dans la vie des mères qui travaillent, qui dépassent l'opposition binaire entre pays développés et en développement.

L'étude conclue que la capacité de mobilité et d'accessibilité spatiale n'est pas seulement vitale pour les femmes, mais qu'elle contribue également à la réalisation d'autres capacités nécessaires au bien-être. Les initiatives politiques qui influent sur la mobilité ont donc le potentiel d'améliorer la vie quotidienne des femmes en réduisant leurs contraintes temporelles et en leur permettant de poursuivre les activités qu'elles considèrent importantes pour leur bien-être.

BACKGROUND AND INTRODUCTION

In his 1929 classic “The City of Tomorrow and its Planning” Le Corbusier presents imposing schemes for the city of the future and lays out plans for how work and leisure should be organized for a modern, functioning city. Towards the end of the book, he writes “...and all such considerations pertain to man and man’s height varies, say between 5 feet 6 inches to 6 feet 2 inches. And when man finds himself alone in vast empty spaces he grows disheartened.” (Corbusier, [1929], 1987p.237). In Corbusier’s scheme of the sixty-floor skyscraper where all commercial activity would be packed in in the city centre and the garden city where the hard working men would return for repose, everything was unequivocally built for the man, even taking into account his typical physical proportions. The city was not envisaged as a place which women would venture into.

Corbusier was neither alone nor the pioneer of this exclusionary view. In Aristotle’s texts, politicians were members of the “polis” those with rights, the members of the city. Those excluded were foreigners, slaves and those who did not have a right to partake in politics though they lived in the city i.e. women and children. The historical ideal of separate spheres has had and continues to have enormously powerful effects. For example, in the 19th century and beyond, it legitimized the exclusion of women from the polity; it gave social sanction to the treatment of women as the property of men (Davidoff and Hall, 1987; Pateman, 1989). In contemporary times, its influence continues to be felt in the persistence of inequalities in economic and political power. Important associations remain between masculinity, public space, and the city, on the one hand, and between femininity, private space, and suburbs on the other hand. (Bondi and Rose, 2003). The city is thus sexist, whose outward manifestations such as the urban design, urban structure, transport infrastructure and even urban services like toilets and street lights are ill-designed to meet women’s needs. They are evidence of deeply-held assumptions about women's role in society, which is that women will mostly be confined to the ‘private space’ and the ‘public space’ is for male members of society. (Greed, 1994).

As planners, architects, surveyors, engineers and city managers are professions which are male-dominated, few women have a voice at policy-making level of city building. Although 'planning is for people' women suffer disadvantage within a built environment that is developed by men, primarily for other men (Darke et al, 2000). Linda McDowell, (1993) puts it well when she says, ‘*The gangs, the urban crowds, the flaneurs, the political activists, even the stolid figures of urban commuters were never encumbered by a baby, a stroller and the week’s shopping*’.

Against this background, feminist geographers have identified certain peculiarities in women’s movement patterns and compelled the acknowledgement of women as actors in the urban landscape. These peculiarities are a product of women’s dual lives spanning their professional and personal world. Several studies and surveys have shown that despite their increased representation in the labour market over the

latter half of the 20th century, women continue to handle more household responsibilities than men. For example, Phipps et al (2001) have shown that women in dual-career households face more time pressure than their husbands. Even if their total work hours (paid and unpaid) are equal, the fact that women are more often responsible for domestic work that cannot be postponed generates more stress for them. The authors also argue that women's time stress tends to increase because they have to cope with different sets of responsibilities and are subject to social norms that lay more responsibilities on them for the way the household is run or family members are publicly presented. A UN report of 2010 (World's Women, 2010) which analyses time use by men and women in several countries shows that women spent more time in the activity of "Preparing Meals" across the world, with no exceptions. In 13 Asian countries surveyed, women spent 1 hour and 45 minutes on this task compared to 15 minutes by men. In 26 countries of economically developed regions, women spent one and a half hours while men spent only 25 minutes.

To cope with this double burden, women have adopted certain practices such as choosing jobs close to home even if it is for lesser pay. They make many short trips to be able to accomplish several domestic tasks outside the house, sometimes combining their wage and non-wage trips. Their mobility pattern has been found to be more complex and web-like while that of men is more linear, although it is slowly changing in western countries. Women are also greater users of public transport and walk more than men, mainly to compensate for their lower ownership of personal vehicles. Even in the Global North where women are almost equally represented in the labour force, for urban policymakers, public transport systems are still designed for the male citizen. In fact, the growth of automobile dependent societies in itself points to a deliberate snubbing of the mobility needs of women. (Uteng, 2012). Fear of sexual harassment in transit environments such as bus stops, railway stations, within vehicles and indeed on the streets in general, impose space and time limitations on women's mobility.

Unequal freedom to be mobile, as compared to men, has meant that women have been unequal participants in society, unequal users of public space and have been lesser citizens than men have in their ability to stake claim to the physical geographies they inhabit. This has also led to lower accessibility to places i.e. ability to physically reach desired destinations scattered in the physical space. Diminished mobility and accessibility impinge on women's full right to the city as equal citizens. When this right is not realized, they face significant obstacles to educational, economic, and political opportunities. Women's life chances are often worse than men's even if their material resource holdings and personal skill sets are equal (Brown et al, 2005).

1. Urban women

The world is rapidly urbanizing. According to UNFP figures, 5 billion of the world's people will be living in cities by 2030. Each month 5 million people are added to the cities of the developing world and it is estimated that by 2030, 1.5 billion girls will be part of urban areas. Migration for better prospects is one of

the key reasons for urbanization and women are a significant proportion of such migrants who come to the city in search of better jobs and facilities for themselves and their children. Hence the number of women in cities is expected to show a continuous upward trend. Women migrants continue to be caretakers of the family and by extension of the community. It is important that they lead safe, productive lives in the cities they live in so that they in turn nurture fulfilled and productive families.

2. More working women

Feminization has probably been the most significant change occurring in the labour market of developed countries starting from the second half of the 20th century. The rise of female-headed single-parent families contributes to the resulting need for women to be “breadwinners”. Between the 1960s and the 2010s, paid employment among women aged 25-59 rose from 50% up to 78% in France. Similar trends are to be reported in Europe and other western economies. However, there still is a strong wage differential between men and women, and part of it may be due to the spatial conditions that affect access to employment. The presence of more women in the labour force in urban places and their lesser mobility compared to men calls for relooking at factors which shape women’s mobility and the constraints to spatial access faced by them.

Gender parity is a Millennium Development Goal adopted by the UN in its summit in 2000. The discourse on women’s right to the city is not more than two decades old and is not adequate. Further, while in academia the relevance of the gender perspective in urban planning has been duly voiced, in practice gender mainstreaming in city planning remains underdeveloped. Clara Greed incisively observes in a recent essay (Greed, 2018) that after many years of promoting the motorcar, planners in western countries, have made a volte-face and now condemn car use rather than promoting it, in the name of sustainability. Like in the past when women were left out of planning decisions which eventually made their life more difficult (e.g. suburbanization, zoning) the modern sustainability movement is also gender blind, as it fails to recognize that many women are time-poor and the only way to carry out their elaborate trip-chaining journeys is by car. She critiques the “*assumed inviolable holiness, such as the unquestioned worthiness of the environmental movement*” for being disengaged from the realities of everyday life of women.

Thus, there is tremendous scope yet, in both developed and developing countries, for more aspects to be researched and a need to examine the issues involved in depth, so that planners will have greater clarity on how to incorporate the female perspective in policy decisions. It is against this background, that this study aims to make a contribution.

OBJECTIVE OF THE STUDY

To understand the capability for mobility and spatial accessibility of urban women and its impact on their overall well-being.

This is a cross-country study conducted in three cities across India and France. Detailed studies of women's mobilities and transport use have mostly been focused on and conducted in the urban western world. Few developing country research and development projects have adequately accounted for the intersection of gender, transport and mobility (Peters 2001). The few that have been done are in the rural context and a majority of them have been about African women while empirical literature that establishes women's daily mobilities in Asian countries are rare, exceptions being (Fernando and Porter, 2002) and (McCleery, 2005). Studies that focus on accessibility as a subset of mobility, for women in developing countries are even more scarce.

Given that Asian countries like India and China are expected to be at the vanguard of the urbanization wave of the next few decades (McKinsey Global Report, 2010), the gender-transport-mobility link is important to understand, in these contexts. As academic publications are dominated by studies done by and in Europe and America, the lack of knowledge about other parts of the world risks the perpetuation of stereotypes. Mainstream media in the west popularized the poor sari-clad women walking under the hot Indian sun because she cannot afford transport. However, what needs more examination is how women, in interior urban areas, beyond Mumbai, Delhi or Bangalore, are using available resources to negotiate public space and what constrains them from realizing their full potential as human beings.

A cross cultural study of urban women between an economically developed country of the Global North and a developing country of the Global South has not been hitherto undertaken, to the best of our knowledge. As I am an Indian researcher affiliated to the University of Grenoble Alpes, this study was an opportunity to contribute a new perspective to the body of knowledge by studying the lives of urban working mothers in two different countries- France and India. Undoubtedly, there are substantial differences in factors which might affect freedom for mobility and spatial accessibility of women in the developing and developed world. Even so, some scholars believe that the daily lives of urban women in developed and developing countries have more similarities than what is evident on the surface. As Tanupriya Uteng's report(2012) for the World Bank on "Gender and Mobility in developing countries" points out:

"Surprisingly, many similarities are to be found when comparing gendered travel behavior among the developed and developing parts of the world. Common features comprise a gendered differentiated access and attitudes to private and public transport, differences in child and elder care responsibilities, the resultant escort trips and finally the differences emerging from the contextualization of female roles"

This idea was also informed by the concept of “Ordinary Cities” elaborated in Jennifer Robinson’s eponymous book, the core proposition of which is that all cities should be viewed as ordinary instead of as distinct categories of “Global North” and “Global South” and “rich” “poor” commonly done in urban studies. A more cosmopolitan form of theorizing can result in political and intellectual benefits and enable cities to learn from each other’s experiences. (Robinson, 2006).

It seemed to be an interesting proposition to study if class or marital status or number of dependents override gender whether in France or in India. Does a poor woman in France have more freedom than a rich woman in India? Does having more children constrain working mothers in all contexts or is this mitigated if there is help available to raise the children? How does being a single mother in a western context compare with being a single mother in small town India? These are examples of comparisons and contrasts that we thought could be drawn between the women in the two diametrically opposite countries. The potential for such explorations made the idea of studying women in both countries interesting.

The theoretical framework used for the study is Amartya Sen’s Capability Approach. The Capability Approach’s amenability to gender studies and its open structure that allows different dimensions of human well-being to be considered made it suitable for this objective. There are four research questions that are addressed in this study:

Research Question 1: What are the mobility characteristics of urban working women?

Research Question 2: What is the extent of the Capability for Mobility among urban women and what factors influence this capability?

Research Question 3: Do women who have the capability for mobility also have the capability for spatial access?

Research Question 4 has two parts:

4a. How does the capability for mobility and spatial accessibility affect other capabilities required for well-being?

4b. What are the constraints to achieving the capabilities required for overall well-being?

The thesis is organized into three parts consisting of a total of ten chapters. Part 1 elaborates on literature about women’s gendered experience of the city, women’s mobility and accessibility and the key elements of the capability approach. It then describes the research plan and methodology including a new visual technique to operationalize the capability approach that was developed and used for the primary data collection. Part 2 presents case studies of three cities in which the four research questions are examined in detail. Part 3 gives the overall results, policy implications, conclusions and limitations of the study. **At the end is a summary in French, annexures providing supplemental information and the references for each chapter given in APA style and arranged alphabetically.**

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PART 1: Theoretical and Methodological Approach

CHAPTER 1 : LITERATURE REVIEW

This chapter is a review of the literature on the principal domains that this study touches. Part A is an exposition of feminist perspectives on women's experiences in the city. Part B dwells on the literature on Mobility and Accessibility and Part C describes the key concepts, debates and applications of Amartya Sen's Capability Approach, which is the theoretical lens used in this study.

SECTION A: FEMINIST PERSPECTIVES ON WOMEN'S EXPERIENCE OF THE CITY

I. Historical roots for women's exclusion from city planning

The historical reason for the alienation of women from urban planning lies in the idea of citizenship which emerged in the Enlightenment period and included only men as members of society with full rights. Liberal thinkers developed the social contract theory in the 17th and 18th centuries which guaranteed the rights and liberties of citizens and laid down their duties. The citizens it referred to were only the male members of society. It was for them that the city was built and furnished. Influential sociologists of the 20th century like the Chicago school of the 1920s, Henri Lefebvre (1974) and Manuel Castells (1983) did not distinguish women as separate social actors. Lefebvre's idea was that the *citadin* (citizen) had two rights - Firstly, the right to appropriation of urban space i.e. the right to fully and completely use urban space in their everyday lives. The rights to live, play, work, occupy, transform, and characterize their urban spaces. The second is the right of inhabitants to take a central role in decision-making surrounding the production of urban space. It entails the involvement of inhabitants in institutionalized control over urban life including participation in the political life, management, and administration of the city (Purcell, 2003).

Feminist theory has criticized these traditional notions of "citizenship" and "right of a citizen to the city" as being blind to unequal gender relations that exist in urban spaces. Tovi Fenster (2006) in her paper "The Right to the Gendered City and different formations of belonging in everyday life" challenges the Lefebvrian notion of "citizenship" and "right to the city" arguing that it lacks sufficient attention to patriarchal power relations which are ethnic, cultural and gender-related. The right to the city, that is, the right to use and the right to participate are violated because of gendered power relations, which intersect with ethnic and national power relations (Fenster, 2006). Women were excluded from the public sphere of citizenship from the beginning. Women have been the subject of citizen discrimination in numerous cultures and political contexts at all scales and sectors; from the private – the home, to the public – the city and the state, in economic, social, welfare and political contexts (Yuval-Davis, 1997) (McDowell, 1999) (Lister, 1997; Young, 1990). They were hence unequally placed to exercise the rights to the city or the right to participate in the affairs of the city.

The traditional approach to urban planning studied a spatial problem and came up with solutions deemed universal but in reality, they were obtained overlooking gender differences among the inhabitants of that space. Different feminist researchers have different views about the reasons for the exclusion of women from the planning process. (Greed, 1994). Liberal feminists believe that planning is not a conspiracy against women; however, men have been making decisions about the city based on their own life experiences, not with a motive of deliberately excluding women. More radical feminists believe that this exclusion is premeditated. They might interpret gendered spatial divisions as deliberately designed to marginalize women and to keep them in a specific place within society in order to maintain patriarchal power. Socialist feminists argue that whilst the existence of patriarchy is indisputable, it is a manifestation of capitalism and the consequent class differences as the root cause of inequality (McDowell, 1983). Despite variations in the arguments about the source of the exclusion, feminist scholarship in urban studies has thus indubitably established the centrality of gender to analyzing cities and urban life.

II. Recognizing the difference- Feminist Scholarship relating to Gendered Spaces in Urban Life

In the 1970s, feminist geographers began to point to the neglect of women and to the perpetuation of inaccurate stereotypes about women and men in human geography research (Hayford, 1974; Tivers 1978; Monk & Hanson, 1982). This 'women and environments' literature began to make women visible as urban actors and to denounce the inherent sexism of the capitalist city characterized by a gendered separation of 'productive' and 'reproductive' spheres (McDowell, 1993). Feminist geographers and feminist historians have emphasized how, from the first moments of suburban development, the distinction between city and suburb was imbued with ideas about separate spheres for men and women, in which the public domain of the urban centre was both deeply masculine and associated with social, economic, and political power. Conversely, the suburb came to be associated with middle-class domesticity, femininity, and dependence (e.g., McDowell, 1983; Davidoff and Hall, 1987; Mackenzie, 1989; Poovey, 1989). But this position was eventually criticized as exaggerating the social isolation of suburban women and their lack of agency (Dyck, 1989, 1990; England, 1991, 1993) while underplaying differences within suburban families in terms of race, sexuality and class. Geraldine Pratt and Susan Hanson (Pratt and Hanson, 1994; Hanson and Pratt, 1995) argued that intersections of race, class, sexuality, age and gender never operate a-spatially but are inextricably tied up with the particular spaces and places within which, and in relation to which, people live. The view of the spatial and local determining other dimensions of identity like race, class and gender was later supported by (Melissa Gilbert, 1997); Linda Peake, 1997) among others.

Sociologists have seen space as not just inherited from nature or only determined by the laws of geometry but

produced and reproduced by human actions and intentions. “Social space” a concept introduced by Henri Lefebvre, is a space that is a social construction based on values of the society in which it is situated and actively produced by the people who make their lives in that space.. A space, according to Lefebvre, is not a neutral setting where life transpires. Instead, the ensemble of the built environment, the roads, walls, symbols, signs and everyday routines of the people inhabiting that space are thus representations of dominance and power, privileging certain types of actors over others, encouraging some activities and inhibiting others (Lefebvre, 1991).

A geography of power underpins the dynamic of everyday practices and the social and political organization of a whole host of institutions scattered across the contemporary geographical space (Allen, 2003). When patriarchal power viewed cities in terms of private and public space and attempted to confine women to the private sphere, it was both a specifically spatial control and, through that, a social control on identity (Massey, 1994). The next section dwells on how the idea of equating women with ‘private space’ and men with ‘public space’ continues to have repercussions in the contemporary world and impacts how each gender experiences the city.

1. Private and Public Space

The notion of separate spheres for women and men has operated as a powerful influence within urban planning, creating an environment that circumscribes women's use of space and thereby reinforces associations between femininity, privacy, and suburban space (Tivers, 1985; Mackenzie, 1989; Roberts, 1990). It further entangles with notions of morality whose impact is felt by women as it creates another binary of “good woman/”fallen woman” where the “good woman” is the one who stays within the private sphere while the “fallen woman” is in the streets (public space). (Mackenzie, 1989; Valverde, 1991; Walkowitz, 1992; Wolch & DeVerteuil, 2001; Malone, 2002). In a study of urban women in contemporary India, Radhakrishnan, (2009) shows that while women working in India’s modern IT sector contribute to the functioning of the neoliberal economy, they are expected to acquiesce to norms of respectable femininity, a notion informed by an intertwining of nation, gender and class.

As political philosopher Carol Pateman points out (Pateman, 1989) men have always had a legitimate place in both public and private spaces. Men have been seen both as heads of families—so as husbands and fathers they have had legally sanctioned power over their wives and children—and as participants in public life. While women have never in reality been completely excluded from the public world, their day-to-day experience confirms the separation of public and private existence. Women were expected to use public spaces in rational, goal oriented ways and not for irrational pleasure seeking. Consequently, public spaces are neither planned nor designed to enhance women’s access to them. (Phadke, 2006; Phadke et al, 2011). Fenster puts forward the view that the power to control and arrange their home space is what makes women feel they belong there. However, their lack of representation in designing spaces in the public sphere leads to a sense of disconnect from it- as though public space was designed by men and is being used/misused

by men, so they have nothing to do with it. Belonging is about being involved in decision making- about the appropriation of space by being involved in shaping it. The historical absence of women in urban planning results in men creating urban spaces from their perspective and women remaining alienated from it – literally in terms of avoiding that space as they see it as “by and for the men” to emotionally disengaging from the space (Fenster, 2006).

2. Place or “Non-place”

Women’s gendered experience of cities can also be understood from the dimension of space versus place. In the classic paper “Space and Place: A humanistic perspective” geographer Yi Fu Tuan (Yi Fu Tuan, 1974) writes that both space and place define the nature of geography and yet there is a difference. The interpretation of spatial elements requires abstract thought, quantifiable data and the language of mathematics. Place, on the other hand, is a location and in that sense to be explained under the broader framework of space. But place is also much more than that as a place participates in the identity of whoever is in it. Place is more than a spot in abstract time and space; it has a significance, an identity. A place is the product of a social relationship. A “non- place” is a term introduced by French anthropologist Marc Augé (Augé 1992) in an eponymous book. A non-place is a monofunctional and compartmentalized place with continuous circulation and not conducive to social interaction. It is a vacuous element with no identity. For example, motorways, airports or hotel rooms. An accumulation of “non-places” creates a “generic city”, homogenized and stripped of identity (Rem Koolhaas, 1997).

If we look at this gendered experience through the lens of “place” and “non-place”, public spaces for women in many contexts are “non-places”. Spaces that they traversed as a matter of routine, using infrastructure that linked and connected but did not communicate with them. The city for many women is hence a generic city.

Scholars (Wilson, 1991) have pointed out that the city offers anonymity to women which fosters a sense of freedom and liberation to those women who were living in socially imposed identities outside the city, say, back home in their small towns or villages where social norms are more oppressive. A large, busy metropolis allows women to slip into its in-between spaces as anonymous individuals and be part of public spaces in a way that reduces risk. (Phadke, 2006). Cities help to mask identities (sexual, social, political) and stay away from the attention of those who have power over individuals. (Young, 1995) (Wilson, 1991).

While the freedom that urban contexts offer women is indeed noteworthy and desirable, feminist writers like Judith Garber (2000) argue that it is not the ability to turn nameless and faceless but the ability to show one’s identity fully that is a real marker of liberation. Women need to be comfortable in public spaces. Comfort suggests not an absence of violence but having an active sense of belonging. Yi Fu Tuan found in his research some city plans of the mid-19th century that represented the city of femininity. These were plans of cities of Europe and North America (Berlin, London, New York) which did not represent buildings or urban structures but the places where women could get together and forge a common identity. These plans

did not show the tectonic masculine city of the built environment but of places, of galleries, women's clubs, small dance halls, cafes, meeting points, schools for illiterate women and women's clubs. These were places where Suffragettes, social workers or upper-class women frequented seeking relaxation, sociability or culture, something that was only allowed by men in that era. These women's experiences are an example of what can be possible- how women can indeed belong to public places in their city and not have to hide who they are.

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SECTION B: MOBILITY AND ACCESSIBILITY

I. Mobility

Mobility is both the ability to travel to destinations of choice and the amount of movement necessary to do so. (Arora, 2009). The ability to travel is seen as positive mobility from the socio-economic perspective since it indicates that people are travelling for employment, education and other purposes thus enabling value addition. On the other hand, the amount of movement is seen as negative mobility because it uses resources, like time and money, which could have been better utilized to upgrade one's quality of life (Tiwari, 2014). In his book "On the Move" Tim Cresswell (Cresswell, 2006), distinguishes between mere movement and mobility. While movement is an abstract notion situated in the abstract notions of absolute time and space, he considers mobility to be a social facet of life imbued with meaning and power and "composed of elements of social time and social space" (Cresswell, 2006 pp.4). A train going from Paris to Lyon is moving through space and time but the schedule, timings, divisions of first and second class, purchase of ticket, locking of doors, checking of ticket by the controller etc. correspond to a specific use of that space and time, having implications on the passengers' mobility freedom.

In an ideal scenario, mobility is a personal freedom which translates to not having one's mobility constrained in any way and being able to move about and go wherever one pleases at any time. However, in reality, many forces constrain our personal mobility vividly described by Mimi Sheller in "Mobility, Freedom and Public Space" (Sheller, 2008). She includes our own physical capacities when faced with various kinds of terrain (uneven surfaces, slopes, steps); spatial and temporal constraints that keep us out of certain places (stairs, walls, gates, locks, fear of darkness, closing times, schedules, etc.); social obligations (familial ties, work-related obligations, positions related to age or gender, etc.) that may prevent us from leaving certain locations, as well as mental and attitudinal constraints such as the skills and cultural outlooks that enable and encourage a disposition to be mobile (Sheller, 2008).

Mobility is both a product as well as an agent of producing social space. Mobility freedom, in the modern world, however, is still unevenly distributed and is closely associated with forms of power that deny some groups the mobility that others exercise. (Sheller, 2008). Struggles over space reveal the implicit hierarchies,

the ordering of space, the rules, and the exclusions in order to maintain particular visions of the orderly city (Beebejaun, 2017). Mobility is an "intermediate good" that people use to access resources needed to satisfy their needs and the realization of their projects. Because these resources are unevenly spread, often over extensive daily territories, the differences in mobility potential can create or exacerbate factors of social inequality (Chardonnel, 2012).

An important milestone towards understanding the role of time and space in an individual's life was when Torsten Hagerstand, a Swedish geographer addressed the European Congress of the Regional Science Association in 1969. In a paper entitled "What about people in Regional Science?" Hagerstand drew the attention of planners and policymakers to the life of the individual. In each moment, the individual plays a particular role- worker, family person, shopper etc. Each role is carried out for a given duration at a specific time and place often in conjunction with other people and services and in a certain sequence. The places where these roles have to be enacted are spatially diffused and are available for a fixed duration of the day. In order to access them, time must be expended to move in space. For e.g.: for a working mother to move from home to her workplace which is 10 kilometres away, she has to spend a certain amount of time to traverse the distance. So, time is traded for being able to move in space. This time also depends on the resources for mobility available to her. If she is an automobile owner she will trade less time to achieve the same trade-off, than if she was a walker. The mode available to the person determines her "speed limit." This speed limit achieved depends on urban characteristics like area in the city (central business district, peri-urban) and congestion at different times of the day on the concerned road segments. However, individual accessibility is influenced more by the activity schedules and particular sets of constraints that people and households face, and less because of differences in urban form (Weber and Kwan, 2003).

II. Women's Mobility

"Mobility is a resource to which not everyone has an equal relationship" (Skeggs, 2004, pp 49). This is particularly true for women whose movement in the city is a function of historically embedded socio-cultural factors.

There is an 'intrinsic relationship between masculinity and travel' (Wolff, 1993) which runs very deep through the socio-spatial order. Mobility seems to be connected with masculinity, whereas sessility or sedentarism appears as feminine. (Wolff, 1993). Movement outside the house for the sake of bringing home the bread or acquiring the means to a livelihood (education) has by default been a man's duty as well as his prerogative, a belief which governs most societies even today. However, it is not that women did not seek autonomous mobility. Throughout history, women have undertaken voyages as explorers overcoming huge obstacles. For example, Jeanne Baret, the French botanist of the 18th century who joined a journey to travel around the globe and help classify hundreds of species of plants. She had to disguise herself as a man because the law of the time forbade women from travelling on French Navy vessels. In 1889, Nellie Bly at the age of 24 raced around the world in an attempt to break the record of Phileas Fogg, the fictional hero

of *Around the World in 80 days*. There are many such examples of women who have fought insurmountable odds to quench their thirst for travel. Women refugees take their families along to make a new life in another country or make arduous journeys to holy lands as pilgrims.

In the 1970s, feminist geographers began to question the assumptions underlying conventional transport planning. They began to distinguish women's patterns of mobility in urban space from those of men and rejected the 'neuter commuter' assumption (Law, 1999). Using aggregate travel data and travel diaries, numerous studies in developed countries reported consistent and significant gender differences in trip purpose, trip distance, transport mode and other aspects of travel behaviour. (See 3 ahead, "Characteristics of Women's Mobility Patterns"). Research has identified two roots of gendered mobility– the fear of violence in public places and the unequal division of responsibilities on the home front for the difference between male and female patterns of mobility. The resulting literature branched off in these two strands.

1. Fear of public spaces

Public spaces are those spaces where all citizens – irrespective of gender, class, sexuality, disability or any other social identity – have the right to access. These include streets (neighbourhood streets, lanes, streets leading to the main roads), modes of public transport (city buses, intercity coaches, trains, metros, auto-rickshaws, rickshaws) and sites like bus stops and market streets (bazaars, shopping malls) (Bhattacharya, 2014).

Pain (1991; 1997a; 1997b) argues that 'amongst all the factors which have been noted to increase fear of crime, being female has the largest effect'. This fear intersects with class and ethnicity in women's everyday experiences of the city (Tyner, 2002; Pain, 1997a, 2001; Day, 1999).

There have been other studies that found that although men have more chance of being victimized (Reid and Konrad, 2004), women often report levels of fear of crime that are two to three times higher than men's (Ferraro, 1996; Hickman and Muehlenhard, 1997; Warr, 1984). Owing to this difference in genders between "feeling fearful" and actually being "victims of crime", feminist studies exploring women's perceptions of fear have faced the criticism that women's feelings of exclusion due to fear in public spaces was because of their "irrationality" as racialized young men were in fact, more likely to be victims of violence on the streets than women of any age group were. However, feminist scholars responded to these implications of irrationality by showing that the women's experiences in urban spaces were misrecognized and by expanding the scope of "violence" to include, for instance, verbal and gestural assaults. (Pain, 1991) (Valentine, 1989, 1992). Some studies showed that it is the "othering gaze" of men that created discomfort and even fear, so much so that many women felt safer in public spaces in the night rather than in the morning (Bankey, 2002) (Davidson, 2000, 2001a, 2001b, 2002) proving that the geographies of fear were bound to identity. Literature in the new century has continued to show how fear affects women's access to public spaces; why women feel (un)safe in using public space; how they negotiate to live with fear and experiences of crime (Khan

2007, Pain 2001, Phadke 2007, Starkweather 2007; Viswanath and Mehrotra 2007) how they negotiate spatial dynamics of power in their daily lives (Wattis et al, 2011).

Women's rape and sexual assault rates are ten times higher men's (Ferraro, 1995,1996) and hence the fear of sexual assault is the most feared crime among women, even more than murder. (Valentine 1989) (Viswanath and Mehrotra 2007) (Tandogana and Ilhan, 2016). In the US, 17.7 million women have been victims of attempted or completed rape while the figure for men was 2.2 million (RAINN, 2018).

Fear of crime imposes limitations upon women's daily lives. Several women in Indian cities often carry tools to self-protect themselves from sexual violence on the streets: pepper sprays, sharp objects, dress in a particular way or even restrict their mobility in terms of space and time (Khan 2007). It keeps women out of parks, plazas and public transit, especially after dark. Due to the fear of crime, women constrain their social lives, dressing style, arrival and departure hours from home. (Tandogan and Ilhan, 2016). Fear is a substantial barrier to women's participation in the public life of the city (Wekerle and Whitzman, 1995).

Urban layout and design are implicated in creating fear among women. Dark subways, long alleyways, deserted areas, poorly-lit streets, empty parks and dense woodland (Hutchings, 1994) along with silent-isolated streets, subways and park areas (Colquhoun, 2011), are identified as urban spaces where fear of crime is highly perceived. A large scale study in the US on women's fear in transit environments and as passengers (Loukaitou-Siders,2009) showed that desolate bus stops and train cars, dimly lit parking lots and overcrowded transit vehicles often compel women to change their transportation modes and travel patterns in order to avoid these settings. Where there is a perception of fear women either do not use these routes at all or only when accompanied or only during the day (Loukaitou-Siders, 2009).

2. Differences in Household Division of Labour

Women's mobility decisions are linked in a large part to their temporal and spatial constraints that stem from their role as wage earner cum household manager. Despite their growing integration into the labour force, it is almost exclusively women who continue to perform the unpaid housework like caring for children and other dependent household members, preparing meals or cleaning tasks at home. This work, while productive, is not counted as economic activity. Consequently, working women, especially working mothers perform both paid and unpaid labour, resulting in their shouldering a "double burden". The result has been an expansion of women's roles rather than the achievement of gender role equality.

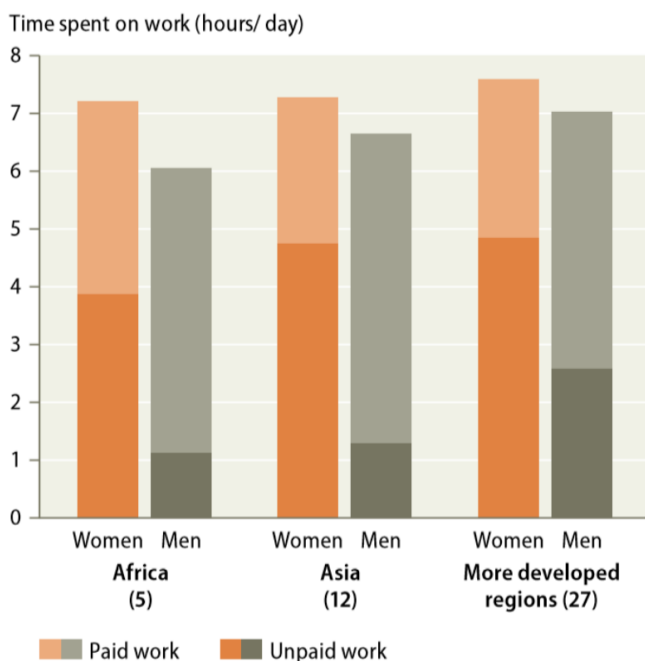
In the late eighties and nineties, several western studies showed that women's primary responsibilities for children and home seem to remain fairly unchanged, despite their gains in the occupational sphere (Beilby and Bielby, 1988; Moen, 1992; Brines,1994, Bernhardt, 1993). Kalleberg and Rosenfield, 1990) and Singelmann et al.,1996) demonstrated that Scandinavian women are less dependent on their male partners financially and otherwise but even in those societies, women mostly suppress their long term job opportunities, earnings, work profiles and other job-related interests when they raise young children. Finally, in the USA, studies found that irrespective of their employment status, women continued to

perform a far greater share of the family and household work than men (Han and Moen 1999, Presser 1994, South and Spitze, 1994).

In 2011, a research was carried out across 15 European countries under the project called “Gendered Innovation” by the European Union to understand time use by men and women in order to use the results for transportation planning (Figure 1). The Harmonised European Time Use Survey codes time use into forty-nine categories and provides sex-disaggregated data on time usage within these fifteen EU countries. If we take childcare as an example, in all EU countries surveyed, women spent significantly more time performing childcare than men—from 1.7 times more in Sweden to 4.8 times more in Latvia.

Time spent on paid and unpaid work by region and sex, 1999–2008 (latest available)

Figure 1: Time spent on paid and unpaid work by region and sex (1999-2008). Source: UN report World’s Women, 2010



This pattern holds in the U.S. as well—in 2010, the average U.S. woman spent 32 minutes caring for and helping children in her household, twice as much as the average U.S. man's 16 minutes (United States Bureau of Labour Statistics, 2011).

In developed countries, however, men's caregiving work at home has increased over time. Caregiving among British fathers, for example, increased nine-fold from 1961 to 1999 (O'Brien et al., 2003). Nevertheless, in developing countries where conservative family power structures still hold sway, home, tradition and reproduction are seen as being linked together and treated as an exclusively

feminine sphere. The extent of unpaid work and the conditions of such work are affected by the available physical and social infrastructure and access to basic public services such as water supply and health care. Jayati Ghosh (2011) considers this to be the crucial factor why in developing countries, including India, unpaid work is more common and involves more drudgery (Ghosh, 2011).

A more global perspective of the sexual division of labour at home is perhaps provided by a report by UN Women released in 2010 (World’s Women, 2010). Comparing 44 countries (Figure 1) the study found that employed women spent less time on paid work than on unpaid work in all regions. The total work burden (both paid and unpaid combined) was more for employed women than employed men. Working women continue to spend an inordinate amount of time on household activities starting their “second shift” (Hochschild, 1989) after they return home. Employed men spend far less time on paid and unpaid work combined, except in six countries of western Europe where their total work time approached that of women.

The unequal division of labour at home in present social structures leaves women temporally constrained or suffering from “time poverty” (Greico et al, 1989) as compared with men. Being time poor intersects with class and ethnicity such that the poor who often belong to racial minorities are the most affected as they do not have the money to hire services that will ease their burden. Time Poverty is also exacerbated in female-headed households in low- income areas (Greico, 1995) and households with less financial resources available to them to buy any assistance to reduce the burden of their responsibilities. (Turner and Greico, 1998). The gendered division of labour creates a separation of life purposes for women and men (Bakker, 2007). While women stay in the private sphere, men’s participation in public spaces gives them greater access to economic and educational opportunities and through them, a means to participate in broader society (Unterhalter, 2013). Below, we explore the influence of the sexual division of labour in households on women’s mobility patterns.

3. Characteristic Features of Women’s Mobility

The difference in male and female family responsibilities results in significant differences in *trip distance, trip purpose, transport mode* and other aspects of travel behavior as explained below.

a. Trip Distance

Various studies since the 1980s such as (Erickson, 1977; Andrews, 1978; Howe and O’Connor,1982; Fagnani, 1983; Fox 1983; White, 1986; Hanson and Johnston,1985; McLafferty and Preston,1991) examined working women’s journey to work and established that the most striking characteristic of women’s commute to work is that it is shorter compared to men’s. This is a long-standing finding remained consistent in studies of the 21st century (Sheller and Urry, 2006; Crane 2007; Sandow 2008; McQuaid and Chen 2012; Hjorthol and Vagane, 2014). Women’s shorter trips were also found to be true in shopping and leisure trips (Naess, 2008; Scheiner 2014). Residential choice models such as (Timmermans et al, 1992; Abraham and Hunt,1997 and Sermons and Koppelman, 2001) found greater sensitivity to commute time for female commuters relative to that for males.

Spatial constraints imposed on women by domestic and caregiving duties were implicated for women travelling shorter distances compared to men. Women’s trips may be shorter but they have also been found to have a higher trip rate than men i.e. their trips are shorter but more frequent (Hanson and Hanson 1981) (Lu and Pas 1998) (Pas, 1984).

b. Trip Purpose

In studying women’s mobilities, researchers have relied on recording trip purpose broadly classifying it as “work- related” and “household related” which comprised broad categories like “leisure” or “shopping”. Even then, women’s “household related” trips have been shown to be significantly higher than men, given

that they are primary caretakers of the home, as seen above. In recent times, some innovations have been made in countries which collect sex- disaggregated data on time use surveys that throw more light on the high extent of non-work trips that women make in their everyday lives. Spanish researcher Ines Sánchez de Madariaga (Sánchez de Madariaga, 2013)

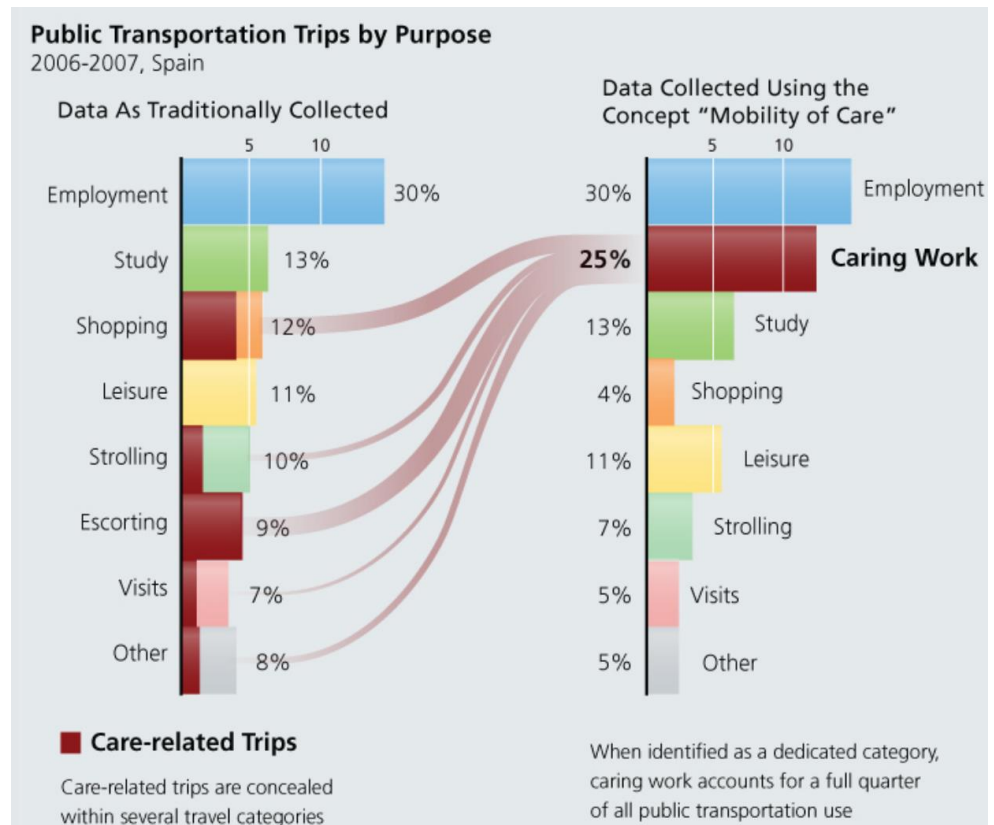


Figure 2 : Source: Sanchez de Madriaga, 2013. Figure by Erik Steiner. Gendered Innovations, 2011.

introduced the idea of “mobility of care”. This showed that when care work is broken up into small categories like escorting to school, buying groceries or taking children to the park, their importance is diminished while the time spent on work trips appears like a big chunk of time (Figure 2). However, when care work is clubbed together, the representation was more authentic and showed for Spain that 25% of the trips women made in data collected between 2006-2007, were caregiving trips.

c. Complex “activity spaces”

Owing to their undertaking varied kinds of trips, often involving spatial and temporal rigidities, women have more complex activity spaces than men, involving multiple ‘anchor points’ (the home, workplace, children’s school(s) or nursery) that are often fixed in space and/or time (Kwan 2000) (Schwanen et al. 2008). The presence of dependent children at home creates more spatio-temporal constraints on their activity participation (Gordon, Kumar and Richardson 1989). More recently, data from the German Mobility Panel of 1994-2012, again confirmed that women’s daily lives and associated trips are more complex than that of men and that women are differently affected than men by the presence of children. (Scheiner and Holz-Rau, 2017).

d. Trip Chaining

A simple "trip" refers to a journey from a single starting location to a single destination, typically using a single form of transportation. The concepts of "trip chaining" and "multipurpose trips" expand on this definition by recognizing that trips often involve a sequence of destinations and are multimodal (McGuckin et al., 1999) (Hanson, 1980).

Trip chaining refers to the practice of combining various trips, typically household related and wage earning trips. Compared to men, women are more likely to trip-chain on the way to and from work (Rosenbloom, 2004, Strathman and Dueker, 1995). For example, analysis of US national travel data between 1994 and 2001, revealed that working women in two-worker families were twice as likely as men in two-worker families to escort children to and/or from school, during their commute. However, data for the same interval also showed an increase in trip chaining among men by 24%. Other demographic variables like having a child under the age of five increases trip chaining by 54% for working women and 19% for working men (McGuckin et al., 2005a). A recent study in Spain (Sanchez and Gonzales, 2016) found that women aged 30-39 were the great users of private vehicles in working trips, made the largest number of daily trips, combined work and non-work trips, and used less public transport, showing that in the reproductive age phase, women's busy careers and household responsibilities increased their mobility needs.

e. Access to and attitudes towards different transport modes

Differential access of the genders to resources, notably time, money, skills and technology lead to differences in travel and transport patterns (Law 1999, Kaufmann 2002, Turner and Grieco 1998). Men, in their superior power position in the household hierarchy, tend to appropriate the most efficient means of transport for themselves (Peters, 2001). Therefore, cars, bicycles, motorbikes and animal carts are seen as assets of the household over which men, as the most powerful members of the household, would have primary claim. Men are the first to motorize, coopting technologies within the household. Women's access to cars is often dependent on when the man of the household leaves it free for use or moves on to a new car. The majority of urban women have limited access to private motorized means of transport and tend to be highly dependent on either walking or on public means of transport, motorized (buses, metros, etc.) or non-motorized modes like rickshaws. (The World Bank, 2010; Uteng, 2012).

III. Impact of Gendered Mobility on Women's employment

Temporal constraints caused by their gender roles make working women find jobs which enable the balancing of domestic and work responsibilities. This is evident in the compromises that women in the labour market perform -working close to home to reduce commute time and/or working in part-time jobs. Women privilege the job's proximity to home and suitable work hours over and above wage considerations.

1. Working close to home

Women's gender roles affect the decisions they make about employment. This means that there is an interaction between socio-demographic and spatial variables which makes women have a local orientation when searching for jobs and confines their choice of workplaces (Næss 2008; Manderscheid and Bergman, 2008; England, 1993). As early as 1981, in an article simply titled "Why women work closer to home", J.Madden concluded that sex differences in household roles were the most important factor in influencing women to work closer to home (Madden, 1981). Evaluation of previous studies by Turner and Niemeier (1997) and their own analysis, which relates time and distance to gender, marital status, socio-economic status, race and stage in the life cycle, found that household responsibility was an important factor in distance travelled to work. They also identified the presence of children as the strongest factor in explaining differences in female and male commute times later confirmed by others (Chapple and Weinberger, 2000; Hanson and Pratt, 1995) found that workers' commute times are inversely correlated with the amount of time they spend performing household maintenance activities.

Given these constraints, women find themselves spatially concentrated in certain areas of the city where jobs suitable to their life situation can be found. These could be more uniformly distributed over the metropolitan area (Hanson and Johnston, 1985); concentrated in suburban areas, where they are filled by "captive" female labor forces (England, 1993); concentrated in central business districts with clerical work (Hwang & Fitzpatrick, 1992). or limited to what they can find using their social networks (Chapple, 2001).

2. Part-time work

Many of women's non-work trips, especially trips to accompany children to and from school, are fixed in space and time and therefore restrict the possibilities of the kind of work they can take up (Hanson and Pratt, 1991) (Kwan, 1999). This makes them do more part-time/ informal work or choose to work close to home that can fit into their pre-structured day.

Part-time employment which typically pays lower wages, is a manifestation of the pressures for women to reconcile work and family life (Orloff, 2002). Everywhere in the world, part-time employment is much more common among women than among men, with the prevalence rate for women exceeding twice that for men in about three-quarters of 43 countries surveyed across the world. (World's Women, 2010). With increasing flexibility that the labour market offers, there are a whole range of different working options that women are availing of (telecommuting, work from home, flexi hours etc.) even if they are at lower wages, so that they can fulfill familial obligations as well.

Personal safety and the avoidance of harassment, (see Fear of Public Spaces) are also major concerns for women in their ability to access their workplaces and hence in their choice of jobs.

Women – enter the labour market from a highly disadvantaged position, as the time they spend on domestic work restricts their access to full and productive employment and also leaves them with less time for education and training, leisure, self-care and social and political activities. (World's Women, 2010)

IV. Accessibility

Participation in activities providing health, education, employment, entertainment, spiritual satisfaction or political participation all contributes to well-being. These opportunities for participation are scattered around in the physical environment and an individual's ability to engage in these activities depends on physically reaching the places providing these opportunities. **While accessibility comprises mobility, (because only if a person moves can they physically displace themselves and reach the destination) spatial accessibility is possibly more pertinent to the pursuit of well-being than only mobility. The ability to access opportunities and the autonomy to travel to activity sites are directly linked with a sense of well-being because they enable social interactions, learning and other benefits. (Vella-Brodrick, 2011).**

The earliest scholarly definition has been attributed to Hansen (1959) who defined accessibility as the "potential of opportunities for interaction." Bhat et al (2000) define accessibility as a measure of the ease of an individual to pursue an activity of a desired type, at a desired location, by a desired mode, and at a desired time. According to Bertolini et al (2005), accessibility is the amount and diversity of places that can be reached within a given travel time and/or cost'. Farrington & Farrington (2005) define accessibility as "The ability of people to reach and engage in opportunities and activities". According to Pirie (1981), accessibility is akin to reachability and convenience. Some scholars consider accessibility from two different perspectives viz. "having access" that refers to availability of services and "gaining access" that refers to an individual's ability to utilize available services to gain access. (Guilford et al, 2002). In this view, both provision of opportunities in a given environment as well as capacity for its utilization by people, are integral part of access. Accessibility as defined by Burns (1979), is the ability of an individual to be able to participate in an activity or set of activities in a given environment. This definition has been extended to include temporal and individual components along with spatial and transportation components (Geurs and van Eck, 2001). In all cases, there is an element of being able to reach desired destinations, which have a spatial spread through movement or transport, in an affordable and convenient manner.

How are mobility and accessibility related to each other?

Mobility refers to the movement of people and goods and is easily measured, typically as the number of trips per day per person, miles covered per person, cost per trip per person or average trip speeds. Accessibility builds further on the concept of mobility, focusing on the "how" aspect of the journey to reach different destinations in their environment- how did the person arrive at the destination and how was the travel experience. As accessibility includes the subjective notions of "reachability", "convenience" and "ease" it is a far more a multifaceted concept, not readily packaged into a one-size-fits-all indicator or index. Despite accessibility being the *raison d'être* of land use-transportation and even after some fifty years of exploration, measures of accessibility that capture its full meaning remain difficult to operationalize, much

less translate into useful indicators. (Zegras and Srinivasan, 2006). In the existing literature, geographical accessibility measures could be classified as an attribute of either location (place accessibility) or individuals (personal accessibility)

1. Place Accessibility Measures

a. Infrastructure based: These measures focus on the time taken to reach destinations by transport modes, speed and congestion of transport networks and does not concern itself with individual choices and travel behaviour.

b. Utility-based measures: Focussing on the transport network as well as on the individual these measures view accessibility as the benefit which the individual derives after considering the transport cost. For e.g., the accessibility of a construction site which employs daily wage labourers, according to this measure, would be the daily wage earned by a labourer upon reaching the site after accounting for his transport cost to access that destination.

c. Location-based indicators are concerned with the spatial distribution of opportunities. In other words, how far are opportunities spread out with respect to a reference point? This is measured as the distance from the reference point to opportunities or time taken from the reference point to reach these spatially spread out destinations (opportunities).

All place based accessibility measures focus on proximity of locations from a single reference point. This is true even of the utility-based accessibility measure, which takes both the individual and the transport into account. But urban journeys are increasingly multipurpose and multi-stop journeys. Hence, the significance of a single reference point, usually the home, is very minimal and often irrelevant for vast groups of people, for example, full-time employed people who work outside the home. Various studies (Kitamura et al, 1990, Golledge and Stimson, 1997) show that potential stops of locations other than those near the home or work are in fact more relevant as the reference point of the individual often changes during the course of the day.

2. Individual Accessibility Measures

In this kind of measure, access is measured according to the individual freedom to participate in the opportunities and hence takes into account constraints of individuals in getting to a destination. These person based measures, broadly called, **space time accessibility** measures have been developed by building upon Hagerstand's (1969) time geographic framework which views accessibility in terms of the possibilities for individuals to perform activities. It recognizes that temporal constraints are as important as spatial constraints in limiting a person's access to activities. This approach enables full consideration to be given to the different access requirements of different types of people and to a range of factors which may improve a person's accessibility, such as flexible working hours, relocating a facility, altering timings of a public transport service for particular routes. Kwan (1998, 2002) reiterated the inadequacy of place based accessibility measures wherein accessibility to a location is erroneously assumed to be the access of a person

at that location. Individuals facing different time constraints will have varying levels of accessibility to opportunities, even though they reside in the same place (Chen, 2008).

The idea that accessibility measures can be different for different social groups was further developed by Swedish researchers (Elldér et al, 2018) who investigated accessibility by proximity for different social groups living in Gothenburg between 1990 and 2014 such as low- and high-income earners, people with small children, and elderly people. They showed that opportunities for living a local life and achieving accessibility via proximity varied over time and was higher for low income earners and the elderly than for high-income earners and parents of young children.

Bhat et al (2000) and Geurs and van Eck (2001) point out, that the information required for the person based approach is not usually available from standardized travel surveys and therefore often needs to be collected specifically, which makes this method difficult to implement. Nevertheless, as far as women's accessibility is concerned, place based accessibility is ill-suited because it ignores the reality of time poverty and trip chaining (described in "Characteristic features of women's mobility") which is different for each woman.

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SECTION C : THE CAPABILITY APPROACH

I. Background to the Development of the Capability Approach

1. The Inadequacy of Income

The first chapter of Amartya Sen's *Development as Freedom* relates a discussion described in an 8th century BC Sanskrit manuscript. A woman scholar, Maitreyee, asks her husband 'if "the whole earth, full of wealth" were to belong to her, she (would) achieve immortality through it.' Hearing that she would not, Maitreyee asks, 'What should I do with that by which I do not become immortal?' (cited in Sen, 1999, pp13). Sen cites this to illustrate that the limited value of income and wealth has been recognized for centuries.

In 1979, at Stanford University, Sen gave the Tanner lectures on human values called 'Equality of What?' (Sen, 1987a). He questioned the adequacy of measuring equality in utilitarian terms and outlined for the first time his conception of capabilities, which has been developed in greater detail since. The capability approach originated from Sen's discomfort with the limitations of utilitarianism which was the hitherto basis for measuring well-being of individuals and of countries. Sen argued that claims other than utility, like rights

and freedoms, which society often wants to acknowledge, do not explicitly enter the utilitarian approach to social choice (Sen (1970, 1979)). In numerous articles and books thereafter, Sen has developed, refined and defended a framework that is directly concerned with human capability and freedom (e.g. Sen, 1980; 1984; 1985a; 1985b; 1987b; 1992; 1999) which has come to be called “The Capability Approach”(CA) or the Capability Theory. The roots of this philosophy can be traced to Adam Smith ‘s analysis of necessities and living conditions and Karl Marx’s concern with human freedom and emancipation, both of which Sen has acknowledged. Gilardone (2008) believes that despite the neoclassical orientation of his research, two major influences on Sen’s were Maurice Dobb and Indian economist Amiya Dasgupta, plus a worldview inherited from Nobel Laureate Rabindranath Tagore. The Capability Approach, however, probably has the most in common with the Basic Needs Approach (BNA) to development pioneered by Paul.P. Streeten (1979) and Frances Stewart (1985), amongst others. The capability approach extends the Basic Needs Approach beyond the analysis of poverty and deprivation and concerns itself with overall well-being.

While Sen’s works cover an extremely wide range of topics, his ‘capability approach’ has provided the basis of a new paradigm in the social sciences. The human development approach has been profoundly inspired by Nobel laureate Amartya Sen’s pioneering works in welfare economics, social choice, poverty and famine, and development economics. The human development paradigm is hence multidimensional and pluralistic considering fiscal and trade policy to be just as important as social security and education in the betterment of human lives. The UNDP’s first *Human Development Report* in 1990 defined human development as ‘*both the process of widening people’s choices and the level of their achieved well-being*’ (UNDP, 1990).

2. Well-Being and Freedom

Since the time of the ancient Greek philosophers, the idea of what constitutes human well-being and how it can be enhanced has preoccupied thinkers across the ages. The Greek word Eudaimonia consisting of two words *Eu* (good) and *daimon* (spirit) translates as “well-being” and is a central concept of Aristotelian philosophy, which Sen acknowledged had close connections with the Capability Approach. (Sen, 1993, p 46). The Dutch sociologist and contemporary authority on the scientific study of happiness Ruut Veenhoven (2008) defines "overall happiness" as being synonymous with life satisfaction and subjective well-being. Subjective well-being or individual well-being is widely accepted to be ‘a broad category of phenomena that includes people’s emotional responses, domain satisfactions, and global judgements of life satisfaction’ (Diener et al., 1999). The “well-being manifesto for a flourishing society” describes well-being as being more than just happiness. As well as feeling satisfied and happy, well-being means developing as a person, being fulfilled, and contributing to the community (Shah and Marks, 2004, pg. 2)

In the last fifty years or so, psychologists and sociologists have made considerable advances in trying to understand what affects subjective well-being. The strongest factor seems to be inherent personality traits

but several others like individual situations (being married versus being single), demographic (gender, age), institutional conditions (democracy, welfare state), environmental factors and economic factors (income, employment) have all been found to exert an influence on an individual's well-being. (van Hoorn, 2007).

Since ancient times, thinkers have focused on the idea of freedom as essential for human flourishing. Freedom of the soul from the repeated cycles of birth and death (moksha) is regarded as the highest goal of life in eastern religions like Hinduism and Buddhism. It is also the subject of discussion in liberation theology of Christianity and Islam. A focus on people's freedoms can be found in the notion of *ubuntu* in Southern Africa, which was widely used in practice against apartheid. A century before Sen, German philosopher Wilhelm Dilthey (1833-1911) spoke of human freedom as being less of freedom *from* something and more of responding *to* a multiplicity of circumstances. Dilthey viewed human freedoms as a range of possible responses and choices within a concrete situation, a notion that is conceptually similar to the capability approach.

In his book *Development as Freedom*, (Sen, 1999) Amartya Sen moved from seeing freedom as instrumental to well-being to seeing it as an essential ingredient of well-being, Sen believes that it is a human being's moral responsibility to pursue well-being and since well-being equals freedom it follows that every human being should aspire for a life of freedom. Quoting Immanuel Kant, Sen asserts that human beings are ends in themselves, rather than means to an end. (Sen, 2003). Therefore, enrichment of lives ought to be the concern of policy and planning while production and prosperity (GD, economic growth, etc.) should serve as a means to that goal.

II. Terminology and Central Ideas of the Capability Approach.

The key idea of the capability approach is that social arrangements, should aim to expand people's capabilities – their freedom to promote or achieve what they value doing and being (Alkire and Deneulin, 2009). Robeyns describes the capability approach as a broad normative framework for the evaluation and assessment of individual well-being and social arrangements (Robeyns, 2005a). 'The capability approach captures the intuitively attractive idea that people should be equal with respect to effective freedom', said Cohen (1993b, p.7). In this section, we define and describe the key terminology of CA and the ideas that recur in the CA discourse. As the CA's utilization is now multidisciplinary with literature spanning numerous publications, each of the key ideas has been the subject of rich debates and interpretations, it is not feasible to cover all of them. Presented below are only the essential concepts of the approach to enable even a non-CA specialist to appreciate its application to the primary data, in subsequent chapters.

1. Functionings and Functioning Vectors

Functionings are various activities and states of beings that a person can undertake (Robeyns, 2011) These “beings” and “doings” are people’s achievements. A functioning vector or functioning n-tuple (an ordered set with n elements) describes the combination of “doings” and “beings” that constitute the state of a person’s life (Clark, 2008). For example : A woman is “being a mother” and “doing cooking” while also “being a wife” and “doing washing” and “being a technician in a factory” and “driving to work”. Other examples of “beings” are being educated, being illiterate, being well nourished, being malnourished, being part of a community network, being part of a criminal network. Examples of “doings” could be travelling, reading, voting in an election, dropping a child to school, taking care of an elderly person.

One’s degree of freedom is reflected in the ability to put together different “beings and doings” to construct a life for oneself and have the freedom to change the combination of “beings and doings” depending on what results in higher well-being at that particular point of one’s life.

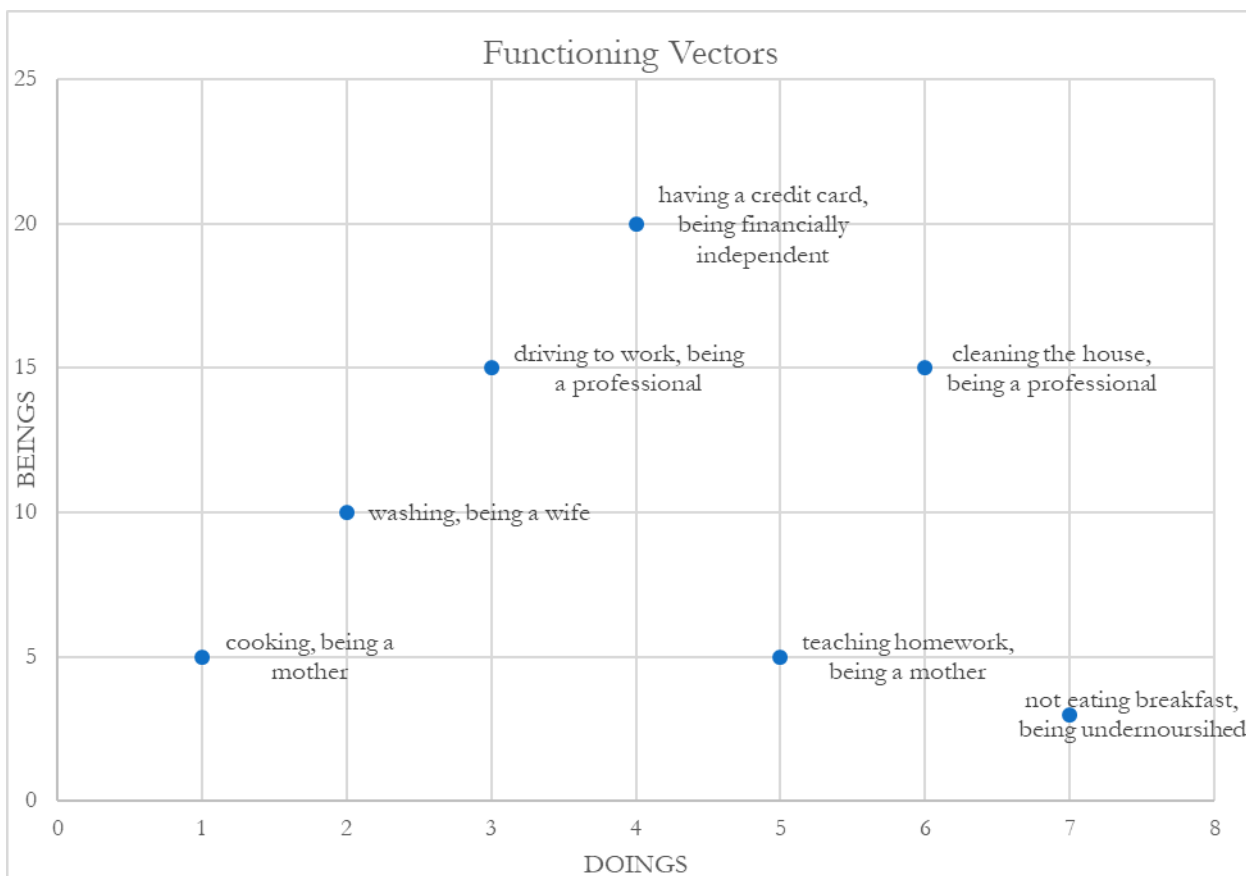


Figure 3: Example of n-tuples of functionings . Source: Author

Figure 3 plots the combinations of beings and doings in a woman’s life. A higher value of a bundle does not represent prioritization and the number of combinations is illustrative, not exhaustive. In the space of functionings, any point, representing a functioning vector, reflects a combination of the person's doings and beings, relevant to the exercise.

2. Capabilities and Capability Sets

A capability reflects a person's ability to achieve a given functioning ("doing" or "being") (Saith, 2001). Capabilities are the effective opportunities or freedoms to choose between various functionings to constitute alternate lives and enhance well-being. Capability thus reflects the alternate or potential ways in which people can conduct their lives. Thus, while travelling is a functioning, the real opportunity to travel is a capability.

The capability set describes the set of attainable functioning n-tuples or vectors a person can achieve. It represents the various alternative combinations of beings and doings which the person can choose. (Sen, 1993). For example, consider two women -a doctor and a stay at home mother. In Figure 1 above, the doctor's capability set is (being a mother, cooking) *and* also (being a professional; having a credit card). Assuming the stay at home mother does not have the freedom or opportunity to work, she will have a limited capability set of (being a mother, cooking) and (being a wife, washing). But the functioning vector of (being a professional, driving to work) is not attainable by her. Hence the doctor's capability set is larger than that of the stay at home mother's.

The combinations can also change with time. The stay at home mother's capability may be enhanced by the opening up of a day care centre next to her house when the child is three. So, while initially, the functioning bundle of (being financially independent, having a credit card) was not attainable, this tuple, now comes within her reach.

To assess well- being, we have to pay attention to not one single functioning vector but to the vectors that (s)/he is *capable* of achieving. The bundle, or choice, of the functionings that a person can select entails his or her capability set. This capability set 'stands for the actual freedom of choice a person has over alternative lives that he or she can lead' (Sen, 1992, p114) In his book "Commodities and Capabilities " (Sen, 1987b), Sen further clarifies by what he means by capability being a set of opportunities by saying that capabilities are more akin to having an "advantage" "Advantage' refers to the real opportunities that the person has, especially compared with others.

Opportunity to choose alternate lives is thus valued higher in the capability approach than achievements which are no more than "revealed behavior". It only indicates what was finally chosen, not that this was chosen amidst many options or none at all.

The many choices that have to be made in arriving at a capability set are accomplished through an individual's participation within the community in which he lives. The extent of participation can be limited by the prevailing institutions. This could make it difficult, if not impossible, to take advantage of the opportunities that present themselves. *In a society where women are not allowed to walk along streets, an otherwise good transportation system cannot be converted into the functioning of travel. The absence of street lighting, for instance, can restrict the ability of people to gain the functioning of mobility at night even if they have cars. If*

governments do not provide parks, people who have the time for leisure may not be able to enjoy the functioning of leisure that is specifically associated with walking through a park or having a picnic in a park. (Nambiar, 2013).

3. Reason to Value

In *Inequality Re-examined*, Sen writes: ‘A person’s capability to achieve functionings that he or she has reason to value provides a general approach to the evaluation of social arrangements, and this yields a particular way of viewing the assessment of equality and inequality’ (1992, p5).

When it comes to prioritizing within capabilities, Sen affirms that priority is given to those capabilities that the individual in question has “reason to value” (Sen, 1999, pg. 74). Des Gasper (Gasper, 2002, 2007) argues that this contains two potentially competitive principles- an emphasis on reason and that the individuals should choose for themselves, which can be a source of potential tension because individuals could choose what they value in poorly reasoned ways and there is no one outcome of the reasoning process. Alkire drops the “reason to value” and only talks of “what people value.” She writes “The Capability Approach is a proposition that social arrangements should be evaluated according to the extent of freedom people have to promote or achieve functionings they value. “ (Alkire, 2005, pg. 122). Robeyns simplifies it further by saying “What ultimately matters is that people have the freedoms or valuable opportunities (capabilities) to lead the kind of lives they want to lead, to do what they want to do and be the person they want to be.” (Robeyns, 2005).

4. Positive Freedoms

Sen (1985b; 1992; 1999) emphasizes that capabilities reflect a person’s real opportunities or positive freedom of choice between possible lifestyles. Capability theory concerns itself with what is possible to achieve and is hence based on the notion of positive freedom. As the 19th century political philosopher, T. H. Green wrote, ‘We do not mean merely freedom from restraint or compulsion ... when we speak of freedom as something to be so highly prized, we mean a *positive power or capacity* of doing or enjoying something worth doing or enjoying’ (Sen, 2002, p586). This capacity of a person to choose to do one thing and not another was an essential ingredient of well-being according to Sen. The difference between an opportunity as defined in the usual sense and a “real opportunity” is best illustrated by his example of the opportunity available to an individual in terms of the doors of a school being formally open to him as opposed to the “real opportunity” in terms of whether he actually has sufficient money to afford to go through the doors.

5. Agency

One of the central goals of human development is enabling people to become agents in their own lives and in their communities. Agency refers to a person’s ability to pursue and realize goals that she values and has reason to value. An agent is ‘someone who acts and brings about change’ (Sen, 1999, p19). The opposite of

a person with agency, is someone who is forced, oppressed or passive. (HDCA Briefing note, Agency includes not just individual agency, but what one can do as a member of a group, collectivity or political community. It recognizes that individuals often have values and goals (such as preserving the environment, purchasing free trade products or opposing injustice) that transcend and sometimes even conflict with personal well-being (see Sen, 1985b, 1992). But it is also by being agents that people can build the environment in which they can be educated and speak freely. Sen called this the “agency aspect” of human development. Related to this he made a fourfold classification to assess human advantage distinguishing them as i. well-being freedom ii. agency freedom iii. well-being achievement iv. agency achievement. These distinctions and their interrelations are discussed in Sen (1985b, 1992).

III. Role of Resources and Conversion Factors

Sen emphasizes the need to pay particular attention not only to mechanisms which distribute resources, but also to a wide variety of formal and informal social practices, customs, and interactions. These practices, he believes, often play a significant role in shaping the actual life chances of individuals, independent of those individuals’ possessions of material goods or their personal skills and handicaps. Sen terms these mechanisms as ‘conversion factors’. They encompass a whole host of environmental, societal, and personal phenomena which enable people to convert resources into actual functionings. (Brown & Stears, 2005).

Sen points out that: *‘the freedom of agency that we individually have is inescapably qualified and constrained by the social, political and economic opportunities that are available to us’* (Sen, 2000 pg xi–xii). Conversion factor is the degree in which a person can transform a resource into a functioning. Resources are taken to be the commodities and services available within an individual’s budget.

For example, if we consider a bicycle as a resource, then an able-bodied person who was taught to ride a bicycle when he was a child has a high conversion factor enabling him to turn the bicycle into the ability to move around efficiently, whereas a person with a physical impairment or someone who was never taught to ride a bike has a very low conversion factor. (Robeyns, 2011)). Two people having the same freedom may use the opportunities very differently due to “conversion factors” which may be personal, social or environmental. (Sen, 2000; Robeyns, 2005)

- Personal conversion factors are internal to the person, such as metabolism, physical condition, reading skills, or intelligence.
- Social conversion factors are factors arising from the society in which one lives, such as public policies, social norms, practices that unfairly discriminate, societal hierarchies, or power relations related to class, gender, race, or caste. Social factors in this study refer to the family norms and social mores that influence a woman’s mobility.

These are stronger in traditional, patriarchal societies like those in India than they are in western societies. The hold of patriarchy also differs across regions within India and across socio-economic classes.

- Environmental conversion factors emerge from the physical or built environment in which a person lives i.e. climate, pollution, the proneness to earthquakes, etc. Among aspects of the built environment are the stability of buildings, roads, and bridges, and the means of transportation and communication, spatial dispersion of residence and employment opportunities and land use policies.

Continuing with the example of the bicycle. The extent to which a bicycle contributes to achieving the function of mobility depends on that person's physical condition (a personal conversion factor), the social mores including whether women are socially allowed to ride a bicycle (a social conversion factor), and the availability of cycling paths (an environmental conversion factor). To take another example, female education may have been provided by the government but if social institutions don't support the education of the girl child, female education will remain low.

IV. Critique of the Capability Approach

The CA's flexibility and internal pluralism allow researchers to develop and apply it in many different ways (Alkire, 2002). The CA's open endedness and Sen's deliberate ambiguity in giving it a defined template has also been seen as its weakness. This minimum specification leaves it to be variously elaborated (Robeyns, 2000, 2003) especially as it is used in a variety of disciplines. It gives freedom for people from a variety of backgrounds to use CA as a base for branching off in different ways according to their interests and skills. But the CA's inherent under definition also has disadvantages in practical use: it becomes harder to communicate, teach, assess and improve upon. It becomes unpersuasive to those policymakers who seek clarity and precision. The risk of "anything goes" increases during the simplification in operationalizing the CA and it can get twisted beyond recognition. (Gasper, 2007). Academics can over-refine it making it arcane to potential frontline users while during operationalization, practical considerations can make it bastardized and lose its rationale. (McNeal, 2006)

The CA's large informational base required in order to make reasonable evaluations of wellbeing is another problem (Alkire, 2002). Some believe that it makes it impractical to apply CA for the formulation of policies at the macro level. A number of the articles express concern about the emphasis on freedom in Sen's more recent work. Martha Nussbaum (Nussbaum, 2003) argues that in *Development as Freedom*, Sen considers freedom to be an all-purpose social good and does not adequately recognize that some freedoms limit others' freedom. (For e.g. the freedom of industry to pollute affects the freedom of citizens to enjoy a pollution-free environment). Similarly, Stanley Engerman (Engerman, 2003) argues that not all freedoms go

together. Engerman suggests that there are trade-offs between freedoms, and he illustrates his case graphically with reference to the history of slavery and the nature of the trade-offs slaves had to make. Both Sen (Sen, 1999) and Nussbaum (Nussbaum, 2000, 2001) have argued that people might adapt to certain unfavorable circumstances and live through current negative situations with “cheerful endurance. Any self-evaluation in terms of satisfaction or happiness will in this case necessarily be distorted. This behavior has been termed “adaptive preferences”. The problem of adaptive preferences in the applications of utility theories was an important reason for advocating the CA. However, Teschl and Comim (Teschl and Comim, 2005) believe that Nussbaum and Sen’s adaptive preference critique had a particularly narrow view on adaptation as adaptation can be a positive as well as a negative phenomenon. Besides, the CA may turn out to be just as susceptible as utility was to the problem of adaptive preferences (Nussbaum, 1987; Sumner, 1996, pp.60-68). However, empirical studies (Clark, 2002; Clark and Qizilbash, 2005) have reported that adaptation and cultural indoctrination have not generally distorted response to questions about the selection and value of capabilities.

VI. Suitability of the Capability Approach for Gender Analysis

Sen's interest in gender inequalities appears at the beginning of the years 1980 with the publication of articles specifically dedicated to the subject of gender inequality. His research was mainly at three levels: the distribution of food in the family, excess female mortality, and the sources of inequality between men and women (Gilardone, 2008). In his first set of empirical illustrations of how he envisioned the capability approach in practice, Sen examined gender discrimination in India (Sen, 1985). He found that females have worse achievements than males for a number of functionings, including age-specific mortality rates, malnutrition and morbidity. In later work, he focused international attention on the fact that in a large part of the developing world there are fewer females than males, not because of natural causes but because of artificial sex selection and showed that in its absence, there would have been an additional 100 million women in the world. His contribution has also been crucial to the development of several aspects of feminist economics and gender analysis. We examine below the characteristics of the CA that render it sensitive to feminist concerns.

Moving beyond income

Feminist scholars have argued that in mainstream normative theories men’s lives form the standard and gender inequalities and injustices are assumed away or remain hidden and are thereby indirectly justified (Okin, 1989) (Anderson, 1999) (Young, 1990). The singular obsession with income hides well-being aspects which do not show up in market indicators- like reproductive health, care labor, household work, freedom from domestic violence, or the availability of supportive social networks, which are dimensions specific to women’s lives. (Robeyns, 2003).

Inadequacy of Commodity and Utility theories

The utility theory is particularly ineffective in studying gender inequalities because utility itself has a gendered dimension. A 1997 study by Andrew Clark in the UK found that British women derived more satisfaction (utility) from paid work than did men, even controlling for personal and job characteristics because they had lower expectations than men. A utilitarian evaluation would mask these causative factors and role of adaptive preferences (discussed earlier) which play a key role in women's well-being.

Inter-personal comparisons based on commodities and resources are also inadequate for measuring differences in the well-being of men and women because it does not acknowledge that the conversion of resources into capabilities depends on socio-economic factors, cultural norms, laws in the country. These are typically tilted against women and measurement of resources available does not reveal how these institutional factors have impeded women's access to those resources. Martha Nussbaum writes that utility and commodity theories are "insensitive to contextual variation, to the circumstances that shape preferences and the ability of a human being to convert resources into meaningful human activity" (Nussbaum, 2000, p.70).

Recognizing Human Diversity

The CA acknowledges human diversity by allowing for a wide range of dimensions to be considered in the conceptualization of "well-being" (Robeyns, 2011) while keeping freedom as the core component. Sen has said that "The issue of gender inequality is ultimately one of disparate freedoms" (Sen 1992, p. 25). He has articulated that the question of gender equality can be understood much better by comparing the things that intrinsically matter rather than just the means to achieve them. People differ in their ability to convert resources or commodities into valuable functionings, hence a similar bundle of commodities will generate different capability sets for different people. For feminists, this is important because mainstream theories have androcentric indicators of wellbeing which assume, for example, that the person being evaluated is employed and faces no barriers to employment. For women, this is a model that has never applied to their lives, as they often had to struggle to combine caring responsibilities for children, the infirm and the elderly with their paid jobs (Robeyns, 2009). To take another example, for a young working mother, availability of creches is an important determinant of her ability to take up a paid job outside home. This is not something relevant for a single person. Hence the CA allows customization of criteria to assess well-being and hence accommodates diverse people in its framework.

Nussbaum (Nussbaum, 2003) points out that the CA's sketchiness is particularly damaging when it comes to gender evaluation because women have historically had their liberties, opportunities, property rights, and political rights impinged. Issues of bodily integrity, sexual harassment, and care to children and elderly affect women much more than they do men. Lack of specificity in the capabilities which are to be secured leaves them vulnerable once again to a general evaluation that is gender blind.

VII. Operationalizing the Capability Approach

1. Putting the Capability Approach into practice

The capability approach has had a massive influence at a theoretical level – in the conceptualization of development, and its evaluation; yet progress has been much less at a practical level. (Stewart, 2014). Despite the growing empirical poverty and well-being literature based on or inspired by the capability approach, it is very difficult to find applied exercises that fully and perfectly reflect the richness and complexity of this approach. (Chiappero-Martinetti, 2008). Attempts to apply the CA are needed because the language of capabilities is still difficult and specialized (Ibrahim, 2014). Measurement is necessary for the full fruition of the CA as a framework for practical ethics, potentially applicable to human development and well-being analysis (Comim, 2008).

Despite the fact that the CA is difficult to execute in practice, there are several empirical studies which demonstrate how the CA can be applied in the real world. (Chiappero Martinetti, 2000; Drèze & Sen 2002; Kuklys 2005; Anand et al 2005; Qizilbash and Clark, 2008; Krishnakumar 2007) Roche2008). The book “Capability Approach: From theory to practice” (Ibrahim and Tiwari. 2014) contains nine such empirical studies. Sen (e.g. 1985, 1998) himself and in association, especially with Drèze (Dreze and Sen, 2002), carried out extensive empirical work from a Capability Perspective, analyzing issues such as sex bias, mortality, hunger and Indian development.

In “Selecting Relevant Capabilities” Ingrid Robeyns (Robeyns, 2003) argues that operationalization requires at least three theoretical specifications to be made:

- A. the choice of whether to focus on functionings, capabilities or both;
- B. the selection of the relevant capabilities;
- C. the decision of prioritizing and according weights.

1. Functionings or Capabilities or both?

In his earlier writings, Sen made (e.g.: Sen,1980) no distinction between development seen as a measure of functionings or seen as a measure of capabilities. In later writing, Sen argues that capability or freedom has intrinsic value and should be regarded as the primary informational base (Sen, 1993, p.38-9)

(Sen,1984, 509-10) (Sen, 1999 pg 3). He prioritizes opportunity, freedom and choice (capabilities) over equality of outcomes (functionings). So, in an interpersonal comparison of two people A and B, the capability approach would focus on whether they had the “freedom to choose what they want to be” rather

than “what they actually achieved”. In other words, capabilities are to be the basis of comparison rather than the functionings achieved by the two people.

Various problems have been identified with this approach of prioritizing choices. Since choices and preferences are shaped by circumstances, which are likely to be affected by power and inequality, those in disadvantaged circumstances are likely to adapt their preferences to what is likely to be possible (Qizilbash, 1998). Sylvia Walby argues that the notion of choice is a social invention and its experience is socially constructed. Focusing on it, merely becomes a circular route of reproducing existing social relations and hierarchies. *“Most often, choice is merely the perception of choice.... People choose what they can; they choose what exists. Therefore, judging capabilities is not a good indicator, while evaluating functionings may be”* she writes. (Walby 2012)

In the real world capabilities are measured by functionings, as it is not possible to create an empirical distinction to match Sen’s philosophical distinction between the two. (Walby, 2012). The UNDP’s Human Development Index (HDI) which is informed by Sen’s Capability Approach, treats the measurement of capabilities and functionings as if they were the same; that the measure of functioning is the best available measure of capability. Longevity, for instance, is a capability- the freedom to live long- but is measured in the HDI as the number of years lived, which is an outcome or an achieved functioning.

In keeping with CA ‘s an open and flexible approach, Sen also says that the choice of conceptual space depends on the evaluative exercise at hand as long as the ultimate goal is to ensure that every individual enjoys freedom and capabilities to lead the kind of life she has reason to value (Sen 1999) (Sen, 1992). Making a concession to practical considerations, he acknowledges that the CA can be used at various levels of sophistication and “how far we can go depends on what data we can get and what we cannot.”

It follows that in any empirical study that uses the CA, it is essential to collect data on functionings. Functionings form the bedrock from which an understanding of the person’s freedoms or capabilities can be derived at the time of analysis. However, abandoning the measurement of capabilities is not recommended by researchers like Lessman who questions the studies that choose to focus merely on functionings by arguing “we might as well ask if they are truly studies about the CA at all. (Lessman, 2012). Further, focusing on capabilities emphasizes the liberal nature of the CA and avoids the prescriptive approach of imposing a particular notion of well-being. Additionally, capabilities not only reveal the importance of human choices but also render the individual responsible for those choices (Ibrahim, 2014). This responsibility can only be endorsed if the focus is on capabilities.

2. Selection of Relevant functionings and/or capabilities

The second question to be addressed is : Which types of capabilities or freedoms are worth striving for? Which capabilities should we seek to equalize between people? Sen offers an “approach” but no specific answers to this question insisting that it is left to the people concerned to identify the capabilities they think are worth attaining as the specification depends on underlying social concerns and values. Contradicting

Sen's open-ended approach, other capability theorists, for example (Qizilbash, 1998) and most notably Martha Nussbaum (Nussbaum, 2000; Nussbaum, 2003) have argued that unless a framework contains some definite elements, it cannot provide a compass to practitioners and policymakers about which freedoms are worth securing for the population. To that end, Nussbaum lists ten vital capabilities which are the minimum that a government should guarantee its people (*life, bodily health, bodily integrity, senses and imagination, emotion, affiliation with others, living with other species, practical reason, play and control over one's environment*) embracing a form of neo-Aristotelean 'perfectionism'. According to Nussbaum, capabilities are to be (rightly) valued *if they make an important contribution to human flourishing*, and not if they do not need to be valued.

Although having a fixed list can steer policy in the right direction Sen (2004 pg. 77) insists that there should not be 'one predetermined canonical list of capabilities'. Asserting that any selection of capabilities must be context-specific and preferably involve the participants of the study themselves, Sen (1992, p 44) notes: 'The need for selection and discrimination is neither an embarrassment nor a unique difficulty for the conceptualization of functionings and capabilities. Others believe that Nussbaum's list pertains to the fact that her prescriptive approach may not work for all societies as her perspective stems from a privileged position as a philosopher from North America. (Stewart, 2001; Baber, 2007).

Alkire and Black (1997) while listing several problems with Nussbaum's approach arrive at their own dimensions of human flourishing based on a theory of practical reasoning. Qizilbash (1998) suggests a list of "basic prudential values" which are instrumental values and necessary requirements for the pursuit of any good human life. Desai (Desai, 1995) created a list on the view that the level at which a capability can be guaranteed differs on the basis of the resources required to acquire that capability. It hence differs across societies. Clark (2002) advocates a participatory approach that listens to the voices of the poor to draw up essential capabilities. Robeyns offers her own list of 14 capabilities for the conceptualization of gender inequality in post-industrialized Western societies. (Robeyns, 2003).

3. Decision of prioritizing and according weights

After selecting the relevant capability domains, the next question for a researcher to address is the aggregation and weighting of capabilities or functionings. Weights may reflect 1) the enduring importance of a capability relative to other capabilities or 2) the priority of expanding one capability relative to others. (Alkire, 2005). Aggregation could be intra personal i.e. aggregating the capabilities of one person or inter-personal i.e. comparing individuals. Dimensions can also be chosen such that they were of relatively equal weight. This, indeed, is the recommendation given by Atkinson and colleagues (Atkinson et al, 2002, pp.25) in their work on social indicators in Europe: 'the interpretation of the set of indicators is greatly eased where the individual components have degrees of importance that, while not necessarily exactly equal, are not grossly different'.

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SECTION D: Interlinking women's mobility, accessibility and the capability approach

Why is it important to bring accessibility of women centre stage and not study only mobility? What is the advantage of using the capability approach to do so? Both these questions which might strike the reader are answered below:

I. Bringing accessibility centre stage

It is important to emphasize the distinction between mobility and accessibility because policies in countries like India and China have been focused on improving mobility, often to the detriment of accessibility. More mobility does not always mean higher accessibility. For example, automobiles offer users a high level of mobility for car users, but heavy automobile traffic degrades other forms of mobility (particularly walking) and reduces accessibility for pedestrians. In places like India and China, improving mobility has been interpreted as reducing travel times through faster modes. This has resulted in building huge expressways that enable vehicles to go faster. Instead of improving accessibility, a rail project or an overpass construction has often blocked an easy approach to a bus stop or local market. In an illustrative example, when some low income households were moved to new colonies to create space for one of the lines of the Delhi metro, that accessibility deteriorated as distance to education, health services and other urban services increased significantly for all households although mobility, in terms of per capita trip rate increased (Anand and Tiwari, 2006). In Chennai, the construction of a flyover reduced the accessibility to schools and shops for women in the neighborhood as these places were no longer accessible on foot like previously (Srinivasan, 2008). For women, this approach to improving mobility is particularly detrimental, as women perform most domestic tasks like accompanying children to school or shopping for groceries and hindering access to these places, in fact, reduces their accessibility, as we read in the literature review Section B II (2). Also, given that car ownership is significantly higher for men, the interpretation of better mobility to mean faster vehicle speeds leaves most women out of the planning consideration.

As of now, there is not enough evidence of a link between ease of spatial access and how it can improve women's lives. The absence of enough inputs to policymakers about the impact of spatial access in women's daily lives results in overemphasis on improving mobility while overlooking the accessibility aspect.

1. Attention to the "quality of the trip" aspect of accessibility

Accessibility is greater with lower *friction of distance*, where the latter is a function of time consumption, economic expenses and inconvenience involved when travelling from one place to another (Naes, 2008). The last component of **'inconveniences involved'** which is a subjective element of accessibility, is infrequently discussed. It refers to the *manner* in which the place was reached, quite apart from the means

of transport used, time taken or cost involved. As the experiences of several people interviewed for this study reveal, sometimes places can be reached but the journey involves several uncertainties and inconveniences such that the person arrives at the destination after enduring a fair amount of discomfort, in the traveler's own evaluation. Therefore, instead of viewing accessibility only as "it is possible to reach?" This study includes "how does the "accessor" feel during the trip" into the ambit of the accessibility narrative. It relates to the qualitative experiential features of access – like convenience of travel, feeling secure, feeling safe and arriving at the destination in a comfortable way, as opposed to being late because of non-availability of transport at the right time, being tired because of walking too much to a transit point, climbing too many stairs to arrive at a platform, waiting too long at a bus stop, not being able to find a seat, experiencing sexual harassment during the journey or being stressed because of overcrowding or lack of parking space for those who commute by car- all of which contribute to a negative experience and detract from accessibility. This study views these intangibles as playing a vital role in the attainment of spatial accessibility, a dimension not enough focused on, but which defines journey-experiences, especially in developing countries.

A possible explanation as to why transport planning still lags behind in integrating gender into its planning practice is the utilitarian planning tradition in which the emphasis is on reducing transport problems to measurable numbers. Global urbanization demands that transport planning takes into account both quantitative measurements and user experiences and expectations from transport systems. (Scholten, T and Joëlsson, 2019). Studies like this which speak of lived experiences of a multiplicity of women users can help push transport policy to be more inclusive

II. Advantage of viewing mobility and accessibility through the capability approach

In the paper "Motility: Mobility as Capital" Vincent Kaufman and others, describe the idea of "motility" as a kind of "mobility capital" possessed in varying degrees by different actors. How they use their mobility capital depends on access, individual skill and competence to make use of the access and the appropriation of a particular choice. (Kaufman et al, 2004). This has parallels to Sen's view of conversion factors and resources where each individual's ability to convert resources into functionings depends on personal, social and environmental conversion factors. In Time Geography, Hägerstrand recognized that as every individual is part of a social structure, his or her spatial-temporal footprint is constrained by the prevailing social/environmental/cultural rules that govern each society. (Hägerstrand, 1970). Hägerstrand's approach went beyond explaining observed travel behavior to understand the constraints faced by an individual and how they limit behavior. [What all of the above imply is that mobility differs from person to person, depending on various externalities such as class, ethnicity and also on personal factors such as age and skills to be able to use available resources to become mobile.](#)

The Capability Approach focuses on the individual while recognizing that she is situated within a social and familial structure and that her capabilities are also influenced by other people's actions. As we shall see in

the chapters ahead, mobility constraints for each woman are different depending on a host of factors -some personal and others to do with the external environment. It is hence important to see one woman's mobility circumstance and its impact on her life as distinct from another's, which the capability approach allows us to do.

The employment of the Capability Approach also helps to see mobility in terms of a freedom. Mimi Sheller, says that the question of mobility's relation to freedom is crucial to emerging debates about what constitutes a 'good' society and good governance (Sheller, 2008). This debate has highlighted and introduced concepts like 'mobility citizenship' (Urry, 2000), mobility justice (Sheller, 2008.), uneven mobilities and the 'splintering' of urban space (Graham and Marvin 2001) and racialized or ethnic mobility injustices that impact on freedom of movement across borders and within national spaces (Hannam, Sheller and Urry 2006).

By considering mobility and accessibility to be capabilities, this study attempts to show how the presence or lack thereof of mobility freedom impacts other freedoms- freedom to pursue leisure activities for example. Or the freedom to look after one's fitness or freedom to care for someone. This perspective has hitherto been unexplored, to the best of our knowledge, whether for developed or developing countries.

Past research has identified the consequences of poor spatial access and limited mobility by pointing to social exclusion caused due to poor spatial access to opportunities (Preston and Rajé, 2006; McCray and Brais, 2007) or lack of access to healthcare facilities due to residence location (Field and Briggs, 2001) or exclusion from opportunities to increase their social capital (Urry, 2002). Some studies took an opposite view and focused on the consequences of good access- increased political participation due to access to ballot boxes (Gimpel and Schuknecht, 2003) or scholastic achievement for certain groups due to access to primary schools. (Talen, 2001). Much research has been done in the context of access to employment and the idea of "spatial mismatch" i.e. a mismatch between areas where low income population resides and job availability (Kain, 1968; Johnson, 2006) and to those with no access to automobiles (Pickup and Giuliano, 2005). Vandersmissen et al (2003) found that the strong wage differential between men and women, and part of it may be due to the spatial conditions that affect access to employment.

In this study we add more dimensions to the discussion on the consequences of poor access by bringing in other 'doings' and 'beings' that are affected by poor spatial access and how these impact well-being, for each individual. Once again, this is possible because of the broad vision of the capability theory that looks at the overall quality of life. This approach of the study where women's mobility and accessibility are looked at through the theoretical lens of the capability approach is figuratively depicted below:

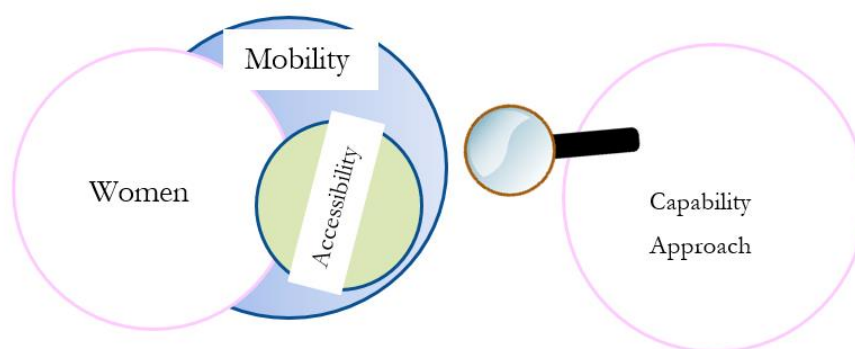


Figure 4 : Diagrammatic representation of the study : *Source: Author*

1. *Lack of studies viewing mobility and accessibility as capabilities*

Individual mobility is an essential precondition for the consumption and production of goods and services considered necessary in modern societies. (Hananel and Berechman, 2016). Hence it is also a basic capability-its lack will foreclose capabilities for education, employment, health and leisure, among others. Yet, mobility has been scarcely studied from the point of view of the capability approach. Mobility features in Robeyns list (Robeyns, 2005) of valuable capabilities to assess gender inequalities, though she considers mobility to be less important, relative to other capabilities and only an instrumental capability. But she concedes that it can also be valuable in itself since it enables movement between geographical locations. Research on mobility as a capability in relation to gender issues is rare (Kronid, 2008).

This ability to physically reach desired destinations i.e. spatial accessibility is almost completely unexplored from a capability lens. Accessibility does not find a mention in literature as a capability worth striving for, even as a form of capability that is a derivative of mobility. A survey of the literature indicates remarkably few which view accessibility in terms of capability. Among the scarce ones, which do make a connection between accessibility and capability is that of Smith et al, (2012) concerning a rural setting of the UK and does not consider gender. The study used the basic CA concept in a very simplistic way only to structure its results. Thus, there are possibly no studies which view women's mobility and accessibility in terms of capabilities, as this study attempts to do.

III. Time usage of working mothers

Time is a social fact based on normative and economic conventions and one that is strongly associated with well-being. Although all individuals have the same 24 hours of time per day, how people use and control their time varies by their social location. (Sayer, 2007). Gender emerges as a key factor to explain how time is distributed and used. (Colom, 2017). Women's and men's time use remains stubbornly gendered since they continue to do more housework and child care than men, although the differences show a slow reduction over a 40 year period. (Kan, Sullivan, & Gershuny, 2011; Sayer, 2010). Research has shown that

the space-time fixity – the degree to which they are bound to particular times and places – is higher for women than men. (Kwan, 2000; Schwanen et al., 2008).

The seemingly banal experiences like lack of time, prioritizing one activity over another and the tradeoff between time and space are crucial factors underlying the human experience, especially of working women. By studying time usage of working mothers' lives and drawing attention to the time they spend on being mobile, this study builds on these concepts and gives fresh insights from hitherto unexplored settings.

IV. Scarce research on the mobilities/accessibilities of women in developing countries

Gender-segregated data of transport usage or mobility habits is virtually nonexistent in Indian government surveys and organizations that deal with transport. The Ministry of Urban Development's report on Traffic and Transportation policies and Strategies (Wilbur Smith and Associates, 2008) does not use the word "gender" or "women" or "female" even once in its 150-page report. The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was launched during the year 2006 where 35% of the projects under this huge national mission was focused on investing in urban infrastructure, lacked a gender perspective. (Khosla, 2009). National level policies and missions have addressed women's concerns primarily through the lens of safety, with project and technology-centric interventions. (Shah et al, 2017). In many ways, "women's empowerment" is a buzzword in popular discourse but knowledge and data about women's lives is still scarce. Studies like this can open up pathways for thinking along gender lines in developing countries.

Through the focus on smaller urban cities, this study aims to take forward the growing body of work, exemplified by the recent book "Subaltern urbanization in India" (Denis and Zerah (Eds.), 2017) that reclaims the diversity of the urban phenomena beyond that of metropolitan cities and the clamor for labels such as "smart cities" and "global cities".

V. Expanding the understanding of factors affecting travel behavior

Several studies have linked travel behavior of different groups to public policies. J. Pucher analyzed data of a decade (1978-1987) for 10 western European countries, USA and Canada and observed that differences in travel behavior between countries arose largely from differences in public policies such as automobile taxation, variations in transit (public transport) subsidies, land use controls, and housing programs. (Pucher, 1988). Many scholars (Zhang, 2002; Litman, 2003; Guiliano and Narayan, 2003; Naess, 2003; Srinivasan and Rogers, 2005) have broadly agreed that higher density neighborhoods with mixed zoning and greater access to public transport modes are more likely to promote walking and cycling, more use of public transport and fewer car trips. High-density residential location is inversely related to distance travelled. (Cervero and Tsai, 2002). Neighbourhood design impacted travel behavior (Handy, 2005) as did residential location. (Goudie, 2003; Naess and Jenson, 2004). The shift from a monocentric to a dispersed city form

was found responsible, in the Québec metropolitan area, for increasing commuting time (Vandersmissen et al, 2003). These studies did not have a gender perspective and were looking at the impact of urban planning policies for the population as a whole, albeit by studying certain groups.

When we narrow the focus to women's accessibility, a surprisingly large number of policies/social institutions beyond land use and transportation swim into view. Building on this body of work, this thesis looks at unexplored aspects which affect women's accessibility such as child care facilities, school timings, availability of informal para transport, presence of street vending as well as social institutions like South Asia's intergenerational joint family system.

Thus the study aims to bridge the gaps in existing literature about the application of the capability approach to understanding urban women's mobility and experience of the city.

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CHAPTER 2 : RESEARCH PLAN AND METHODOLOGY

This chapter is divided into four sections. Section A describes the objective and research questions and the rationale behind the elements of the research plan. Section B presents the methodology of how the primary research was conducted, the sample size, sampling method, information obtained from the primary research. To analyze the data and answer the research questions central to this study, a new visual technique was created which is explained in Section C - "Game of Cards". Section D presents the analysis framework listing the information sources used to answer each of the research questions. Put together, this chapter explains which questions the study intended to address and how the data required to address them was obtained and analyzed.

SECTION A: Research Plan

I. Objective of the study

As stated in 'Background and Introduction', the study aims to understand the role of mobility and spatial accessibility in women's overall well-being, by examining the daily mobilities and lived experiences of urban working mothers. The theoretical framework used for the study is Amartya Sen's Capability Approach. Hence, the objective of this research is to study **the capability for mobility and spatial accessibility of urban women and its relation to their overall well-being.**

II. Hypothesis:

Capability for mobility and/or spatial accessibility affects the overall wellbeing of urban working women.

The hypothesis is founded on the literature on women, mobility and the capabilities considered necessary for well-being, described in Chapter 1. The premise that the capability for mobility is essential for well-being has only been tentatively put forth in existing capability literature; Spatial access appears to be an important capability but the extent of its vitality to overall well-being is not proven. This stems from the fact that accessibility is still trying to appear from the shadows of the larger concept of mobility that dominates existing literature. The role of mobility and accessibility in women's well-being appears to be a hypothesis that can be tested by exploring the following research questions.

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III. Research Questions

1. What are the mobility characteristics of urban working women?

By answering this question, we try to understand what secondary data already has established as the characteristics of urban women's mobility; how it differs from that of men and what are the geographical specificities of these characteristics.

2. What is the extent of the capability for mobility among urban women and what factors influence this capability?

Once we get a macro picture of urban women's mobility from Research Question 1, we explore if mobility is a real freedom for urban women; what its limits are and who imposes them. Conversely, which factors enable 'mobility freedom'?

3. Do women who have capability for mobility also have capability for spatial access?

Is mere mobility enough? Or is it a necessary but insufficient condition for reaching destinations? How do women feel in the daily mandatory journeys they undertake-when they are out in the city, using public transport, finding parking space? Does the fact that they are moving from one point to another compensate for poor journey quality, for the experience of the travel? In other words how important is spatial accessibility.

4a. How does the capability for mobility and spatial accessibility affect other capabilities?

What is the interplay between being mobile/having access to destinations and other aspects of urban women's lives, such as when they are at home? Are there repercussions of mobility on overall well-being or are journeys outside home a separate entity that have no impact on any other aspect of the woman's life? Is the presence of mobility instrumental for the achievement of other capabilities and if yes, which ones?

4b. What are the constraints to achieving the capabilities required for overall well-being?

Is the absence of mobility a constraint to well-being? What other constraints impede women's well-being?

The data sources that will be used to answer each research question and the analysis approach for each have been elaborated upon in Section D.

IV. Approach

Sen's capability approach moved away from evaluating well-being only in terms of income, unlike other utility theories, to each person's capability i.e. their freedom to undertake activities that they have reason to value and be the person they want to be. This, in turn, depended on each person's context and the resources they were able to command. The Capability Approach treats each person as an end and as a source of agency

and worth in her own right. The intent of the capability approach stems from a humanistic concern with the "quality-of-life" and everyday freedom of action for individuals.

As the objective of this study was to view women's freedom for mobility using the capability approach, a qualitative framework was found more suitable since factors influencing a woman's mobility are not homogeneous. As Miles, Huberman and Saldana (2014) write in their seminal book on qualitative analysis: *"Qualitative data, with its emphasis on people's lived experiences, are fundamentally well suited for locating the meanings people place on the events, processes, and structures of their lives and for connecting these meanings to the social world around them."* The primacy given to each person's life circumstance by the capability approach and the fact that individual women's mobility would depend on specific constraints prevalent in her life made a qualitative approach more congruent to this study than a quantitative one. The sample size, sampling technique, instruments used and analysis stemmed from this requirement.

V. Choice of Sample

The sample chosen was of **urban working mothers between the ages of 25-50 who have at least one dependent child and hold full-time jobs**. This cohort was chosen from the universe of urban working women because as discussed in the literature review, (See Chapter 1 Section.B.II.2.) mothers with dependent children have more constraints than those who don't have dependent children. The age bracket was fixed as this cohort was most likely to have dependent children.

By dependent, here we mean having children who are school going and live with their mother, dependent on her for day to day maintenance activities such as food, laundry, help with certain school tasks, being taken to the doctor, being taken for classes after school, etc. The preference was to find mothers with as young children as possible, as younger the children, more are the mother's temporal and spatial constraints. However, in a few cases in the sample, there are mothers who have older adult children but as these children still live in the parental home they are dependent on the mother financially and for some basic maintenance. Full-time work has different meanings in different countries and even differs across employers. The French government stipulates a statutory working time of 35 hours per week for a salaried employee. According to the Indian census, a full-time worker is one who has been working for at least 6 months or more, in the period of reference.

These definitions do not take into account a number of occupations, typically done by women, which require the person to work daily, in a workplace other than at home, but for less than 8 hours per day. It is well established in literature that even full-time working women work fewer hours than men (Refer Chapter 1, Section B. III.). Hence the stipulation of a minimum of 7-8 hours would exclude a number of women from being considered full-time workers. For example, since nursery schools are open for fewer hours than primary and secondary schools, a nursery school teacher works for about 5-6 hours a day and not 8 hours. From her employer's point of view, this would be a full-time job because she is there for the full-time that the school is open, every working day.

Therefore, given the wide variation in the nature of jobs and timings that women do, in this study full-time has been considered to mean that **the respondent was working every day of the week from Monday to Friday, dedicating at least 5 hours of the day to the work, excluding commuting time.**

Hence the necessary conditions to be fulfilled to be selected as a respondent in the study were:

1. Being 25-50 years of age
2. Being a full-time employed women, as per the definition of full-time highlighted above
3. Having at least one child living in the same household who is financially and for daily maintenance activities dependent on the mother.

VI. Selection of Cities

Having determined which subset of urban working mothers to study, the next decision was to decide on the geographies of the study. The reason why India was found apt to study the situation of urban women has been explained in the section “Need for the Study” in the first chapter.

There is indeed a universality to the status of the woman as a chief domestic manager and caregiver. As detailed in the Literature Review, the “double burden” of working outside the home and performing care duties at home is true for working women in all countries although the support systems in each country may be different. Referring to the Human Development Report 1997 of the UNDP, Nussbaum writes “No country treats its women as well as its men” (Nussbaum, 2000). Nearly two decades later, the UNDP’s Human Development Report for 2016 (UNDP, 2016) shows that closing the gender gap continues to be a problem needing the world’s attention. Thus, the idea of choosing a small city in France and two small cities in India was to build upon this notion that women’s lives have many elements in common owing to their substantial responsibilities of home and children, no matter in which part of the world.

It is against this background that Grenoble was chosen as one of the cities for conducting primary research. Given below are the rationale for the selection of cities within India.

1. Which Indian cities?

i. Smaller rather than larger cities

As elsewhere in the world, in India too, researchers, geographers, sociologists, and economists have been focusing their attention on the top layer of the urban hierarchy and routinely cultivating a metropolis-biased vision. World cities/ global cities are grabbing their attention while the burgeoning common urban landscape, small and medium-sized where a growing majority of the world’s urban citizens live, remains an unknown place. (Denis and Marius-Gnanou, 2011).

Along the same lines, studies on women’s mobilities, daily lives and freedoms negotiated conducted in India have mostly focused on large cities. Chennai (Srinivasan, 2002, 2008) Rajkot (Mahadevia, 2015) (Mahadevia and Advani, 2016), Ahmedabad (Mahadevia et al, 2012), parts of Delhi (Anand and Tiwari, 2006), parts of

Pune (Astrop et al, 1996), Vishakhapatnam and Udaipur (Mahadevia, 2015). Some recent studies have re-examined women's fear of violence while travelling on city roads- (Desai et al., 2014) and (NEN,2013) for Guwahati, (Bakde, 2014) for Ahmedabad, (Bhat et al, 2016) for Bhopal. Studies about women's lives in smaller urban centres (population around 1 million) are almost nonexistent. Hence the decision was to focus the study on two of India's smaller cities.

A north Indian and a south Indian city

Northern and southern India have distinct differences in socio-cultural attitudes, especially towards women's freedom. As the researcher is originally from southern India but has been living in northern India throughout her life, while keeping close connections with her ancestral region in the south, she was familiar with these differences. Scholarly work supports the researcher's hypothesis about gender equity differences between north and south India. One of the most influential was Dyson and Moore's study (1983) which opened the modern debate about gender equity in India attributed differences in marital customs between the two regions as being responsible for North Indian women's lack of autonomy and low status versus their sisters in the south who had more authority and mobility. Southern women's relatively more autonomy was confirmed by Basu (1992), economists such as Bardhan (1974) and anthropologists (e.g., Miller, 1981) who argued that differences in economic conditions were responsible for this divergence in female autonomy. More recently, Rahman and Rao (2004) revisited Dyson and Moore's assumptions and concluded that economic factors, state action, and restrictions on mobility were powerful explanations of differences in female autonomy between North and South India. A study of women in Pakistan, north India and south India (Jeejabhoy and Satar, 2004) also suggests that in the patriarchal and gender-stratified structures governing the northern portion of the subcontinent, women's control over their lives is more constrained than in the southern region.

Also, since the focus of the study is women's freedom for mobility, safety of women in public spaces was another consideration. In this dimension too, there is a distinct north-south difference.

Female autonomy determines the capability for mobility in the city, since "freedom" i.e. autonomy is used by Sen interchangeably with "capability" as we saw in the Literature Review on the Capability Approach. As there is a clear difference in the level of female autonomy in northern and southern India due to differences in urban infrastructure, socio-cultural and even economic conditions, it was decided to choose a northern and southern small city as the sites of primary research.

Selection of the northern and southern city

In order to ensure a certain harmony of scale and urban characteristics, the Indian cities chosen had to be similar to Grenoble in terms of size, importance to their respective regions and to the country.

The population of France is approximately 66 million people as of 2015. The population of India is 1.2 billion people as of the last census of 2011. The population of Grenoble Alpes Metropole was 4,51,752 in 2014. Although India's population is 20 times more than that of France, if we were to apply the same

multiplier and choose Indian cities which had twenty times Grenoble’s population, these would be Hyderabad and Bangalore (population 7 to 8 million as per 2011 census). These cities are large, metropolitan Indian cities which are also state capitals. Hence, the cities in consideration were those that had double of Grenoble’s population i.e. roughly in the range of 8,00,000 to 10,00,000. There were towns which come under this population band as shown below.

Table 1: Selection of Indian cities for primary research

State	Location	Name Of City	Popn. of The Agglomeration (2011 Census)	Characteristics
1.Chhatisgarh	Central-eastern India	Durg-Bhilai	10,64,222	Township built around iron and steel manufacturing centre
2. Punjab/Haryana	North	Chandigarh	10,26,459	State capital, India’s most planned city
3.Tamil Nadu	South	Tiruchirappalli (Trichy)	10,22,518	
4.Rajasthan	West	Kota	10,01,694	
5.Odisha	East	Bhubaneshwar	8,86,397	State capital
6.Punjab	North	Jalandhar	8,85,938	
7.Telangana	South-East	Warangal	7,53,438	

Kota and Warangal could have been suitable as they are situated in the north and south respectively, the preferred locations as explained earlier. However, Warangal was not chosen as the language spoken is Telugu which the author does not know. Since the author’s mother tongue is Tamil, Trichy in Tamil Nadu presented a feasible option. Hence Trichy was chosen as the southern site for the study.

In the north, Chandigarh, Kota and Jalandhar were possibilities. Chandigarh is India’s most planned city, designed by Le Corbusier and is the capital of two states -Haryana and Punjab. State capitals have more budget allocation for infrastructure, than other cities in the region. For these reasons, Chandigarh would not have been representative and was hence not selected. Kota was a possibility as the language spoken is Hindi, which the author is proficient in. It is also an educational and industrial centre. But Kota urban agglomeration has one peculiarity- It consists only of Kota city. There is no main city surrounded by small towns which together form an urban agglomeration. Hence the mobility patterns are different from those of typical agglomerations where urban sprawl around a central city causes growth in the periphery of the city. As Kota’s urban structure is atypical, it was not chosen as the site for study.

Thus, by this process of elimination, Jalandhar and Trichy were chosen as the geographies in which primary research was conducted. These two cities also possessed certain other characteristics which were similar to

Grenoble. Like Grenoble which is a university town and an important industrial centre of the Rhone-Alpes region, both Jalandhar and Trichy are educational and economic hubs of their respective regions.

VII. Geographical scale of the study

In all three cities, the geographical scale was chosen as the urban agglomeration. According to a recent paper which examines more than 30,000 works related to urban agglomeration, there is no consensus in the research community with regard to what an urban agglomeration is or how it is delineated in geographic space (Fang and Yu, 2017). In the Indian context, there are various definitions and classifications of what constitutes 'urban' and 'agglomeration' as Denis and Marius-Gnanou (2011)'s in-depth analysis shows. Nevertheless, the Indian Census defines an urban agglomeration as follows:

“Urban Agglomeration (UA): An urban agglomeration is a continuous urban spread constituting a town and its adjoining outgrowths (OGs), or two or more physically contiguous towns together with or without outgrowths of such towns. An Urban Agglomeration must consist of at least a statutory town and its total population should not be less than 20,000 as per the 2001 Census”

A statutory town is defined as one administered by a municipal corporation and having a population greater than 100,000 people. An outgrowth is a viable unit such as a village or a hamlet or a block made up of villages or hamlets and clearly identifiable in terms of its boundaries and location. Some of the examples are railway colony, university campus, port area, military camps, etc., which have come up near a statutory town outside its statutory limits and possessing urban features in terms of infrastructure and amenities.

Jalandhar and Trichy cities (i.e. area within the municipal borders) are indeed statutory towns. However, pilot studies and observations revealed that the lives of the working population, and indeed that of the respondents in this study, consists of constant interaction with the towns around the city. Some people live in the ??? and work in areas outside the municipal limits while some do the opposite. This makes it pertinent to study the urban agglomeration rather than only the urban area under the municipal corporation.

The urban agglomeration of Jalandhar consists of Jalandhar city + four towns, out of which one is what is called a census town i.e. with a population > 5000 while the remaining three are small urban outgrowths. The area of the UA is 106.09 sq.kms and the total population is 8,62,886. The map of the Jalandhar urban agglomeration is given in the chapter on [Jalandhar city](#).

The urban agglomeration of Trichy consists of Trichy city and 8 surrounding small towns whose population and type is given in Table 1 of the chapter [“Trichy city: Temple town meets manufacturing centre”](#). Of these 4 have a population above 5000 (census town) and one has a separate municipality and was merged with Trichy municipal corporation as late as 2011. Together, they cover an area of 211.5 sq. kms and contain a population of 1,02,2518. This makes Trichy one of the million plus agglomerations of India.

Until 2013, the urban agglomeration of Grenoble was called Communauté d'agglomération de Grenoble (a grouping together of several adjoining municipalities and together having a population >50,000 inhabitants) and consisted of 26 communes. A law was passed by the French government in 2014 to create an administrative entity called the métropole in which several adjoining communes, centred around a principal commune, cooperate for collective economic growth. In 2015, the Grenoble Alpes Metropole was created encompassing 49 communes containing within it the older 26 communes. It covers an area of 541 sq. kilometres and has a population of 4,51,752 inhabitants.

For this study, the term “métropole” and “agglomeration” are used interchangeably. Also, unless specified, in this chapter “Grenoble” refers to the entire metropole, not only the commune/city of Grenoble. Similarly, “Jalandhar” and “Trichy” refer to the entire agglomeration unless specified as “Jalandhar city” or “Trichy City” which refer to the area governed by the respective municipal corporations.

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SECTION B: Methodology of Primary Research

I. Sampling technique

Purposive sampling¹ was undertaken in each city where urban working mothers who fulfilled the criteria fixed for this study (being 25-50 years of age, full-time employed with at least one dependent child) were selected through word of mouth and at times by approaching them directly. As explained in the section “Diversity of the sample”, a mix of working mothers across social classes and job types has been achieved in each city. Purposive sampling enabled this because the researcher could exercise control over the type of respondents met. For example, if there were too many respondents of higher social classes, it was possible to stop interviewing more of the same and deliberately seek low income respondents. This is how, for example, the factory workers in Jalandhar of social class D were reached. Once a sufficient number of middle class respondents had been interviewed, through a local contact, access was obtained to some of the factories on the outskirts. Similarly, in Grenoble, urban working mothers from different parts of the city were purposefully sought to arrive at a mix of social groups.¹ Both Jalandhar and Trichy are not cities the

¹ Purposive sampling also called selective sampling, is a nonprobability sampling technique in which elements of a sample are chosen in a non-random manner based on certain characteristics, depending on the objective of the study.

author has lived in and was hence did not have any previous network there. The following preparation was done before visiting the cities:

JALANDHAR

Pilot study

In November 2015, a pilot study trip to Jalandhar was undertaken to familiarize oneself with the layout of the city and the available transport network. On this trip, a visit was made to the municipal corporation of Jalandhar to obtain maps and masterplans of the city and speak to municipal officers about the development projects undertaken and urban issues for women, as the municipality's website provides very basic information about the city. Two test interviews were also conducted.

Actual study

Final interviews were conducted in March 2016 and in August 2016. Each trip lasted 5 days. Prior to the fieldwork, some friends/acquaintances who had connections in Jalandhar were contacted and through them, local contacts were obtained. These local contacts provided access to the respondents by enabling permissions to visit offices, factories, etc. The author used the available means of public transport to understand the experience of women who travel in them every day.

TRICHY

Pilot study

A pilot study was done in March 2016 where the municipal corporation of Trichy was visited, officers interviewed and relevant documents collected, as the municipality's website provides very basic information about the city. Two test interviews were conducted.

Actual study

The actual study continued in March 2016 a few days after the pilot study. The second phase of fieldwork was in August 2016. In Trichy also, a few local contacts were established prior to commencing fieldwork, through the author's own personal network. These local people put the author in touch with working mothers whom they knew.

The author also used the city's bus services, rickshaw, auto and cab sharing service to get a firsthand experience of women's mobility in the city. A visit to Trichy's flagship university, Bharatidasan University was made to meet professors in the Department of Women's Studies to gain an understanding of working women's status and issues faced in Trichy.

GRENOBLE

The fieldwork in Grenoble was conducted in May 2015 and again in December 2015. As the researcher was a resident of the city at that time, she was familiar with the agglomeration and was a habitual user of the

public transport system. In Grenoble, the municipality's website www.villedegrenoble.fr provides maps, future urban plans, socio-demographic characteristics of each sector and other relevant information. Hence it was not necessary to visit the municipality. Prior to the commencement of the actual study, four test interviews were conducted.

As the author was a foreigner in Grenoble, there was limited access through personal networks. These networks only led to urban working women who belonged to the educated middle class section of society. Hence, the author made a deliberate attempt to find working mothers in the south Grenoble area of Villeneuve and Village Olympique which have predominantly low income households. Nine out of the 31 respondents were from this area and belonged to lower income groups. These respondents were approached directly, without any intermediate contact-(i.e. in parks, in the tram, in a public place) to seek appointments for interviews and were subsequently met at a convenient date and time.

II. Sample Achieved

A total of 116 interviews were conducted with the targeted subgroup of women –(urban working mothers with at least one dependent child)- across the three selected cities of which 49 were in Jalandhar, 36 in Trichy and 31 in Grenoble. The interviews were audio-recorded on a mobile phone. All the interviews were conducted by the author without the help of any translator or third person. Interviews in Grenoble were conducted in French (except one in English), in Jalandhar in Hindi and English and in Trichy in Tamil.

All respondents in Grenoble signed an agreement with the respondent regarding the utilization of the data and ensuring anonymity given at the end of the questionnaire in Annexure 7a. Names of respondents in all cities have been changed.

1. Characteristics of the Sample

There was a conscious attempt to ensure diversity in the sample in terms of family structure i.e. **married/single; spatial and temporal variability in the nature of employment and in socio-economic class.** While the majority were in salaried jobs, within that group there was variability of timings and workplaces. Even within those who had fixed timings, some had conventional hours of 9 to 5 or 10 to 6 in the mornings while others had workdays starting early morning at 5.a.m. or shifts which began at 3 p.m. ending at 10 p.m. The sample mix of salaried, self-employed who work outside and few who worked from home was deliberate, in order to obtain a panoramic view of various contexts that urban working mothers function in.(Further details about the composition of the sample has been given in each case study in Chapters 4, 5 and 6).

Socio-economic classification was made based on the respondent's occupation which was collected in 100% of the cases, along with additional details about the nature of work (temporary, permanent), kind of organization, hours of work and in several cases in India, also the salary earned. This is consistent with

several studies which use SEC based on the idea that in a market economy, a person's position in the labour market determines her own and her family's life chances. Occupation is taken to be the central indicator of a person's position in the labour market (Rose and Harrison, 2007). Four types of classifications of occupation that could potentially be used for this study were identified:

- I. French system- « Nomenclature des Professions et Catégories Socioprofessionnelles (PCS).
- II. Indian system – SEC classifications of the Indian market used for predicting consumer behaviour OR National Occupational classification of the Ministry of Skill Development
- III. International Standard Classification of Occupations of the International Labour Organization-ILO
- IV. European SEC – Esec

Out of these, the last system the European socio-economic classification was found to be most suitable (Brousse, 2009). This system has ten of which, certain categories were merged in order to simplify and arrive at four categories A, B, C, D where A is the topmost class and D the lowest. The description of the type of occupations in each category is given in Annexure 8.

III. Instrument Used in Primary Research

Personal interviews were conducted using a semi-structured questionnaire, containing both objective and open ended questions. Two specific tools within the personal interview were used:

1. Schema Déplacement (See questionnaire in Annexure 7a and 7b)
2. A visual technique called Game of Cards created for the purpose of eliciting responses about achieved and desired functionings. (Refer to Section C in this chapter “Game of Cards”).

The interview was structured because all respondents did receive the same set of questions and some questions had a pre-established limited set of response categories (For example, criteria for evaluation of public transport). At the same time as some questions were open ended, the interviewer had to be open minded and empathetic, if the respondent gave a long response which touched on topics that were not pre-set in the questionnaire. To give an example, if the question was about safety on the roads, respondents often narrated an incident, which may have happened years ago, and perhaps to someone else, as an example about why the city was unsafe. Some women, when asked about housework, were triggered to speak about their dissatisfaction with their husband's role in the family on the whole and their marital relationship. Thus, the complexities and problems of women's lives being numerous, whatever the context, a certain amount of leeway to step beyond the questionnaire was inevitable in the interviewing process. To that extent, the interview was unstructured. Table 2 lists the information areas in the questionnaire and the details obtained in each section.

Table 2: Information areas in the questionnaire

Question Number	Indicator	Variable Name	Details	Derived information	Type of question and corresponding number in questionnaire
Section 1	Respondent Details/ Classification de répondeur	Age			Objective.
		Marital Status	Married/Divorced/ Widowed		
		Number and age of children			
		Number of people living in the household and their relationship with the respondent			
		Area of residence			
	Occupation of respondent	Type of job		Socio-economic class	Objective
		Location of workplace			
		Timings			
	Occupation of respondent's spouse, if relevant		Type of job, Location of workplace, mode of travel, timings (not all details in all cases)		Objective
Section II	Mobility Habits/ Comportement de Mobilité	Activity Space Set of spatial locations in the city frequented on weekdays and weekends			Objective (Map of city shown)
		Daily Mobility Everyday movement between activity locations taken for 1 specific day- i.e. "yesterday".	a. Number of trips made b. Start time and end time c. Purpose of each trip d. Mode of transport used e. Origin and Destination	f. Duration of each trip g. Time spent between trips in each location (e.g. in workplace, shop etc.) e. Distance traveled	Objective (Schema déplacement/ Daily Trip Recording Sheet) Google Maps (to verify time and distance between origin and destination).
			d. Origin and destination per trip		
Section II.	Mobility attitudes and opinions/ Attitude par rapport la mobilité	Perceptions And Feelings about locations in the city	Locations avoided for various reasons		Descriptive

Section III.	Transportation/ Avis des Infrastructure Urbain	Public Transport			
		Usage Experience part A	Frequency/Safety/ Cleanliness/Comfort/ Spread of network		Objective+ Descriptive
		Usage Experience part B	Perception, feelings, opinions-Of personal experiences and feelings while using formal public transport, (tram, bus) +informal transport like auto rickshaws		Descriptive
		Car/Cycle/ Scooter			
		Usage Experience	Descriptive- Ease of driving in the city, ease of parking, price of parking, sense of safety		Descriptive
Section IV.	Game of Cards- Functionings	Doings	Activities done presently	Present Capabilities corresponding to functionings chosen	Objective- Selection of cards in Game of Cards
			Potential activities that she would like to do but is unable to	Potential Capabilities corresponding to potential functionings selected through picture cards.	
			Constraints faced in achieving potential		Descriptive- discussion with respondent
		Beings	Who she is presently		Objective- Selection of cards in Game of Cards
			Potentially who she would like to be but is unable to		
			Constraints faced in achieving potential		Descriptive- discussion with respondent

In the course of the interview, other information areas obtained from the respondent that stemmed from the discussion were :

1. Division of labour within the household
2. Help offered by other members of the household such as in-laws or by hired help
3. Attitude to work
4. Short and long term aspirations for self and family
5. Reasons for choice of mode of transport
6. Opinion about the city

SECTION C: The Game Of Cards

For a theoretical background of operationalizing the CA please refer to Chapter 2. Section C.VII “Operationalizing the Capability Approach”. The Game of Cards methodology follows the guidelines of Ingrid Robeyns (2003) in her paper ‘Selecting Relevant Capabilities’ for practical application of the CA and draws inspiration from the use of visual techniques in previous CA studies, cited ahead in this section.

To apply the CA, one cannot ask respondents directly ‘how their capabilities are today’. Instead, thoughtful application is needed to capture the (realized and potential) choices of individuals and to identify the constraints on these choices (Ibrahim, 2014). The information required was along two lines:

- a) Achieved functionings: what they are able to do and be in daily life
- b) Potential functionings: what they value but are presently unable to do and be

This was to be followed by a discussion on the constraints that prevent the achievement of potential functionings and the respondent’s view on how this can change, thereby introducing the ‘conversion factors’ that determine the achievement of valued aspirations.

Functionings are a sum of the “Beings” and “Doings” of a person’s life. The question of what a person is “able to be and do” is rather amorphous. An average respondent would find it difficult to structure their thoughts and come up with a cogent response to a direct question like “What are all the activities that you are able to do typically?” because the level of aggregation is unclear. The respondent may wonder if routine household cleaning is to be included or if grocery shopping is too mundane to mention. The dilemma is even more when the answer sought is on the lines of “Who are you able to be?” which evokes thoughts about identity and roles played in daily life but is too abstract for everyone to easily articulate. When the question is of functionings which are desired but unrealized (“What do you want to be and do but are unable to?”) then this steps into further uncharted territory for the respondent as people do not dwell on these questions routinely to come up with ready answers. These difficulties were realized through testing the questionnaire with colleagues in the laboratory and the ensuing discussions. Open ended questions ran the risk of the respondent inadvertently omitting some activities.

There were other stumbling blocks envisaged. The question of potential (valued but unrealized) functionings, if asked directly, could touch upon familial or personal restrictions to freedoms that could be sensitive topics. About a quarter of India’s urban female working population is illiterate (Census, 2011, Table B27). As the sample design included working mothers who are from all strata of society, the abstract question of “Beings” and “Doings” would be particularly challenging for the poorly educated in the sample.

It was felt that the use of images may help to alleviate these challenges. Visual aids could help respondents structure their thoughts. Showing pictures stimulates the respondent’s memories in diverse ways than

through verbal-based interviews and in ways potentially unknown to the researcher (Clark-Ibanez, 2004). Visual aids could have the ability to soften the context in which responses are sought, by introducing an element of informality and playfulness in the interview. Compared to regular verbal questions, pictorial representations are probably more effective in making poorly educated respondents understand what is being sought by the interrogator, more clearly.

Though not very common, visual techniques have been used by some capability researchers in their fieldwork. Cards were used in a CA based study in Brazil (Frediani, 2014) to survey different segments of the Brazilian population about their priorities regarding what should change in the country. Here, as part of a qualitative methodology, cards were used during focus group discussions to record opinions of participants. These cards were then displayed on a wall to serve as a visual device to tie together the various points of the discussion.

The qualitative research method of using photos is called photo-elicitation (Shaw, 2013). In PEI (Photo elicitation interviews) researchers introduce photos into the interview context as a tool to expand on questions. The PEI methodology can “mine deeper shafts into a different part of human consciousness than do words-alone interviews” (Harper, 2002 p.23). Another variant is termed “Photo-voice” which is defined as a participative approach using photographs to elicit discussions around the photographic stimulus (Wang et al., 1998).

Frediani has used visual materials as a means to elicit discussions on capabilities in earlier research as well. For example, drawings related to different slum upgrading options to investigate people’s freedom to pursue their housing aspirations (Frediani, 2007) and photo-elicitation exercises to explore the well-being of children with disabilities living in slums in Delhi and Mumbai. (Frediani and Walker, 2011). He finds that visual materials deepen and encourage more inclusive discussions as “pictures revealed images and thoughts related to everyday life that would have been difficult to capture by the researchers themselves” (Frediani, 2014). A visual methodology using photos have been employed with children to engage with them and to capture alternative creative framings of wellbeing and capabilities (Kellock and Lawthom, 2011). The card technique is particularly effective when the researcher is trying to unveil issues which are not easy to express. In a study in Argentina,(though not using the capability approach) concept cards were used among women interviewees to enable them to converse about their perceptions about their bodies (Sutton, 2011).

I. What is the GOC method?

Combining the techniques of photo elicitation and use of concept cards in personal interviews, image cards were used in this study to elicit responses about the achieved and potential functionings of the interviewees. The technique so created has been termed *Game of Cards* and will be referred to by the acronym GOC for the rest of the thesis. Given below are the elements that comprise the structure of the GOC.

According to Alkire (Alkire, 2005), an application of the CA ought to explicitly justify its specifications and try as much as possibly to explain how these specifications affect the results. In the points below-A, B and

C- each of the specifications listed by Robeyns is elaborated upon followed by an explanation of how it has been adapted for the GOC.

II. Should it be functionings or capabilities or both?

Considering the various viewpoints in this debate of functionings versus capabilities. The “Game of Cards” (See chapter 2 . VI . (4)) bases itself on the view that both functionings and capabilities are important to evaluate wellbeing. Thus, data was collected about the various activities that working mothers in the sample engaged in on a quotidian basis. Those functioning vectors (i.e. combination of beings and doings) which point to a particular capability were then bunched together retrospectively. The activities performed were deemed to be indicative of the capability (real opportunity or freedom) that allows them to occur. In Robeyns words “*given that we have little direct information about people’s capability levels, we could start by taking group inequality in achieved functionings as indicative of inequalities in capabilities.*” (Robeyns, 2003, pp. 85). **Thus, inequalities in achieved functionings are taken to mirror inequalities in capabilities.**

III. Selecting relevant functionings

Robeyns recommends a four-step approach of unrestrained brainstorming, testing the draft list by engaging with the existing academic literature in the field, comparing the list with other lists and debating the list with other people. (Robeyns, 2003)

1. Unrestrained brainstorming

The spirit of the capability approach is to use multiple types of information (Comim, 2008). This echoes Sen’s view that “*Human lives are battered and diminished in all kinds of different ways, and the first task, seen in this perspective, is to acknowledge that deprivations of very different kinds have to be accommodated within a general overarching framework.*” (Sen, 2000, pp 18). The functionings depicted in the GOC were created by first drawing up an unrestrained list of the quotidian activities that a working mother in France and India engages in respectively. The list spanned a range of spatial and temporal dimensions in a working mother’s life- at home in the morning before leaving for work; at school; while on the journey to work; at lunchtime; on the journey back home; at home in the evenings; outside the home in the evenings and finally at home before going to bed.

2. Engaging with existing literature

To check if these activities have parallels in existing literature, cross checks were made against two secondary data sources:

- a. The literature on women’s daily lives, particularly their role as unpaid workers in the domestic sphere and the gendered pattern of daily mobilities as given in Chapter 1, Section A (II and III)
- b. The second source to understand types of daily trips undertaken is the household travel survey of the French government (Enquête Ménagement Déplacements) which provides gender disaggregated data

trips undertaken under the headings Work, Accompaniment, Health and sustenance, Household purchases, Leisure.

Following this, a list of functionings (beings and doings) performed by a working mother in a typical 12 hour day was compiled, which is given below. Of course, not all activities were performed by everyone and neither was the list exhaustive, but application on the field showed that the list was comprehensive and representative of most situations.

These functionings are a mix of “beings and doings”. Thus, the working mothers’ well-being was evaluated by the freedom or “real opportunities” they have to pursue different functionings. The ability to achieve these functionings represent the presence of related capabilities, such as *the capability for domestic and caregiving work, capability for paid work, for mobility, for leisure (inside and outside the house), for religion, for physical and mental health, for social networks and for nurturing relationships*. Given below in Table 2 are the capabilities finally selected as essential for well-being and their corresponding functionings.

TABLE 2 : List of functionings under selected capabilities

DOINGS	BEINGS
1. Domestic work and Child Care	
Preparing meals (breakfast/lunch/dinner)	Being a good cook
Buying groceries in a supermarket/shop	Being a multitasking/busy woman
Escorting children to/from school/bus stop	
Escorting children to/from hobby classes	
Helping children with homework	Being a woman stressed by various demands on her
Taking children outside the house- (to a park)	
Taking someone in the family to a doctor- elder person or child	
Buying vegetables in the market/bazaar/street vendors	Being part of a traditional Indian family
Cleaning the house -Sweeping/Vacuuming/Mopping	Being part of a modern Indian family
Washing/drying clothes	
Washing vessels	
2. Mobility	
DOINGS	
BEINGS	
Riding a two wheeler (India)	
Travelling by public transport	Being independently mobile.
Driving a car	Being stressed while travelling
Riding a cycle or auto rickshaw (India)	
Walking	
Cycling	

3. Religion	
Going to a place of worship	Being a religious/spiritual woman
Praying at home	
Attending religious talks	
4. Leisure	
Watching TV/Surfing the net	
Listening to music	
Going to cinema	
Going for shopping	
Eating out	
Going to the salon/beauty parlour	
Going for a holiday	
5. Social Network	
Chatting on phone with friends/family	Being a woman with an independent social life
Visiting friends and family	
6. Paid Work	
-	Being at work
-	Being financially independent
7. Physical and Mental Health	
Exercising in a gym	Being a healthy, physically fit woman
Exercising at home	
Going for a walk	
Visiting a doctor for one's own health	
Going to a spa	
Doing meditation	
8. Nurturing relationships	
Spending relaxed time with one's family	Being a "good" partner/wife
Telling stories to a young child/Playing	Being a "good mother"
Visiting one's maternal home	Being a "good" daughter
Spending relaxed time with in laws	Being a "good daughter in law"

3. Comparison with other lists

As this is a study on women's well-being assessment, the most relevant list for comparison was that formulated by Robeyns in her paper "Measuring gender inequality in functionings and capabilities: findings from the British Household Panel Survey" (Robeyns, 2006). The comparison of capabilities in this study versus those in Robeyns' list is shown below in Table 3.

Table 3: Comparison of selected capabilities with another list	
Robeyns' list	Included in current study
1. Life and physical health	
2. Mental well-being	
3. Bodily integrity and safety	No
4. Social relations	
5. Education and knowledge	No
6. Domestic work and non-market care	
7. Paid work and other projects	
8. Shelter and environment	No
9. Mobility	
10. Leisure activities	
11. Religion	

These capabilities listed above match 8 out of the 11 capabilities that Robeyns has listed for measuring gender inequalities (Robeyns, 2006). The dimensions of life and physical health and mental well-being have been merged. The capability that has been added to those present in Robeyns' list is 'Nurturing Relationships' which refers to a woman's immediate relationships with her family and 'inner circle'. This was added, as both discussions and literature revealed the importance working mothers placed on their role as 'mothers' and the guilt many carried of not spending enough time with their children.

Alkire (Alkire, 2005) asserts that the choice of relevant functionings and capabilities for any quality of life measure is a value judgment rather than a technical exercise. Robeyns also allows that a criterion for selection of capabilities is that they must be relevant to a given policy, project or institution (Robeyns, 2003). The catholicity of the Capability Approach which Sen has himself steadfastly stood by, allows one to structure the methodology to best suit the objective of the study. Against this background, certain value judgments were applied in the selection of functionings.

IV. Decision of prioritizing and according weights

As has been argued by many scholars, capabilities are not commensurable and cannot be traded off against each other (Ibrahim, 2014). In other words, all capabilities have their own importance in an individual's life. As this study did not ask the respondent to rank the functionings that she was able to/not able to achieve, any weightage accorded to the corresponding capability would be an unverifiable value judgement. Hence

all capabilities have been treated as having equal weightage in the GOC applied to the current context of working mothers. As Sen observes (1992,p. 46): “The capability approach can often yield definite answers even when there is no complete agreement on the relative weights to be attached to different functionings.’

V. Selection of Images and Preparation of Cards

For each functioning, illustrative images were prepared as follows:

1. Images which clearly convey the intention of the cards were selected from the internet.
2. Each image was pasted on cardboard and cut into squares such that they resembled picture cards in board games.
3. Each of these cards was coded. For the cards representing “Doings”, the coding sequence was D1, D2, D3 ...etc. while for the cards representing “Beings”, they were coded as B1, B2, B3...etc. The codes were written behind each card.
4. The picture cards were then tested with four women respondents in Grenoble. The feedback from them enabled some pictures to be eliminated or replaced and others to be added. The final pictures used in the study is given in Annexure 4 for Indian cities and Annexure 5 for Grenoble.

VI. Adaptation of the images for Multi-Cultural research

Given the socio-cultural differences between and within the geographies selected, the images used were adapted for each city to make them as relatable for the respondent as possible, as explained in Annexure 3.

VII. Methodology of using the Cards

This section outlines the steps involved in the application of the Game of Cards technique within the context of the personal interview. The GOC was the last section of the questionnaire used in the study (refer Questionnaire in Chapter on Methodology of the Study). Respondents were told that this was the last set of questions which would be in the form of a small game. In this game, they would have to pick picture cards in response to the questions posed.

STEP 1- Achieved “Doings”

All the cards depicting the functioning of “Doings” were laid out before the respondent who was asked to choose the pictures corresponding to the activities she performed in her daily life.

STEP 2- Potential “Doings”

Once the respondent had picked her present functionings, she was asked to look at the remaining cards again and pick those that depicted the activity she would like to do, but was unable to, at the present juncture of her life.

STEP 3- Constraints

In this step, the following questions were asked to elicit details about the constraints limiting her achievement of functionings.

- a. “Why do you think you are unable to do these activities currently?”
- b. “What do you think should change to enable you to do these activities?”

The three steps described above were then repeated, this time replacing the “Doings” with “Beings” and showing the corresponding cards.

i. All the cards were laid out and the respondent could select any number of cards which reflected her status. This method was deliberately chosen over presenting the cards one by one as in the latter method; a respondent could make a choice and then discover that there was another picture later which better represented her functioning. To avoid that, all the pictures for “Doings” were shown together followed by all the pictures for “Beings”.

ii. In both “Doings” and “Beings”, the themes under which the images are categorized were unknown to the respondent. The cards are spread out altogether without qualifying them as “Leisure” or “Health and Fitness”.

iii. When the respondent picked the cards, the codes were noted down on the questionnaire simultaneously, as the respondent was speaking. If there were several “Doings” picked, a few moments were taken after the cards were selected, to turn each card over and note down the codes.

iv. As the cards for “Doings” were literal representations of activities they did not typically need to be explained. On the other hand, the cards for “Beings” need to be supplemented with explanations as to what the pictures intended to convey. For example, the picture of a woman with currency notes as denoting “being financially independent.” Or the picture of two Indian women (Figure 1)- one younger and the other older- cooking together in the kitchen, as “being a good daughter in law”, a role which is deeply ingrained in the cultural mindset of South Asian women.



Figure 1: Picture of Being a good daughter in law

VIII. Analysis of the GOC data

Annexure 1 gives the steps that were followed after the collection of each respondent's data in order to process the information about beings and doings. It also briefly dwells on the possibility of using the Game of Cards for quantitative surveys.

SECTION D: Analysis Framework and Data sources

I. Analysis Framework

'Triangulation' – confirming findings through three methods/sources is a standard practice in qualitative research to build trustworthiness of the findings (Miles et al, 2014). **The use of a) secondary research data, b) mobility data of respondents and c) the data on functionings and capabilities through the Game of Cards provides three different sources to corroborate the conclusions of the study.** The diagram below in Figure 2 shows the sources of data on the basis of which each research question is answered.

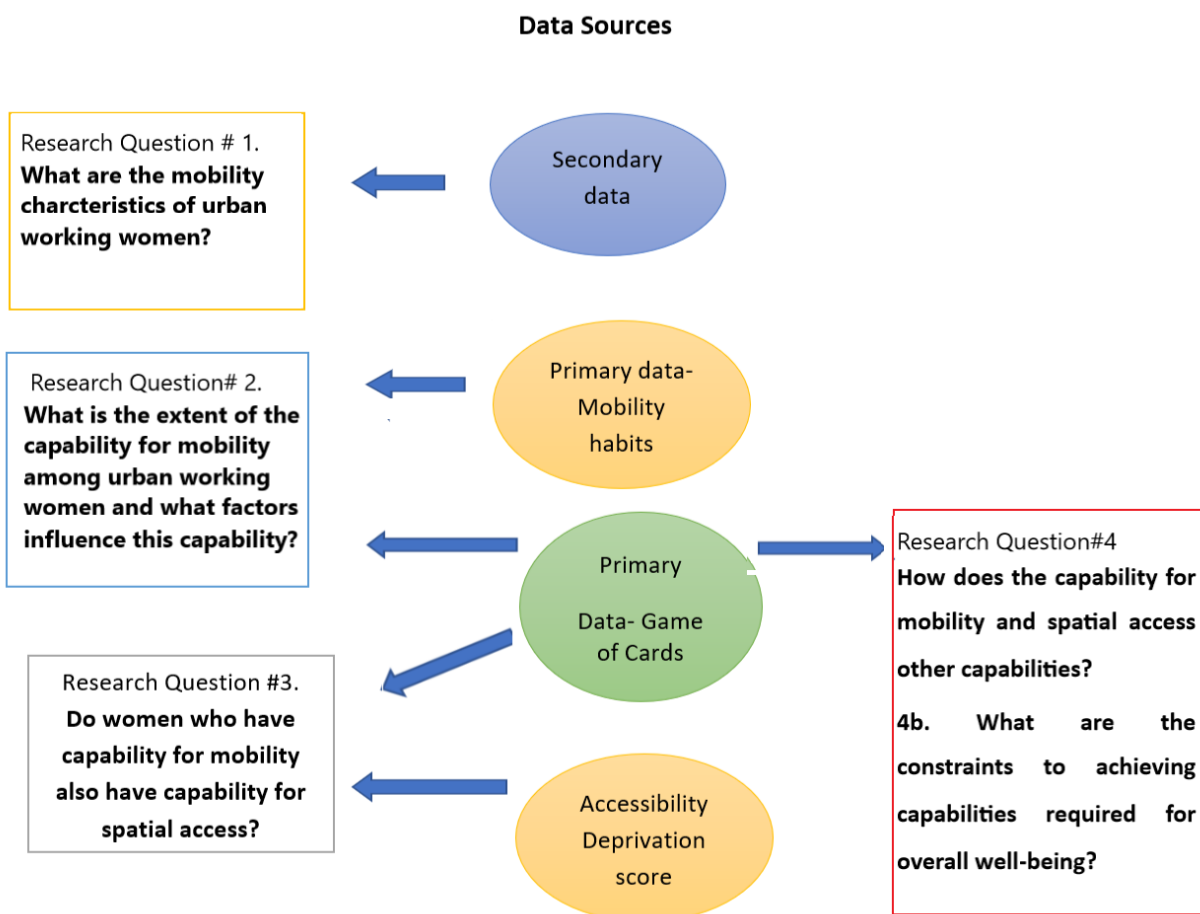


Figure 2: Data sources for each research question

II. Data Sources

Research Question 1: What are the mobility characteristics of urban working women?

This question is answered on the basis of secondary sources of data first for India and France overall and also for each city-Jalandhar, Trichy, Grenoble- in the respective chapter on the city.

Sources of data: Secondary research

1. Census of India

Reliable, large scale data on commuting obtained through a countrywide survey is now available from the Indian Census of 2011 which was made publicly available at the end of 2015. For the first time since it began in 1853, the latest round of the census revealed how urban India goes to work. Distance traveled on the journey to work and modes used by men and women respectively are the two dimensions in which the census data is available. The fact that the data is gender disaggregated is extremely significant as this is perhaps the first time that there is an opportunity to focus on gender variations across the country, not only at the level of states but also at the level of districts. Apart from mobility data, the decennial census is the main source of information on types of employment that women have and social indicators like marital status, number of children, number of people in the household, asset ownership of households, etc.

2. INSEE.

The French National Institute of Statistics and Economic Studies provides data of the periodic national census in France as well as of other surveys conducted from time to time. It is a repository of socio-demographic data, data on mobility, labour market, urban development and sustainable development, to name a few. These are available at all levels of administrative units- commune, metropole, department and region.

3. French Household Travel Survey (Enquête Ménages Déplacement-EMD)

The Enquête Ménages Déplacement (EMD) is the French National Household Survey, last conducted in 2010, under which nearly 50% of the population of the agglomeration were interviewed about their daily mobility habits. It is hence a rich source of information about the overall mobility picture of urban women in the area under study. In India, there is no mobility survey conducted by the government which can collect sex disaggregated data, though some small studies conducted provide information about women's mobility in particular cities.

4. Previous studies on women's mobilities .

The last source of information to answer this question is the previous studies done on women's mobilities.

Research Question 2: What is the extent of the capability for mobility among urban women and what factors influence this capability?

Source of data: Primary research

1. Objective Data

Mobility data of the respondents from Schema Déplacement (Daily trip report) of Sections II of the questionnaire. (See Table 2) in section B. This data collected for the last working day of the respondent represents a 'typical' working day in the respondent's life. (Also see Section 2 of the questionnaire in Annexure 7).

2. Objective +Subjective Data

Usage experience of the mode of transport used (See Table 2). (Also Section 3 of the questionnaire). Those using public transport were asked to rate their journey on the dimensions of comfort, safety, cleanliness inside the vehicle and connectivity of the network. While these were the original parameters in the questionnaire, respondents in some cases also spoke of other aspects such as uncertain timings of buses/trains and the duration of the entire trip, which have been taken into account as well. For those using other modes of transport -private, informal or non-motorized – the experience of the journey was an open ended question. Respondents elaborated upon aspects like parking difficulty, parking fees, traffic, sense of safety on the road, discomfort of driving for long, threat of bicycle thefts etc.

3. Subjective Data

Expressed desire for the functioning of mobility. While "travel" is only the revealed behavior, the concept of mobility entails a 'potential' thus possessing an inherent knowledge of the potential trips that are/were not made due to various constraining factor(s) (social, cultural, technological, infrastructural, political and financial) (Uteng, 2012). Information about whether mobility is desired as a potential functioning is obtained from the cards chosen in Game of Cards (Section 4 of the questionnaire). The Game of Cards technique is explained as part of Research Question # 4 a few pages ahead.

The capability being evaluated here is the capability for independent travel using private or public transport. Mobility through walking exists for all, as all respondents had the physical ability to walk. Also, being a passenger in a vehicle driven by someone else-typically their husbands, was not taken as an indication of the capability for mobility as the sole dependence on their husband's vehicle shows a constraint, rather

than a freedom to independently go where they want to. **Thus, to be considered “mobile”, in this analysis, respondents had to fulfill two criteria:**

- i. Having the ability to travel alone
- ii. Having the ability to travel using a mode of transport other than walking and/or being a passenger in a vehicle driven by another family member.

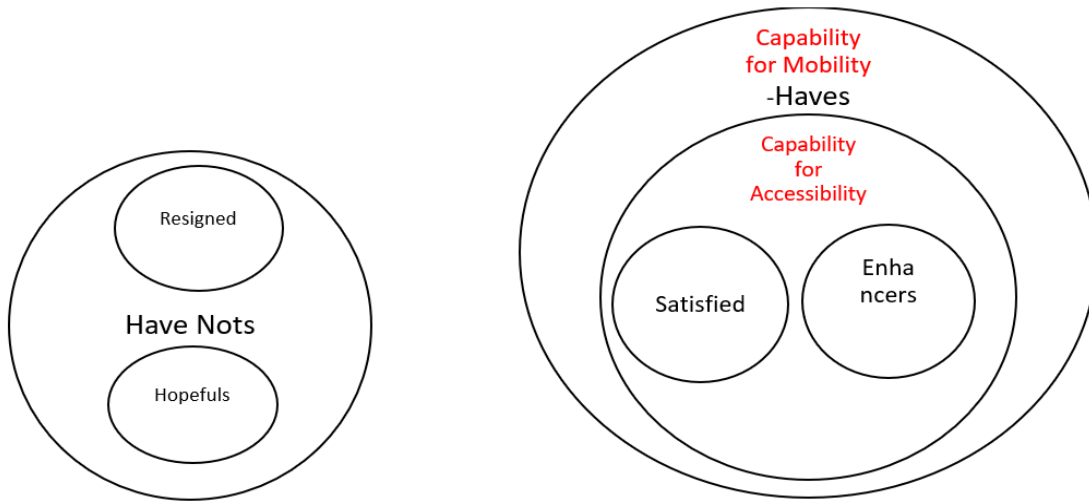
Based on the above criteria, respondents were classified into The ‘Mobility Haves’ and ‘the Mobility Have Nots’. ‘The Haves’ are all those who fulfill the above two criteria and hence possess the capability for mobility. ‘The Have Nots’ are those who lack the capability for mobility- except for walking and/or depending on someone else at home, they do not have mobility. To reiterate, what we are evaluating here is the capability of mobility through the revealed behavior of the functioning of mobility. Hence the notion of choice is critical in this classification. Those who are compelled to adopt a mode of transport because they have no real choice are considered ‘Have Nots’. Conversely, those who choose to walk even if they have a car, due to being environmentally conscious, for example, are not considered ‘Have Nots’ as they have the freedom to exercise choice in the matter of transport. Among the Have Nots, however, some are ‘Resigned’ to not having any mobility improvement and consequent opportunities while others are still ‘Hopeful’ of independent mobility.

Research Question 3: Do women who have the capability for mobility also have the capability for spatial access?

This question is answered on the basis of primary sources of data for each city, by computing an Accessibility Deprivation Score as explained below. The purpose is to identify the most ‘accessibility deprived’ among the sample and why they are so.

As was evident in the mobility behavior of women in this study, the Capability for Spatial Access is contained within the Capability for Mobility. Only those who are mobile can access places. Thus, we argue that the Capability for Spatial Access is subsumed within the Capability for Mobility.

Figure 3:



Diagrammatic representation of the inter relationships of the Capability for Mobility and Capability for Spatial Access and the sub groups in Jalandhar.

Only the “Mobility Haves” possess any degree of capability for spatial access. Within the “Haves” there are those who are ‘Satisfied’ and are not seeking any improvement in their mobility/accessibility. Others have a high degree of mobility but their spatial access to places, especially their jobs, is in many cases poor. Through the Game of Cards, these women expressed a desire for a better mode of transport that will improve their accessibility. They have been termed ‘Accessibility Enhancers’ i.e., those seeking - faster and improved reachability and/or more comfortable travel. These typologies have been depicted in the Venn Diagram in Figure 3.

The level of spatial accessibility even among the Accessibility Enhancers is not equitable. As has been discussed in the Literature Review (Section 2 on Mobility and Accessibility), measuring accessibility is not straightforward as there is a subjective element involved relating to the convenience of the journey which in turn depends on duration, number of interchanges and sense of comfort inside the vehicle. **In order to capture this multi-dimensional nature of accessibility to be able to create a gradation of the most “accessibility deprived” we use a method called the Alkire-Foster counting methodology, explained below.**

1. Computing an Accessibility Deprivation score

To find out the extent of accessibility deprivation of respondents in each city, we adapt the Alkire-Foster counting methodology as described in the book “Multidimensional Poverty Analysis and Measurement” (Alkire et al, 2015). Counting the number of observable deprivations in core indicators has an intuitive

appeal and simplicity that has attracted not only academics but also policymakers and practitioners. Over time, counting methods have been implemented in a variety of useful formats in terms of poverty measurement—namely, the European Measures of Relative Deprivation, the Consensual Approach to Poverty Measurement, the Consistent Poverty Approach, the Latin American Basic Needs Approach. (Alkire et al, 2015). The steps involved in the methodology are given below. The adaptation of the methodology for the purpose of this study is explained under each heading.

1. **Defining the set of indicators** which are to be considered in the multidimensional measure. Data for all indicators were available for each person. The indicators considered are as follows:

- a) Time taken on the journey to work (both ways)
- b) Number of trips comprising the journey
- c) Distance to transit stop (for autos and buses)
- d) Dissatisfaction expressed with respect to comfort/duration of travel/timing uncertainty/cleanliness/safety. (Section III of the questionnaire.)

2. **Defining a threshold of satisfaction (deprivation cutoff)**

The next step is that for each indicator we define a deprivation cutoff i.e. the achievement levels for a given dimension below which a person is considered to be deprived.

For indicators 1 and 2, we calculate the average of “Time taken on Journey to Work”. This average serves as the “deprivation cut off”. An above average score is taken as deprivation, a below average score indicates “not being deprived”.

For indicator 3, the deprivation cut off is a distance of 500 metres. (As per the UN sustainable Transport, transit stops should be 500 metres or 5 minutes walking distance from a reference point.). If the respondent has to reach a transit stop > 500 metres , she is considered deprived n that dimension. If there is no transit stop involved in the journey, the status is “not deprived”

For indicator 4, if dissatisfaction is expressed for any aspect of travel listed in point 4 above, the respondent is considered deprived on that aspect. For each deprivation, a score of 0.5 is given. Hence, the maximum score possible for 5 aspects of assessment of the travel is 2.5. For example, if a respondent is dissatisfied with respect to comfort and safety, she is allotted a score of $0.5+0.5=1$. This includes women travelling on any mode of transport. Those who did not express any dissatisfaction about their journey on these aspects are considered “not deprived”

3. **Creating binary status:** Depending on the above criteria, we assign a binary status - where 1 is deprived and 0 is non-deprived

4. **Accessibility Deprivation score:** Counting the number of 1s we arrive at an accessibility deprivation for each respondent.

5. Accessibility Deprivation cut off: We arrive at this cut off by taking the average number of accessibility deprivations in the sample. This threshold thus identifies the multidimensionally “access-poor”. It reflects the proportion of weighted dimensions a person must be deprived in to be considered “access-poor”. Because having more deprivations (a higher deprivation score) signifies worse poverty of spatial access, those whose scores equal or exceed this cut off are considered deprived of the “Capability for Spatial Accessibility.”

For application of the above method, see Research Question 3 in each city’s case study in Part II.

Research Question 4a. How does the capability for mobility and spatial access other capabilities?

4b. What are the constraints to achieving the capabilities required for overall well-being?

Source: Game of Cards.

Information obtained to answer Research Question 4a and 4b was based on two questions within the application of the GOC technique (See Annexure 7a and b -Questionnaire).

1. i. Which of these cards show activities that you would like to perform but are unable to presently?-DOINGS
ii. Which of these cards shows who you would like to be but are unable to be at present?-BEINGS
2. i. What is the reason for you not being able to perform these activities?-DOINGS
ii. What is the reason for you not being able to be this person at present? -BEINGS

For each city, responses were aggregated and cross-tabulated against the constraints as in the format shown in Table 4.

TABLE 4 : Potential functionings desired and constraints to achieving them.

Functionings desired but not achieved	Constraints	Mobility	Domestic Work and Child Care	Paid Work and Financial Independence	Leisure and Social Networks, Religion	Health , Physical Fitness	Nurturing Relationships	Self-Improvement	Long term financial security	<i>Row Total</i>	<i>Number of times constraint was mentioned (%)</i>
Constraint 1											
Constraint 2											
Constraint 3											
<i>Column Total</i>											

III. Conclusion

As per the Analysis Framework described in this chapter, responses of urban working mothers in the three cities selected for primary research-Jalandhar and Trichy in India and Grenoble in France -have been analyzed. These are presented as the four research questions in Part 2, chapters 5, 6 and 7 respectively. Before moving to Part 2, however, the next chapter, Chapter 4, prepares the ground by presenting the profile of working women and their mobility behavior for India and France as a whole, using secondary data.

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CHAPTER 3. URBAN WORKING WOMEN AND THEIR MOBILITY IN INDIA AND FRANCE

This chapter provides an overview of working women and their mobility in India and France based on the Indian census, French mobility surveys and previous studies on the subject. It is divided into three parts Section A gives a profile of working women in India followed by a discussion on their journey to work based on the census data. Section B does the same for France, using secondary sources to discuss the mobility patterns of French working women. At the end of each country specific section is a short discussion.

SECTION A: India

I. Brief profile of Working Women

In the past decade, India has seen a steady decline in Female Labor Force Participation (FLFP) from 37% in 2004 to an all-time low of 27 percent in 2014, according to the International Labour Organization's Global Employment Trends 2013 report which places India 120th in a list of 131 countries surveyed in terms of women's labor force participation. Further, it is observed that this statistic tends to worsen as one moves from rural to urban settings, despite the higher number of industries and more job opportunities present in cities. As per the government's Employment Survey, 68.3 percent of women holding a graduate degree (or above) in cities are not a part of the workforce. A World Bank report assessing this phenomenon (Andres et al, 2014) found that stability in family income, as indicated by the increasing share of regular wage earners and declining share of casual labor in the composition of family labor supply, has led female family members to choose to drop out of, rather than join the labor force. This decline was true for all educational levels- from illiterates to college graduates, during 1993-94 to 2011-12, for both rural and urban areas. Female employment and wage earnings also vary dramatically across states according to the Indian Human Development Survey (Desai et al, 2010). The country's National Statistical Survey organization (NSSO, 2011), which is an important public source of empirical data in the country, estimates urban female labour force participation to be 20.4% having dropped from 24.4% in 2004-05. Some authors (Hirway, 2011; Sudarshan and Bhattacharya, 2009) expressed doubts on the credibility of NSSO data, suggesting that the survey underestimates women's actual work participation, by excluding domestic duties and other activities like collection of firewood or sewing as economic activities. The Census estimates FLFP in urban India to be a mere 14.7%.fallen from 16.6% in 2004-05.

Informal employment is a typical feature of India's labour market, particularly for women. Employment trends show that India's urban workforce is becoming increasingly informal. By 2011-12, 42% of the urban

workforce was self-employed, while wage employment had become more informal. These estimates indicate that urban workforce in India is comprised of a small formal salaried workforce (18.4%), almost all of them working in formal offices and factories, a larger informal wage workforce (39%) and a still large informal self-employed workforce (42%), a little more than half of whom work at home or in open public spaces. (Chen and Raveendran, 2014)

While exact estimates can be debated upon, it is still unarguable that India's female workforce participation can be improved and that women face high entry barriers into the workforce. A Harvard report shows that there is significant demand for jobs by women currently not in the labor force, but willing female non-workers have difficulty matching to jobs (Fletcher et al, 2017). Evidently, there are barriers that urban women who are aspiring to work face, which they are unable to overcome, some of which are listed below:

1. Occupational Segregation

Occupational segregation forms a major barrier for women to be employed in various sectors (including sectors of their choice). Women are mostly observed to be employed in large numbers in sectors such as tobacco processing (58.8 percent), apparel manufacturing (50.4 percent), food processing (31.4 percent) and so on (Chaudhuri and Panigrahi, 2013). Women are observed to be concentrated in the informal sector in urban areas- as street vendors, construction workers, domestic maids, cleaners in offices and schools, etc. drawing a relatively low income and working without benefits such as health insurance, maternity leave, etc.

2. Gender pay gap

The average daily wage paid to male workers in India is INR 303. On the other hand, the average daily wage paid to female workers is INR 147.9 (Chaudhuri and Panigrahi, 2013). Indian labour laws assure equal pay for equal work to men and women. In practice, this is not always followed. The wage differential also hints towards the fact that within sectors, women tend to work in relatively lower paying job profiles.

3. Safety and Security

The UNDP's survey of women's attitude to work and education in four big Indian cities (UNDP, 2015), reported safety & security concerns to be a significant barrier to realizing workforce participation aspirations. While most of the women said that the concern was more to do with commuting to and from the workplace; many others said that their concerns were related to safety & security at the workplace. Work arrangements (especially in terms of working hours) in the industry were another barrier as girls, especially from slum areas are wary of returning after sunset. Smaller industries or industries where labor force is engaged under contractual or daily wage arrangements typically do not have sexual harassment policies, transportation facilities, extended maternity leave, daycare centre etc. making it more difficult for women to work and simultaneously manage home. A new study (Borker, 2018) has found that women in Delhi

University chose lower-ranked colleges if it made their commute shorter and safer. Providing accessibility - in terms of safe and convenient travel to the workplace is hence essential if more Indian women are to come out of their homes to participate in the labour market.

4. Social and Family Support

The Indian constitution treats every citizen equally and gives the same rights and protection to men and women. Socio-cultural realities are, however, at odds with the freedom guaranteed by the Constitution, as Indian society is patriarchal, bound by traditions that have become entrenched as social norms. Despite being one of the few countries in the world to have had women heads of state-both Prime Minister and President- and giving equal voting rights to both sexes from the first day of Independence in 1947, women are bound by societal stereotypes of what their roles should be.

Although the World Bank report (Andre et al, 2014) using quantitative modelling found that being married or having children did not affect women's workforce participation rate, other studies (UNDP, 2015) show that work is possible only if the married woman's family is supportive. In the UNDP survey conducted in four big Indian cities among women aspiring to work, nearly 50 percent of women and girls across Bangalore, Hyderabad & the National Capital Region reported that their aspirations to participate in the workforce are constrained by their engagement in domestic chores and responsibilities. They are ready to dilute their workforce participation aspirations in order to be in line with social norms and expectations of a woman's role in managing the household. Traditional families support women and girls' workforce aspirations, only as long as it does not come in the way of them delivering against their domestic responsibilities. Family elders also have a say in the assessment of the safety and security aspects-whether it involves a long commute and if the workplace is 'decent'. It is not uncommon to see young girls accompanied by fathers/ brothers/husbands for job interviews, so that they can assess the office atmosphere and decide if it is suitable.

Given all these barriers which Indian women face to even enter the workforce, the respondents in this study who are working mothers, i.e. they have continued in paid employment even after childbirth means that they have already overcome several structural and institutional barriers to enjoy the capability for paid work. Hence these women, by being who they are, have already demonstrated agency or the ability to think for themselves and act in ways that shape their experiences and life trajectories. Even the poorest women in the sample who were illiterate single mothers or single wage earners had found sustained livelihood and was able to negotiate social forces and structures on a daily basis to support their families. It is in this context that the Indian respondents of the study must be viewed- as women who had wrested the freedom to be able to earn their own living, which many of their sisters had yet been unable to.

II. Mobility of urban working women

Reliable, large scale data on commuting obtained through a countrywide survey is now available from the Indian Census of 2011 which was made publicly available at the end of 2015. For the first time since it began in 1853, the latest round of the census revealed how urban India goes to work. Distance traveled on the journey to work (one way, assuming a linear trajectory) and modes used by men and women respectively are the two dimensions in which the census data is available. The fact that the data is gender disaggregated is extremely significant as this is perhaps the first time that there is an opportunity to focus on gender variations across the country, not only at the level of states but at the level of the next administrative unit, which is districts². Though this is a good beginning, the scope of the data on the journey to work is restricted in scope. These limitations are given in Annexure 6.

1. Trip Length in the journey to work -All India (urban)

The Census **categories of trip length are 0-1 kilometres, 2-5 kms, 6-10 kms, 11-20 kms, 21-30 kms, 31-50 kms, above 50 kms and a category of “no travel” which represents those who do not undertake any travel to their workplace.** For simplification, in this analysis, the categories beyond 20 kms have been grouped together as one.

Figure 1 shows trip length data of urban Indian working population split by gender. While the bar graph shows the trends inclusive of the “No travel” component, the line graph represents trip lengths for each sex when we exclude the “No travel” component and consider only those who undertake a commute. Overall in urban India, a quarter of the urban working population does not travel at all for work. A huge 70% of the working population in urban contexts does not travel more than 5 kilometres. When split by gender, nearly one-fifth of male workers and more than one-third of women workers do not travel to work, attesting to the fact that working from home remains a largely female dominated sphere. Indeed, working from home could be due to restricted access to diverse employment opportunities for women (Chattopadhyay and Chattopadhyay, 2017). The “no travel” component when examined more closely, is likely to point to occupational segregation that may prevent men from pursuing work-from-home jobs because of being trapped in gender roles of the man “going out into the world to earn a living”. Conversely for women, apart from allowing them to manage their families more easily, work-from home jobs are typically those which are deemed more “feminine” enabling women to easily adopt them- for example, giving tuitions to students after school, music classes or running a beauty salon, a tailoring shop or home based catering services.

Studies conducted in the west have concluded that women try to find jobs close to home. This is validated in the case of India too as women dominate in the “no travel” and “very short distance” (0 to 1 kms)

² India is administratively divided into 29 states and 7 union territories. These are further subdivided into 604 districts. The district headquarters is the typically the largest, most populated and urbanized city in the district.

category. However, what is noteworthy is that in the case of very long distances i.e. over 20 kilometres, there is no significant difference between male and female commuters, with the respective figures being 11% and 9%. If we exclude “No Travel”, (line graph) the majority of both men and women commuters travel 2 - 5 kms one way to reach their workplaces.

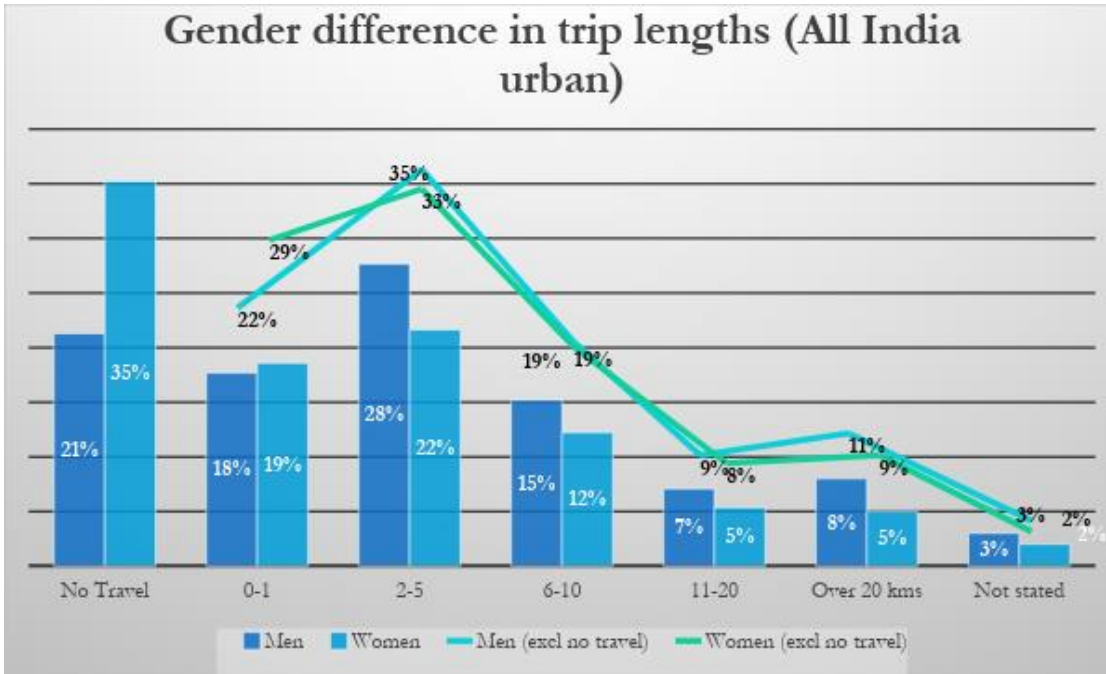


Figure 1: Gender difference in trip lengths in urban India. Source: Author. Data from Indian Census 2011. Table B-28.

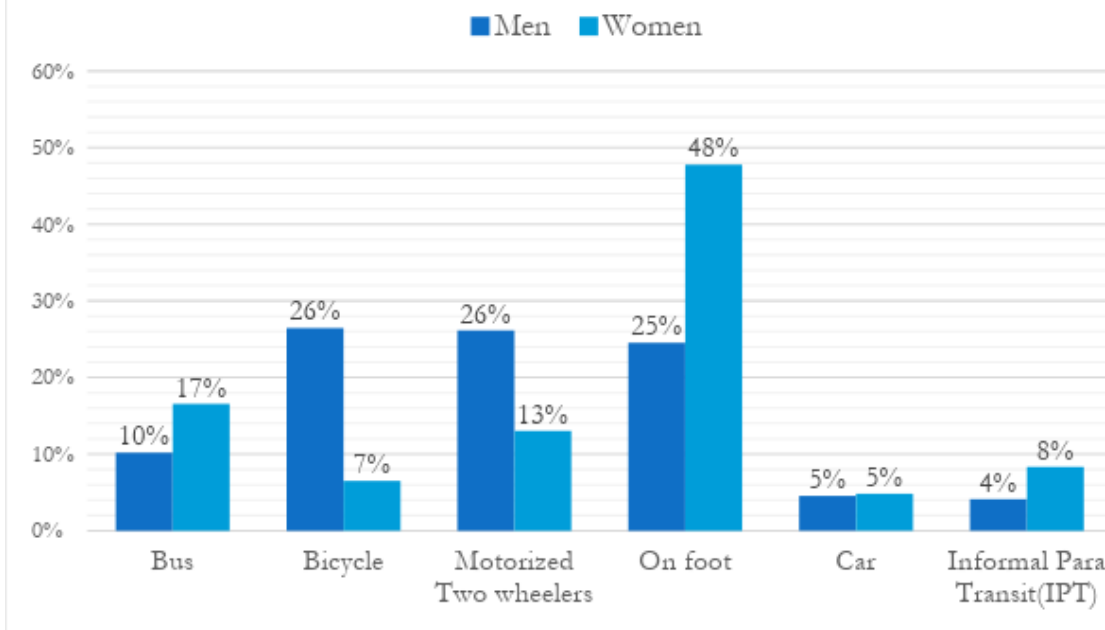
Until now only one study (Singh, 2017) has done a gender differentiated analysis of the mobility data from the census for urban India. According to this study, women don't consistently have shorter trips; in districts with low population density, the gender differential in trip lengths is lesser i.e. both men and women travel longer to workplaces in low density districts. This point is also evident from the graph in Figure 2 where the gender differential becomes lesser as commute distances increase. In settings where employment is scarce or spatially dispersed, women travel almost as much as men in pursuit of work.

2. Mode of Transport in the Journey to Work -All India (urban)

The Census information about the mode of transport used in the journey to work is also peculiar in many respects, as explained in Annexure 6. Within these limitations, we can still get an overview of how urban India travels to work. The graph in Figure 2 shows the wide gender disparities in modal shares across urban India. There is a 23% difference in the number of women and men who walk to work, a 13% difference in the use of two wheelers, both to the disadvantage of women.

Gender variations in transport modes used in the journey to work by urban Indians

Figure 2: Gender variations in transport modes used in the journey to work in urban India. Source: Author using Census data on “Other Workers journey to work” Table B. Census of India 2011.



Non-motorized modes

Half of India’s urban working population uses non-motorized transport on the journey to work, with walking being dominant among women and cycling among men. In a mid-size city Rajkot, in the western state of Gujarat, a study found that as income increases both men and women tend to shift away from modes such as walking and cycling towards private motorized vehicles- two wheelers or cars. (Mahadevia, 2015). However, more men shift to private motorized vehicles than women. For women, walking continued to be the dominant choice.

For Indian women, for whom there is an added dimension of sexual harassment in public spaces (Jagori and UN Women, 2011), walking also puts them in vulnerable positions. In most Indian roads, pedestrians have to rely on lights coming from shops in the vicinity, without which the sidewalks remain dark and lonely, increasing the threat perception of being attacked. Despite all these handicaps, half of India’s urban working women walk to work, which is a comment on the disconnect between women’s mobility patterns and the priorities of local governments and transport organizations.

When it comes to bicycling, however, as seen only 7% of women in these districts cycle to work while 26% of men on an average use the bicycle to work. Women’s low share in cycling is because, in most developing countries, when a household acquires a private means of transport, it is appropriated by the man of the house. Cars, bicycles, motorbikes and animal carts are seen as assets of the household over which men, as

the most powerful members of the household, would have primary claim. Thus, in a lower income household, when a cycle is purchased, the husband would use it for going to work while the woman will continue to walk to work. (Peters, 2013). The common attire for women in India, which is the *saree*, makes cycling both inconvenient and unsafe. Other socio-cultural reasons like being seen as “too modern” can also be barriers. Further, as women value safety in travel, the lack of cycle paths and a safe cycling environment deters more women from cycling. (Shah et al, 2017).

Private transport

Among the modes used in the journey to work, the private car is the only mode in which there is no gender difference in usage- it has 5% modal share for both men and women. It has been found that (Kumar and Krishna Rao, 2006) and (Verma, 2015) interest in owning a car among urban Indians was for recreational and shopping trips rather than for work commutes. Only in higher income households do people use the car to get to work. The 5% of women who drive to work would belong to higher income, educated, urban households where the woman is also independently employed and has her own car.

Unlike in the west, automobile possession in India, however, is still in its growth phase. Per capita ownership of private motorized vehicles is still very low compared with other emerging economies and well below ownership levels of developed countries. Among every 1000 people in the population in India, less than 100 possess a private automobile (car/ two wheeler), with two wheelers dominating the mix. In comparison, in the European Union, for every 1000 people, more than 500 possess a private automobile (IEA, 2015: 26) and these are mostly cars. India now has just 2 percent of the world’s motorized vehicles but suffers 11 percent of global traffic fatalities. (WRI Ross centre, 2017). Vehicular speeds in Indian cities have increased in the past decade with the construction of multiple overpasses and several major roadways that eliminated the need for traffic lights for several kilometres. These changes saw a parallel increase in motor-borne crimes from snatching, road rage, and assault on women in moving vehicles.

Public Transport

Women’s use of buses, however, is significantly higher than men, consistent with all studies on modal choice worldwide, mentioned in the literature review. In the journey to work from home, 17% of urban India’s women use the bus as compared to 10% of men. In many contexts, including India, mass transit is more unreliable, more inconvenient and more inflexible than private vehicles and hence its quality affects women more than men.

In India, mass transit has come to symbolize inconvenient travel and pushed people to opt for at least a two wheeler. With more private vehicles on the road, buses on Indian city roads are forced to crawl behind autorickshaws, cycles or any other slow vehicles due to the absence of an adequate right of way. This affects the economic performance of intra-city bus transport and its efficiency. Commuters gradually lose confidence in the public transport system and choose alternative services like autos, two wheeler etc.

resulting in even more congestion. This was the major reason for sudden buoyant demand for two wheelers among the middle class during the last few decades. (NATPAC, 2011).

Although public buses, owned by the respective State Transport Organisation, of each state, transported more than 25 billion passengers in 2010-11 (Singh, 2014), public bus companies in India have been plagued by severe financial constraints and are hard pressed to even meet their fleet replenishment needs. Private buses have expanded the service offer manifold but are notorious for not following regulations (for e.g.: rash driving, overcharging, not stopping at correct bus stops, conductors being rude to passengers etc.) Such complaints abound on consumer complaint forums online. The poor quality of buses, the uncertainty of schedules and lack of security in transit affects women disproportionately, given their higher dependence and usage of public transport. Despite the fact that buses account for more than 60% of all passenger trips conducted by mechanical modes, they receive no preferential treatment in terms of road design or traffic management. (Tiwari 2002).

Informal paratransit (autos, rickshaws etc.)

Informal paratransit or Informal public transport (IPT's) refer to modes of transport which fill the gap between private transport and formal public transport in a city. IPT's could be flexible services operation on demand, where a passenger fixes the destination (motorized three wheelers, non-motorized cycle rickshaws, taxis). Or they can be services like share-a-cab, shared autos and mini buses or tempos. The Census does not give a breakup of the different kinds of vehicles clubbed together as IPT, so we cannot estimate which mode is used more. However, taxis followed by autos are higher priced options while the cycle rickshaw and tempo are lower end alternatives. The tempo, which resembles a small, open roofed truck, is almost always used by lower income populations as it is a vehicle of shared transport mostly from the urban to semi urban areas. In terms of pricing, it would be the same as a shared auto which costs Rs.10 a ride. As is the pattern in most other countries of the world, in India too more women than men use the bus service as well as the IPT service. Informal paratransit is a boon for women's mobility in Indian cities because of the flexibility and easy availability it offers.

The auto rickshaw readily fills in the gap between demand and supply of urban transport. In Tier II cities with a population between 1-4 million, (like Trichy and Jalandhar) the number of auto rickshaws would be 15,000 to 30,000 - (Mani et al, 2012). People use auto-rickshaws for a variety of purposes, including education, shopping, health care, recreational trips, and commuting to work. In Tier II cities the modal share of auto rickshaws is 10-20% (iTrans, 2009).

When we compare male and female IPT usage in 40 Indian districts with a population of 1 to 1.5 million, including Jalandhar and Trichy, we see that on an average, across districts, the number of women commuting by autos/rickshaws, etc. is twice that of men (Figure 2) This clearly shows, that auto rickshaws indeed enhance the urban Indian woman’s capability for mobility.

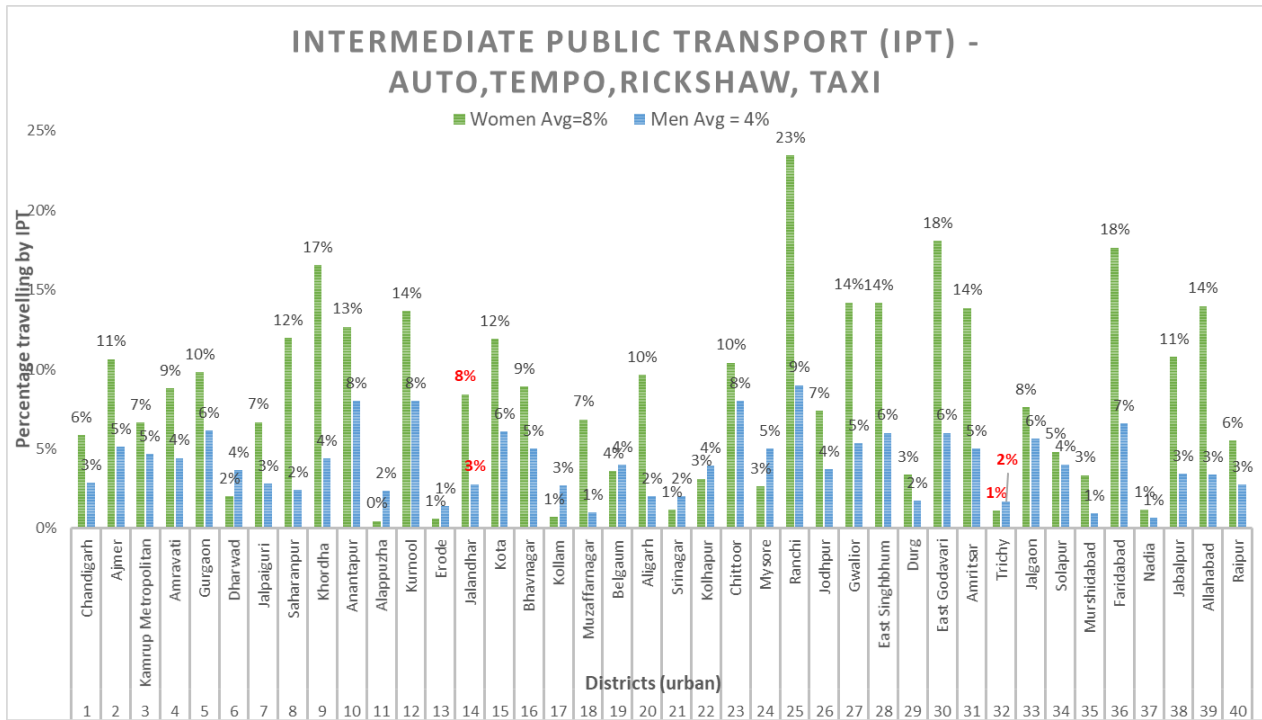


Figure 3: Gender split in the journey to work for men and women by IPT. Source: Office of the Registrar General & Census Commissioner, India - Census 2011.

One of the principal services that the auto performs is that it serves as the vehicle for “last¹ mile connectivity” i.e. from the metro station or bus stop to the home. Last mile connectivity is a huge challenge to overcome to increase usage of public transport. This is particularly so for women who come in the late evenings from work and may feel vulnerable if the environment around the transit stop is not secure. This could be because of the presence of incompatible activities like for example a liquor shop or it could be a lonely stretch of road that has to be traversed. The auto rickshaw is a useful intermediate vehicle for women especially for last mile rides.

Ride Hailing Services

Although not yet captured by the census, another extremely popular form of mobility in urban India are the ride hailing services exemplified by Uber and an Indian ride sharing company Ola. According to a report by the International Finance Corporation that analyses data from Uber, Indian women use the Uber app more frequently compared with their peers in Egypt, Indonesia, Mexico, South Africa and UK. They value the service for improved access, convenience, and independence. They view cost transparency, rather than the overall fare, as the key benefit of ride-hailing, but affordability is a concern and low-cost options such as UberGO and UberPOOL are particularly popular.(IFC, 2018).

Pink Transport

Surveys and safety audits done in India show that for women passengers, both waiting for and using public transport is fraught with the apprehension and actual experience of sexual harassment. A survey conducted in Delhi by the women's rights NGO, Jagori along with UN Women found that public transport, buses and roadsides are reported as spaces where women and girls face high levels of sexual harassment. While women of all classes have to contend with harassment, women workers in the unorganized sectors are particularly vulnerable (Jagori and UN Women, 2011). A study done in Chennai found that 66% of surveyed respondents had been sexually harassed while commuting (Sarkar and Partheeban 2011). However, a more recent study of 494 women bus users in Bangalore (Verma et al, 2017) showed that class and age mattered to how safe women felt in transit. Women who were highly qualified felt safer at the bus stop and during the ride than those who were not very educated. This was possibly because of the latter being more confident about knowing what to do in case of a crisis.

Women who were older and employed felt safer while travelling by bus compared to younger women.

The most shocking incident of women's lack of safety which shook the nation was the rape of a young woman travelling in a public bus in Delhi on December 16th 2012 leading to her eventual death. The incident was a milestone which propelled feminist arguments about

Figure 4(top): Woman driver of She-Taxi, Kerala.

Source: www.ourownstartup.com/shifts/jobs

Figure 5 (bottom): Pink auto introduced in a town in the north-eastern state of Assam. **Source:**

<http://www.pratidintime.com>



women's right to the city to a different decibel level in the media and public. Public policy and debate about women's safety while using public spaces, including transport have since been formed/alterd against this background.

After the December 2012 incident, several corporate enterprises especially companies which have (call centres, hospitality, airlines), quickly ramped up their safety measures like run late night cabs at scheduled

times, checking that every vehicle has a security guard in it who accompanies the lady employee to the doorstep. (ASSOCHAM, 2013). Another fallout has been the emergence of transport exclusively for women, often run by women themselves. “Pink auto-rickshaws” have been started in Thane, Ghaziabad, Noida, Mumbai and Ranchi among other cities. The city of Bhubaneswar in the eastern state of Odisha introduced 300 pink autos in 2014 with have drivers who have undergone a strict psychological test, criminal background check and training (The Better India, 2014). In Kerala, She-Taxi, the all-woman taxi service is similar to other taxi aggregators but only hires women drivers. The vehicle is tracked by the Customer Care Centre with a GPS device. Police, relatives and friends of the passenger can also monitor the cab using the system. Passengers can send distress signals to the centre using a switch.

Mumbai’s local trains always had separate women’s compartments as do Mumbai, Delhi and Kolkata’s metro lines. When the trains stop, male inspectors guide men away from the carriage doors. Non-compliance is a punishable offense. In March 2018, Kolkata got its first fully women managed metro station. There are also six Ladies’ Special trains in the Mumbai suburban train network, two on each of the three routes. In Mumbai’s public buses -the BEST service has seats reserved for women in all types of categories of buses. In Tamil Nadu and other southern states, all buses run by the state have reserved seats for women. This has later been followed by private buses.

There are arguments against sex segregation in public transport that this confines women to the periphery of public spaces and reinforces gender roles. Separate access to transport typically implies greater costs and may not be applicable to the full continuum of transport services. There can also be an increased perception of risk for a woman travelling alone in women-only cars. (Transport Paper World Bank, 2010) Yet, there are several practical reasons why in India, it is still a good idea. As mentioned in Section A (1) (iii), safety and security concerns are strong reasons to keep educated women out of the labor force, hurting the economy.

In the small town of Dehradun (pop 0.6 million) a news report talks of widespread relief and happiness among women commuters upon the announcement of segregated seats for men and women. (Pioneer, 2016). A study by Mahadevia and Advani (2016) done in the medium sized western city of Rajkot showed that shared autos which operate on fixed routes with a fixed price were used by more men while women preferred the single passenger auto even if they had to pay the full fare alone. Women commuters in ‘women only’ coaches feel more at ease during the travel and there is a sense of sorority and “girl-bonding”. As one commuter described in an article in an online journal Metrorail News (Shah, 2016):

“The body language of women in this car feels different. They look carefree. Some listen to music on their headphones or read a book or newspaper, rarely looking up. They don’t have to worry about being groped or stared at by creepy men. Women travelling

in groups often speak loudly as they catch up with friends or colleagues, gossiping, laughing, discussing school, work or family problems, even taking selfies!” – Ms. Ritu Chatterjee, *A regular commuter on the Delhi Metro*, *Metrorail News*, 2016.

However, reserving seats does not completely solve the problem of women’s commuting. A commuter from Kerala (Navya PK, 2017) points out that in her home state, where nearly the same number of men and women travel in buses during non-peak hours, women are the ones who end up without a seat – because the seats reserved for women are fewer, and all the remaining ‘general’ seats are occupied by men. Reservation of a small number of seats for women translates into the reservation of all the remaining ones for men. There is a section of Indian women, vocal on online forums, who believe that seats must only be reserved for pregnant and old women.

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SECTION B: FRANCE

I. Brief profile of Working Women

French gender equality policies, which began to be developed since the 1970s to reduce inequalities between men and women in professional and social lives, have been strengthened incrementally over the years. According to a report submitted to the European Parliamentary Committee on Women’s rights and Gender Equality in France gives some examples: For the first time in 2010, a sanction mechanism for private firms that do not adopt a gender equality plan was introduced; in 2014, the ‘Law on Real General Equality’ was passed requiring all policies to have a gender dimension; the law against gender-based violence was strengthened in 2010 by creating an emergency protection order and defining its violation as a crime; in 2011 gender quotas up to 40% to corporate boards of publicly listed companies and several civil society institutions were mandated.

Nevertheless, the authors of this report, Lépinard and Lieber (2015) point out that implementation of these policies in France is variable depending on the political will of the respective governments and social partners. Consequently, gender-neutral employment or pension policies continue to reproduce gender inequalities, gender occupational segregation and the marginalization of women especially at the beginning and at the end of their working life. France is at 57.1 points on the European Index of Gender Equality against an EU average of 54 (European Commission, 2013).

1. Female Employment

In 2011, women constituted 47.3% of the employed population (Maruani and Meron, 2012). Among women in the age group 25 and 49 years old (the target group for this study), 83% were employed in the labour market, as against 95% of men in the same age band (Lemière, 2013).

2. Kind of employment

Although women's rate of employment has been converging with that of men's employment rate, it is also characterized by an over representation of women in part-time employment, especially in low-skilled/low-paid economic sectors, such that 2/3rds of the lowest paid workers in France are women (Lépinard and Lieber, 2015).

3. Gender Pay Gap

In 2016, women earned 15.2% less in 2011 than men. (Eurostat, 2018). The number of women managers in senior levels in the private sector was only 23% and in the public sector was 32%. Aeberhardt & Pouget, J. (2007) showed that wage differential between men and women who had both parents born in France was as high as 30%, while immigrant women were disadvantaged anyway as immigrants of all genders earned lower incomes.

4. Occupational Segregation

Occupational segregation is apparent. 41% of all employed women in France work either as "Personal service workers", as "General and keyboard clerks" or as "Cleaners and helpers", which is noticeably above the EU-27 average (37%). Men, on the other hand, are predominantly employed as "Building workers" or "Science and engineering professionals" (Stiftung, 2011). Women outnumber men in higher education but are less likely to enroll in scientific courses or Ph.D programmes (Jaggers, 2016)

5. Female unemployment

In 2012, the female unemployment rate (10.1%) was higher than that of men (9.8%) irrespective of the age group or family situation. Women's unemployment was, however, less affected by the economic crisis rising only very slightly between 2002-12 while male unemployment rose by 2% in that period (Eurostat Labour Force Survey, 2013). In a different 2013 survey, it was found that despite women being better qualified than men, three years after finishing their baccalaureate, they experienced an overall unemployment rate equivalent to that of men. In the same way, rapid access to stable employment was found to be generally more common for men, though this not for all levels of qualification (Jaggers, 2016).

In summary, though remarkable progress towards gender equality in the employment and professional domain has been made since the 1970s, the overall profile of French working women resembles that of working women in many other countries- the predominance of part-time work, gender pay gap and

occupational segregation. One reason has to do with well-intentioned laws not being implemented in spirit, especially by private actors.

Being a mother impacts employment. According to the 2018 report of the national family agency Casse Nationale de Allocation Familiale (CNAF, 2018), only 63% of women who were mothers in dual income households had a full-time job. And having more children was inversely proportional to the mother's rate of employment. In the case of single mothers, only 57% were able to work full-time post their delivery. The same report also shows that in single earner households which have at least one child below the age of three, it is the mother who does not work in 90% of the cases.

II. Mobility of Women

1. Trip Length in the journey to work-France overall

With the emergence of peri urban areas as employment hubs in the 1990s and the first decade of the new century, the average distance to work for all French commuters increased by 2.7 km between 1994 to 2008. (Hubert, 2010). Like in other countries, women in France too work closer to home than men do. Women are also much more likely to work in their commune of residence -28.2% compared to 23.1% for men. The average work-home distance for women was 12.9 kms as against 16.5 kms for men. Despite these distances, their average time to work differs very little from that of men: 23.2 minutes for men and 22.0 minutes for women due to private cars being the dominant mode of transport to reach the workplace. (François, 2010). This is still below the world average time taken for commuting, which is 40 minutes and also below the duration, beyond which commuting starts having negative effects on well-being i.e. 30 minutes (Express, UK)

Overall, men are more mobile when it comes to travelling long distances for work reasons than women. (7.2 annual trips against 5.6). This difference can be explained almost entirely by professional travel, with men averaging 1.93 professional trips per year compared to 0.66 for women. Women's underrepresentation in the higher socio-professional categories (managers, liberal professions, entrepreneurs, etc.) is implicated for this difference. Work-related travel by women has, however, started to catch up, from 0.34 to 0.66 per person per year, reflecting the increasing involvement of women in professional life. (Grimal, 2010).

2. Modes of Transport

The graph below in Figure 5 drawn from various national mobility surveys, shows the difference in the modes of transport used by men and women in France on the journey to work. Similar to most countries in the world, French women are higher users of public transport and walk more than men do.

Private Cars

Although number of new cars being registered has stagnated, 80% of households in metropolitan France have at least one car and of these, 34.5% of households have two cars or more while the modal share of non-motorized transport is under 5%. The number of cars per household increases up to 1.7 cars per household in the peripheries of the major urban centres of the provinces.

Certain higher social classes in upmarket residential localities want to distinguish themselves from the hoi-polloi by their restrained use of the car. In this demographic, the car is less used and more time is spent on travel as they prefer non-motorized modes. Car usage is much more prevalent among the lower income groups like labourers. The type of job too mattered. For example: those who were obliged to carry heavy things as part of their work preferred the car.

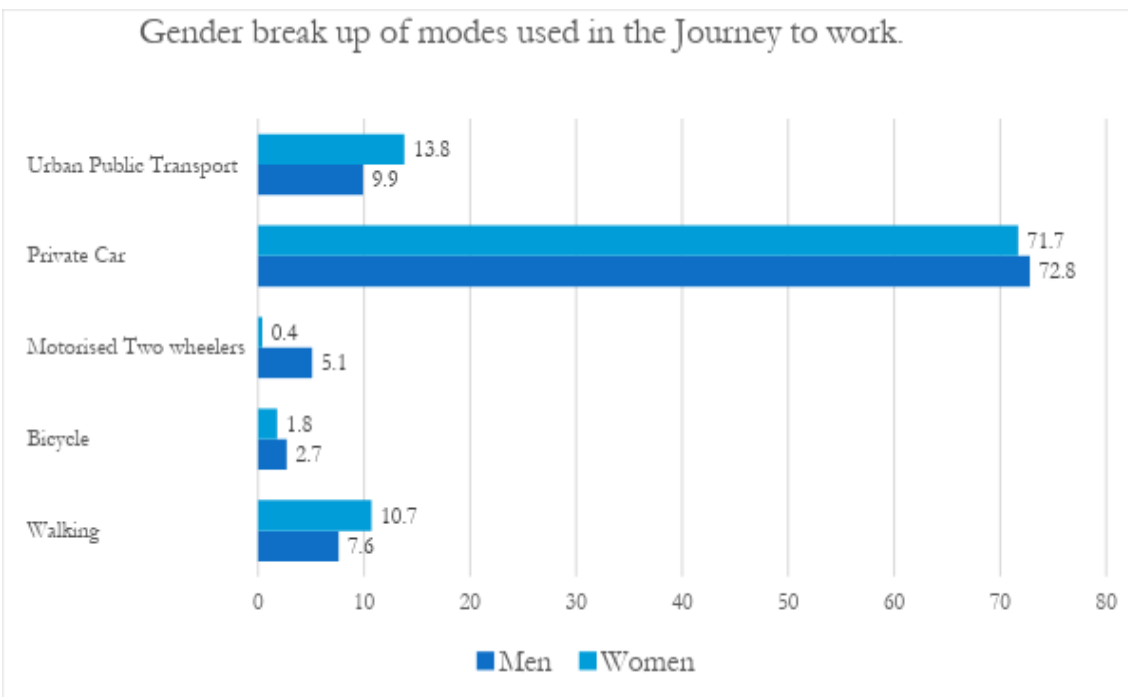


Figure 5: Gender breakup of transport modes used in the journey to work in France. Source : François, 2010. Data from SOeS, Insee, Inrets, enquête nationale transports et déplacements 2008

Women's access to private cars had long been limited by the appropriation by men of the single vehicle of the household and by a low rate of possession of the driving license by women. Women in France are now catching up in the aspect of possession of a driving license. Seventy six percent of women in France have a driving license against 64% in 1994 and 47% in 1982. This rise is mainly contributed by a higher number of older women over 55 years possessing a license. The number of women who drive frequently has also risen in 14 years. Of the women with a driving license, 80% drove regularly as of 2008, compared to 77% in 1994. The number of women as co-passengers is almost insignificant. Women now make more

daily trips than men, but at smaller distances; spending less time than they did in transport. (Armoogum et al, 2010).

Women's employment has also enabled multi-motorization of households. The attribution of a preponderance of cars in France to the feminization of the labour force, which is often done (for example, Armoogum et al, 2010), is misleading and hides the full story. Women do use the car more than men do but the fact that they make more trips of short distances and take up jobs closer to home implies that both trip chaining and occupational segregation of women is well and truly alive in France (the latter point was evident in the previous section on profile of working women).

Data from the last EMD shows that 9% of women chaperon children to school while going to work while only 3% of men do. Women make 3.18 trips on an average while men make 3.1 trips. Several trips of short distances is the classic pattern of trip chaining- where women combine local trips concerning the children or domestic maintenance with their work trips. Or these 'care work' /household trips maybe outside of work but involve a bunch of errands tied together to optimize time. For working women, this means severe temporal constraints which can best be negotiated by a private vehicle. (There were several such cases among the Grenoble respondents which are detailed ahead in chapter 6) This is why, all other things being equal, women are more likely to take a car than men.

Motorized Two wheelers

France two kinds of households possess two wheelers. One which have no car and the other which have at least two cars. For the first kind of households which are mainly found in suburban or rural areas, the two wheeler is the only mode of mobility. The second type of household is found in city centres and in the grand agglomerations. For the second, which is a high income group the two wheeler is a supplementary mode of transport for short distances. Men are overrepresented as two wheeler drivers-87% driving the macho motorcycle. Women on two wheelers are those driving scooters and are mostly found in Paris. (François, 2010).

Cycling and Walking

The increase in the distance between home and work has reduced the viability of using the bicycle as a daily mode to get to work, a challenge that is common to Indian small towns as well where bicycle usage has decreased due to urban sprawl. On weekdays, women walk more often than men: out of 100 on foot, 61 are by women. The opposite is true for cycling: out of 100 bike trips, 62 are made by men. Women also walk more and more often on foot: 61% of trips in 2008 compared to 58% in 1994.

Public Transport

The Urban Mobility Plan (PDU – Plan de déplacements urbains) was developed and broadened in 1996 when the French air quality Act (Laure – loi sur l’air et l’utilisation rationnelle de l’énergie) made it compulsory for urban areas of more than 100,000 inhabitants to produce a PDU. Due to the PDU, local authorities introduced new transport projects, made substantial investment in public transport and redeveloped city centres, introducing road sharing schemes that favour public transport and environmentally friendly modes of transport and the economic crises of 2008 which have stemmed the growth of cars in the city centres. (De Solere et al, 2012). In the past twenty years, this has allowed the development of urban public transport (TCU), particularly the re-introduction of tram services, in many French cities. There was a 30% increase in urban public transport use between 2000 and 2010 in agglomerations with a population greater than 250,000 but the increase was much less significant in smaller conurbations where the car still ruled. (Chiffres clés du transport, 2018)

Like in India, more women than men used urban public transport- 14% compared to 10% in the journey to work.

III. Conclusion

The Global Gender Gap Report 2016 published by the World Economic Forum (WEF,2016) offers us normalized scores on certain parameters by which we can gauge the status of working women in the countries of the world. The scores for India and France are juxtaposed in Table 1.

Table 1 : Indicators of working women’s status according to the Global Gender Gap report 2016					
Indicator	France	Rank	India	Rank	Number of countries considered
Labour force participation. (Ratio of female value over male value)	0.89	34	0.34	135	144
Wage equality between women and men for similar work (survey data, normalized on a 0-to-1 scale)	0.47	134	0.57	103	135
Ratio: female estimated earned income over male value	0.72	22	0.23	137	142

France ranks 17th on the list of 144 countries and is one of two countries in the region to have fully closed its gender gap on the Educational Attainment and Health and Survival sub-indexes. India 's overall rank is a poor 87, though it has moved from 98 in 2006. However, wage inequality between men and women in France is one of the worst in the world. In November 2016, women in institutions including Paris City Hall stop work amid spontaneous demonstrations to highlight wage disparity between men and women. This has been attributed to the difference in the nature of the jobs between men and women and the resulting occupational segregation, rather than wage discrimination (Aeberhardt and Pouget, 2007). Relooking at French family-friendly policies that encourage reconciliation of work, some believe that they have in fact led to the reduction of mothers' working time and their withdrawal from the labour market, with a particularly strong impact on less educated women (Lépinard and Lieber, 2015). Lesser time at work has also resulted in lesser wages for women, increasing the gender pay gap.

With respect to mobility, working women in France benefit from high access to private cars as well as by a well-developed public transport network that allows access to various destinations, especially the workplace. According to the Census of 2011, there are 1,43,70,318 (approximately 15 million) women in urban India who undertake some form of travel to work. They form 16% of the total urban Indian population that travels to work. Policy lacunae in urban transport resulting in shoddy services, uncertain timings, unregulated fares, lack of safety and inconvenient transit affect these women more than the 84% male working population since there are differences in male and female usage of transport modes. Characterized by high employment in the informal sector, which includes working from home, nearly half of India's working women, do not even travel to work. The ones who do mostly walk to work for less than 5 kilometres.

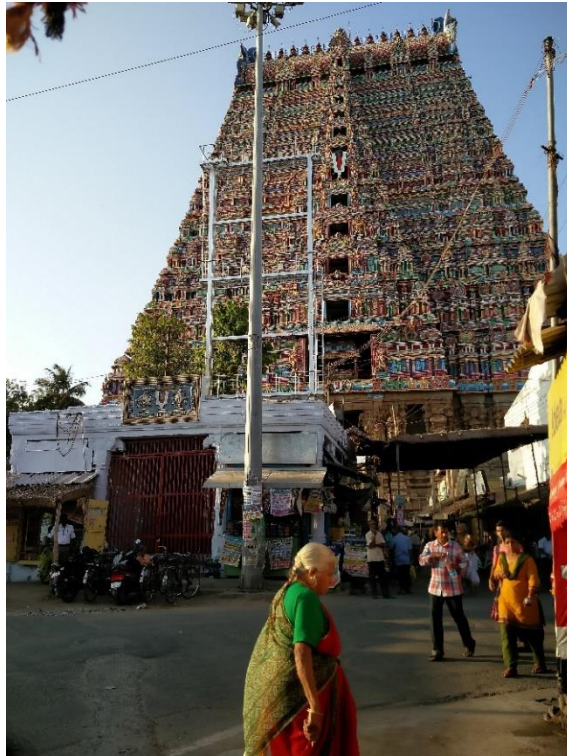
Having given a global overview of the French and Indian working woman in this chapter, in the next three chapters the mobility and spatial accessibility of a sample of urban women- i.e. working mothers, are presented for the three cities studied.

References on page 381

PART 2: CASE STUDIES



JALANDHAR



TRICHY

"I can't understand why men make all this fuss about Everest" –

Junko Tabei, Japanese, first woman to climb the Everest

The day a woman can walk freely on the roads at night, that day we can say that India has achieved independence.

Mahatma Gandhi



GRENOBLE

« Je veux vivre enfin en femme du monde, comme j'en ai le droit, comme toutes les femmes en ont le droit ! »

Gabrielle, heroine of "Useless Beauty" - Guy de Maupassant - L'Inutile beauté'



All photos by author

CHAPTER 4 : JALANDHAR

This chapter has three sections. Section I provides an overview of Jalandhar agglomeration, its location, importance to the region, urban growth in recent decades and transport options in the city. Section 2 dwells on the first research question in which the working women of Jalandhar and their mobility patterns are presented on the basis of the census data. In section 3, after a description of the sample, the next three research questions are discussed, based on the primary research conducted in Jalandhar.

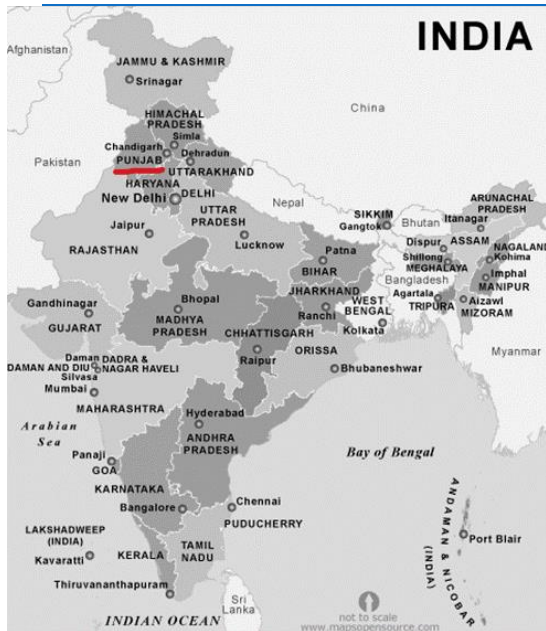


Figure 1: Map of India showing location of Punjab
Source: mapsopensource.com (not to scale)

Figure 2: Map of Punjab showing Jalandhar district.
Source: Garg and Aggarwal (2015) (not to scale)

SECTION A

I. Overview of Jalandhar city and agglomeration

The State of Punjab

Jalandhar district lies in the Doaba region in the state of Punjab. Punjab (in Figure 1 above) is the twentieth largest state in India by area and the sixteenth most populous. The state was ranked fifth among states in India according to the UNDP's Human Development Index in 2015. Punjab is one of the most fertile regions in India due to the presence of abundant water resources in the form of rivers and fertile soil. The state is primarily agriculture based and is often referred to as the "Wheatbowl of India". Agro-based industries are significant contributors to the state economy.

District of Jalandhar

Jalandhar's history goes back to the Indus Valley civilization and has been mentioned in ancient Indian epics as well as the 7th century works of the Chinese traveler Hsien Tsang. Modern day Jalandhar district is the ninth largest in terms of area and fourth largest in terms of population amongst 22 districts of Punjab, (District Census Handbook, 2011, Part B). Table 1 below gives some key comparisons between the district and the state.

Table 1: Comparison of state and district for key development indicators (Source: District Economics and Statistics, Punjab; Census, 2011.)		
Indicator	Punjab state average	Jalandhar district average
Population density-persons per square kilometre	550	831
Population in urban areas	37.5%	52.93%
Sex Ratio	895	915
Female Literacy Rate	70.7%	78.5%
Per capita income (in Rupees) in 2011-12	85,577	75,393

The district performs better than the State level in socio economic indicators. The reason is the higher level of urbanization and the presence of various industries in and around the city of Jalandhar.

The district is famous for the production of sports equipment, leather goods, rubber goods, surgical tool, electrical goods, etc. and for its publishing houses which produce nearly 18 daily newspapers in English, Punjabi, Hindi and Urdu.

Jalandhar has a large number of migrants who are settled in foreign countries i.e. Non Resident Indians , especially to UK and Canada. The district economy benefits from the remittances it receives from the diaspora. Most of the land is under agriculture. The figures 3 and 4 below show the extent of built up urban area in Jalandhar district (in red) as of 2011-12, of which most is concentrated in Jalandhar city.

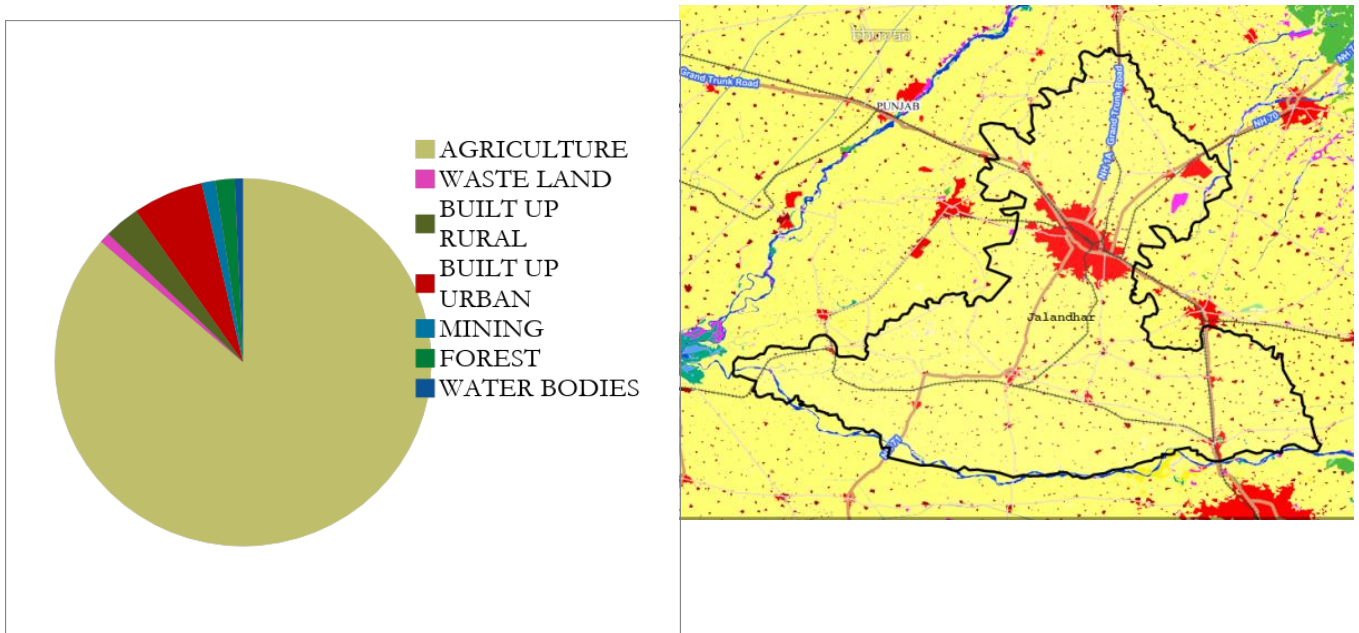


Figure 3 and 4: Land use Distribution of Jalandhar District- 2011-12

Jalandhar City

Jalandhar city occupies more than 98% of the area and population of the urban agglomeration. In fact, prior to the municipal elections in December 2017, these outgrowths have also been included in the municipal corporation limits. Hence the discussion will only be centred on Jalandhar city, as the other small towns of the agglomeration are not relevant to the topic under study. The constituents of the agglomeration are provided in Appendix 1.

Jalandhar, the third largest city of Punjab is situated between the fertile agricultural land of river Sutlej and Beas. River Beas flows at a distance of about 35 kms to the North of city. Jalandhar is third largest city of Punjab Located within the geographic coordinates of

31.326 N 75.576°E, Jalandhar has a general elevation of 780 m above sea level. Jalandhar has a humid subtropical climate with maximum mean temperatures in summer being 44 degrees Celsius and the lowest mean temperatures in winters touching 6.4 degrees Celsius. (Jalandhar Master Plan 2031).

Jalandhar also supplied 80,000 soccer balls for 2014 FIFA World Cup in Brazil(Source: IBEF). Small scale industrial units are the main employment generators in the city. Out of the total city's employment in industrial sector, 97.06% of employment is in small scale industries. (Smart city proposal, 2016). Jalandhar city is a predominant centre for education in the state. A number of universities including Punjab Technical University, Guru Nanak Dev University campus and Lovely Professional University and a number of Arts, Science & engineering colleges (136 in number) are present in the city. Jalandhar is also a hub for medical facilities, having 396 health care units which provide the latest health care facilities at regional and international level. . (Smart city proposal, 2016)

II. Urban Growth

Jalandhar is a dense city – its population density is 7844 people per sq. km compared to the state average density of 551 people per sq. km. In the decade between 1991 and 2001, the population of the city grew almost 2.5 times in population and five times in size. Urban growth has been dynamic and continuous because of rural migrants who were attracted by Jalandhar’s fertile region, relatively calm political situation (compared to many parts of Punjab which were affected by terrorism in the 1980s) and enormous growth in small scale industries such as iron casting, hand tools, sports and surgical equipment etc. that could provide employment.

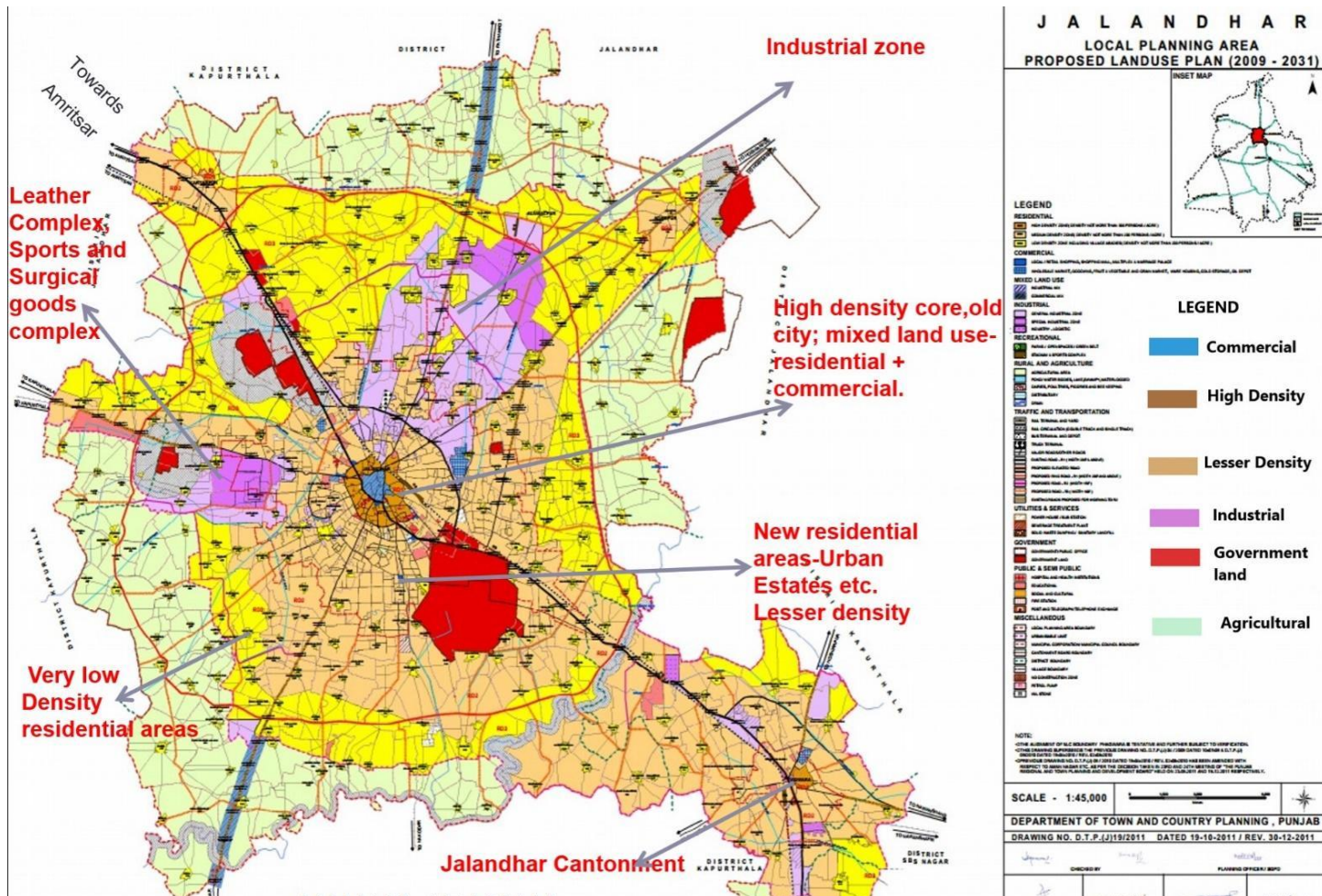


Figure 5: Land use map of Jalandhar urban agglomeration with key areas indicated. Source: Jalandhar city masterplan

The Jalandhar Masterplan document (2011) identifies the following patterns of growth in the land use map in Figure 5.:

- a. The core centre, which is the oldest part of the city, has small plot sizes with houses up to four stories high and congested development with a minimum area under narrow roads, open spaces and other physical and social infrastructure. The mixed land use character of this zone (see Figure 6) is also

a factor which results in a high population density of above 150 people per acre. About 12-15% of the city's wards are located in the core centre.

b. As we move away from the core of the city, the ward wise density of population starts decreasing as the nature of development in these areas is comparatively low rise, plot sizes are bigger than those in the core area, thirdly the roads are wider and level of social and physical infrastructure in these wards is also better. The density is between 51-150 people per acre. Approximately 35% of the wards are in this zone. Most of the schools, colleges and the Jalandhar railway station fall in these wards.

c. In the periphery, we find wards with low population density (less than 50 persons per acre). These areas are either sparsely built up or under development. The wards here are work areas (industrial) with minimum living areas. Also, the area of each ward is larger than the wards in the core area of the city. About 50% of the wards lie in this low density zone.

Most of the city's growth was haphazard and unplanned, resulting in highly uneconomical use of agricultural land urban sprawl and growth of slums¹. The slum population is 1,77,557 persons comprising 34,820 households, which is 24.86% of the total urban population (Kumar, 2017). The high cost of land in approved colonies and the³ lack of social housing, resulted in the poor, including migrants, to live in slums.

III. Roads and Transport

Jalandhar has a ring and radial type of road network. It has access to 4 National Highways with the Grand Trunk road, (National Highway 31) which is the sub continent's oldest arterial highway, passing through it. This is significant because cities of Punjab located on this highway have seen the maximum urban population growth. (Jalandhar Masterplan document, 2011)

The transport terminals present in Jalandhar are a Bus Stand in the centre of the city, a truck depot in the north close to the city's industrial area is to make movement of freight easier and a railway station. Several railway lines pass through the city linking Jalandhar with other areas of the state/ country. It is easily accessible by rail as it is connected to Amritsar on one side and Delhi on the other by a broad gauge railway line. The zig-zag street pattern, narrow roads, absence of pedestrian pathways, movement of mixed traffic, high dependency on personal vehicles and on-street parking results in a chaotic situation in the city.

³ A slum, as defined by the UN Habitat, is a run-down area of a city characterized by substandard housing and squalor and lacking in tenure security. According to the Indian census, a slum is a compact area of at least 300 populations or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water.

Figure 6: Mixed land use in the central part of the city showing homes and commercial establishments in the same building. Photo credit: Author

The traffic congestion in Jalandhar has continued to increase unabated especially during the last two decades. The main reasons for this are the phenomenal growth of vehicles in Jalandhar, the problem of mobility and parking within central city areas due to population growth, mixed land use (Figure 6) and unauthorized colonies. There has been limited addition in the roads space by way of new roads, widening of existing roads or other improvements.

Public transport in Jalandhar has not met with any success although in fits and starts the government has made some



attempts to run a city bus service. Way back in the 1980s, Punjab Roadways, the state transport corporation, began a city bus service. Its running was soon shifted to the Municipal Corporation who eventually passed it on to private fleet owners.

In December 2006, another attempt was made to provide public transportation services in the city. The Government of Punjab constituted a company, Jalandhar City Transport Service Limited (JCTSL) which was incorporated in December 2006. The objective was to operate and manage the public transport system of Jalandhar and provide differentially priced services, with cheaper fares for those who cannot afford higher prices. It operated 15 buses but on only two routes, one a short distance from the bus stand to railway station and another from the central bus stand to Kartarpur in the north western part of the city, towards Amritsar. This was run with the help of various private operators. (ICRA report, 2013). In mid-2014, the city bus services were abruptly stopped by the private operator managing the service in protest that the government had not taken steps to stop the plying of illegal autos, which were competing with the bus service for passengers. The private operator declared that they were incurring huge losses and was hence withdrawing his services (Singh, 2014).

Mini Buses

Mini buses are usually 20-25 seater buses and are operational on certain specific routes. These services usually start from the city bus stand and provide connectivity to the suburban areas, which are currently left un-serviced either by auto-rickshaws and city buses. Mini buses also compete with auto rickshaws in offering transport services.

Autos

There are two types of auto-rickshaw services in Jalandhar. One is the “Shared auto service”, which plies between a fixed origin and destination. Such type of services can be found throughout the city and are found providing connectivity to almost all major locations of the city. The main routes serviced by the shared auto are shown in Figure 7. As can be seen in the map, the shared auto does not go into the inner streets and passengers who wish to board have to reach the origin point on their own.

The second type of services which the auto-rickshaws are providing is the option of single hire. This is a door to door service but the passenger has to pay much more than the shared service. These are rare to find in Jalandhar while shared auto is much more easily available.

A report analyzing the need to introduce new bus routes in the city commissioned by the Jalandhar Municipal Corporation (ICRA, 2013) measured the accessibility index of different zones in Jalandhar using two criteria- (i) coverage of the zone by paratransit, mini buses and existing bus routes and (ii) area of the zone in square kilometres. Figure 8 shows the results of the exercise. Although this was done in 2013, it remains valid as Jalandhar still does not have a public transport system. In fact, the few city buses which were operational have been withdrawn since the publication of this report. Hence the accessibility would only be worse than what is depicted in the figure.

The Accessibility Index ranges from 8 to 0, with 8 having the highest accessibility and 0 the least. The AI is highest in the core central area because the central bus stand is located there, which makes it easy for a person to take inter city buses as well as shared autos going in any direction. Large tracts of the city, as we can see, remain unserved by transport. In the sections ahead which discuss the respondents’ mobility and accessibility, it is evident how transport exclusion, contributes to their stranded mobility.

IV. Endnote

Jalandhar’s urban growth has created challenges on various fronts- infrastructure, housing, civic amenities etc. adversely impacting the quality of its residents. In terms of mobility, the existing transportation network has not kept pace with increasing travel demand. Accordingly, roads have lost their functional character and are carrying traffic beyond their service capacity. The traffic and transportation in Jalandhar remain chaotic for a major portion of the day and road users suffer enormously in the process. As Jalandhar is a radial city, all the routes originate and terminate at Main Bus Terminal leading to the congestion in central areas of the city. Due to lack of public transport, predominant modes used for the intracity passenger travel in Jalandhar

are personalized vehicles, cycle rickshaws, auto rickshaws etc. which enhance problems such as congestion, accidents, parking as well as pollution. (Jalandhar Masterplan, 2011).

The Masterplan itself is an outmoded tool of planning. It is based on a top-down approach drawn by authorities and people's participation is only solicited after the plan is prepared and put forth for objections/suggestions. The information base does not include the spatial aspect, especially on socio-economic parameters. In the case of most of the smaller Indian cities, accurate and appropriate base maps of cities are not available and the Master Plans are prepared on base maps which are obsolete and inaccurate (Bhaduri, 2012). Jalandhar's vision to be a smart city may be an opportunity to adopt more participatory approaches to city planning than the masterplan.

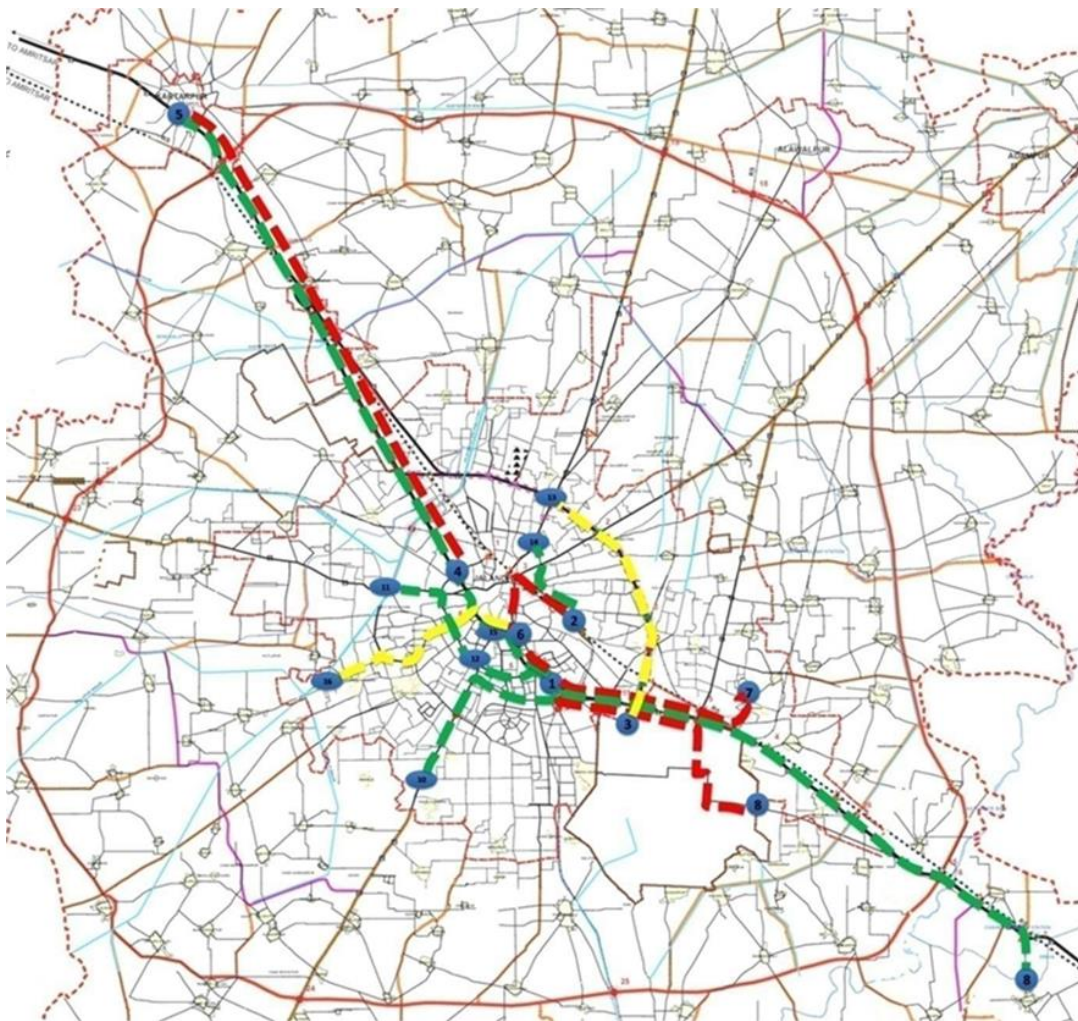


Figure 7: Map showing the main routes of the shared auto service.

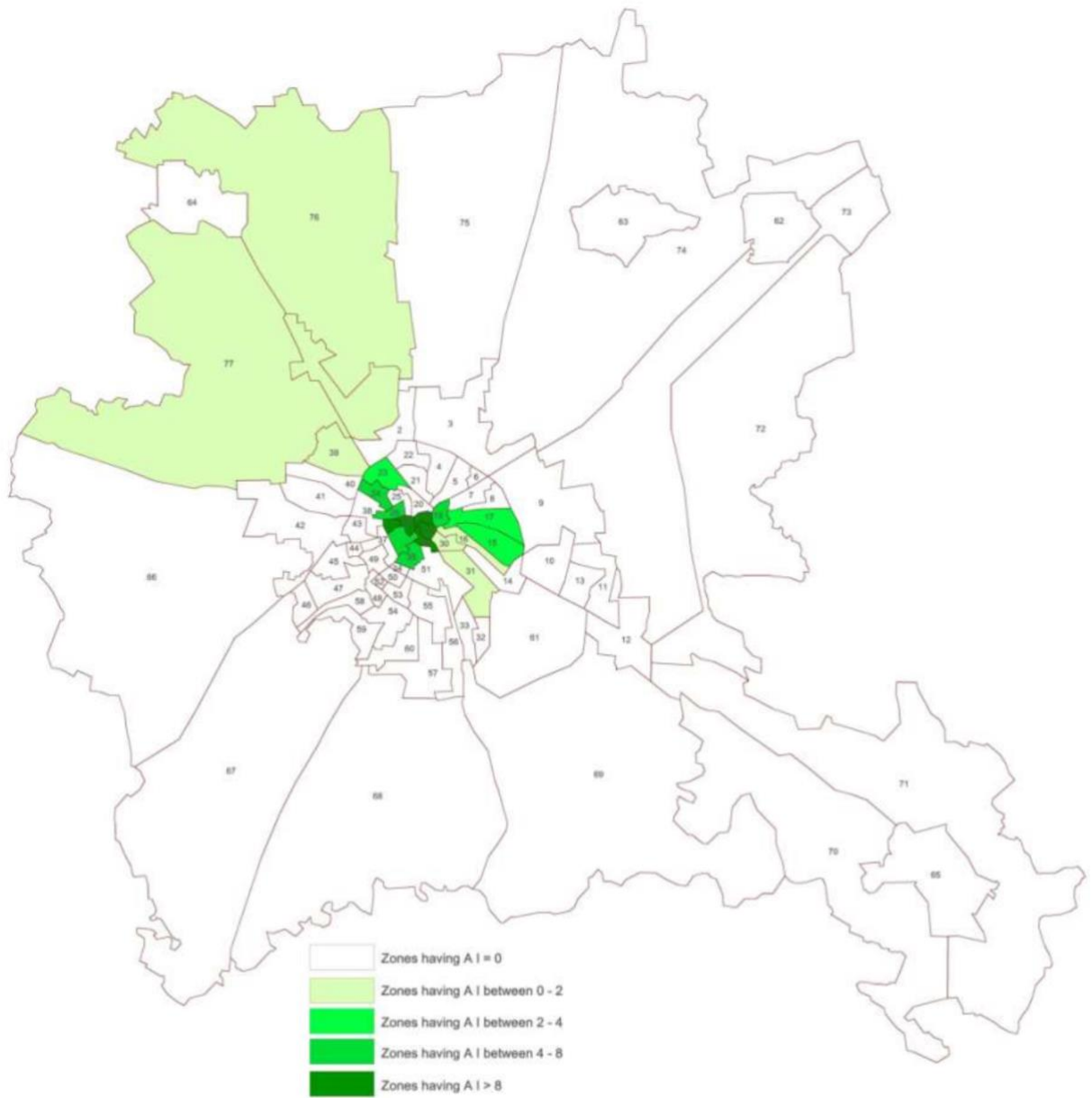
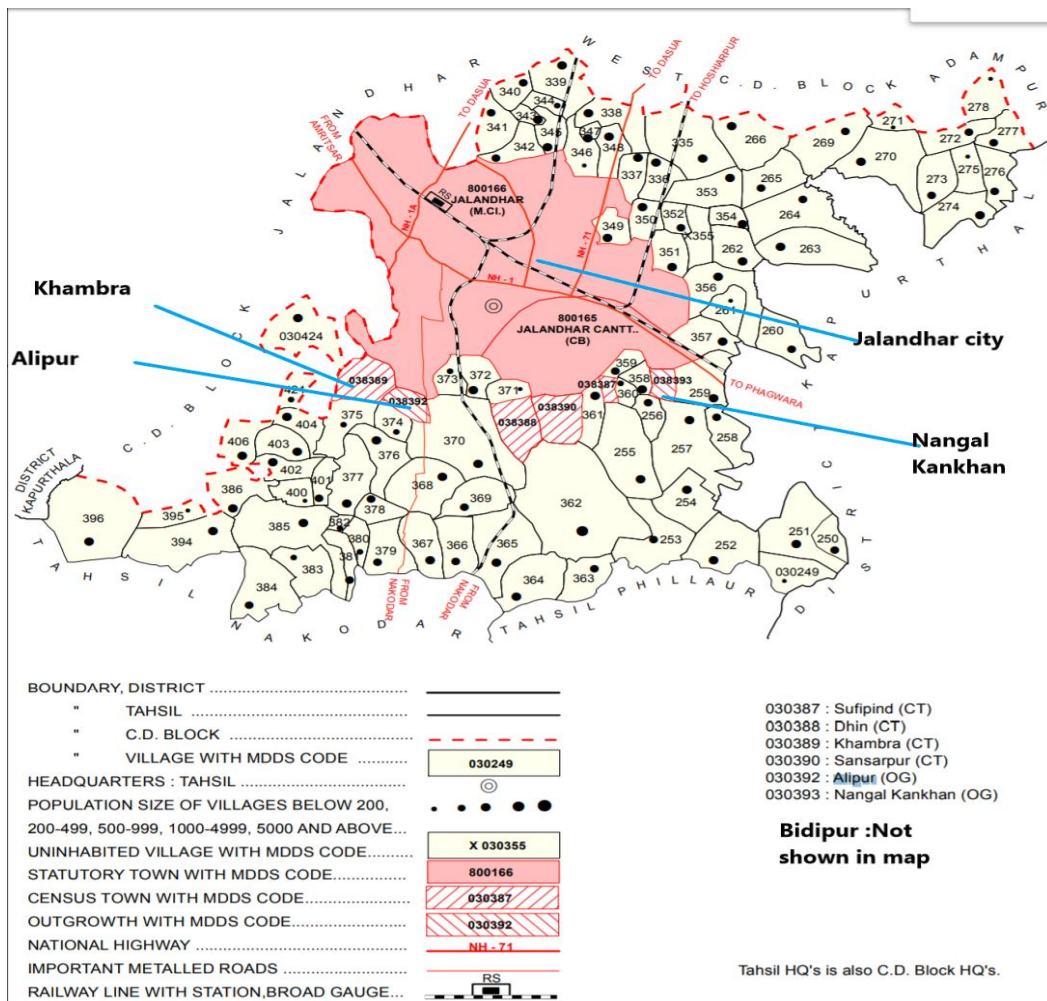


Figure 8: Accessibility Index of Jalandhar city. Source: ICRA report 2013.

Appendix 1 : Constituents of Jalandhar Urban Agglomeration



Town	Type	Population	Area in square kilometres
Jalandhar Municipal Corporation	Class I town	8,74,412	101
Alipur adjacent to Village Mithapur	Out Growth	2,250	0.75
Bidhipur on Amritsar Road	Out Growth	748	NA
Nangal Karar khan	Out Growth	3045	2.91
Khambra	Census Town	5483	NA
TOTAL		8,85,938	

SECTION B

Research Question 1 : What Are The Mobility Characteristics Of Working Women In Jalandhar?

I. Estimating the Universe of Working Women in Jalandhar

As per the census, the universe of working women whom this study is focused on i.e. 25-50 years old and having at least one child is given in Table 2. In the census, certain socio-economic data are given at the level of the district's urban part and not specifically for the agglomeration. Data for Jalandhar urban agglomeration is hence derived applying overall district percentages. The universe of this study of Other Workers¹ who are between the ages of 25-50 and are mothers in Jalandhar urban agglomeration is 20477 women.

Table 2: Universe of the Jalandhar study. Source: Table F-8 Indian Census2011- Number of Women and Ever Married Women by Present Age, Economic Activity, Number of Surviving Children And Total Surviving Children By Sex - 2011		
Age	Total Working women in each age group	Working women with children
25-29	8476	2946
30-34	7826	5203
35-39	8024	6375
40-44	7241	6040
45-49	6008	5040
Universe of working mothers in 25-50 age group in Jalandhar district		25, 604
Population of Jalandhar district (urban)		11,61,171
Population of Jalandhar urban agglomeration		8,85,938 (75.3% of district population)
Applying same percentage (76%)		= 76% x 25604
Universe of working mothers in 25-50 age group in Jalandhar urban agglomeration		= 19,459

II. Profiling working women of Jalandhar

Women of the target group in this study have a high level of education with half of them having a college degree (Table 3). However, the Work Participation Rate (WPR) of women in urban Jalandhar (Number of female Workers/Total female population) is 14% compared to a corresponding 56.4% for men (District Census Handbook, 2011, Part A). This is less than the average WPR for women in urban India which is 15.4%, according to the last census.

Table 3: Education Levels of Working Women in Age Group 25-49 In Jalandhar (Source: Indian Census 2011. Table B-9 Main Workers by Educational Level, Age and Sex - 2011)	
Illiterate	17%
Literate	83%
Literate but below high school	19%
High school but no university degree	26%
Technical diploma or certificate not equal to degree	2%
Graduate and above other than technical degree	37%
Technical degree or diploma equal to degree or post-graduate degree	13%

India's low work participation rate for women has been attributed to many reasons, which are different for different contexts. Given Jalandhar's poor mobility and accessibility to workplaces, which we shall see in the remaining sections of this chapter, it is a likely reason for the low participation of women in the labour market.

Figure 9 gives an overview of the sectors in which working women in Jalandhar are employed. The category of 'Education, Health and Social Work' occupies the most women -35%- followed by 'Arts, entertainment and other services' and administration. Since Jalandhar is an industrial centre, particularly for auto parts manufacturing, there is some representation (7%) of women in wholesale and retail trade dealing with vehicle repair. The 14% women in manufacturing is likely to include all the women who work as seamstresses and other tailoring activities or lower level production activities such as cutting and polishing in various sports goods and surgical goods manufacturing units in Jalandhar.

While Figure 9 gives us a profile of sectoral dispersion of women, Figure 10 reveals the kind of occupations they are engaged in within these sectors. As we can see in Figure 9, very few women are employed in senior managerial positions compared to men. Predictably, they are employed more in occupations related to teaching and health or as assistants to professionals. About a quarter of the women workers are in occupations which are unclassified. Similar to what we will see ahead in Trichy and even in Grenoble,

occupational segregation of genders is evident. This could be related to mobility issues of restricting themselves to job choices that allow them temporal freedom to balance home and work responsibilities.

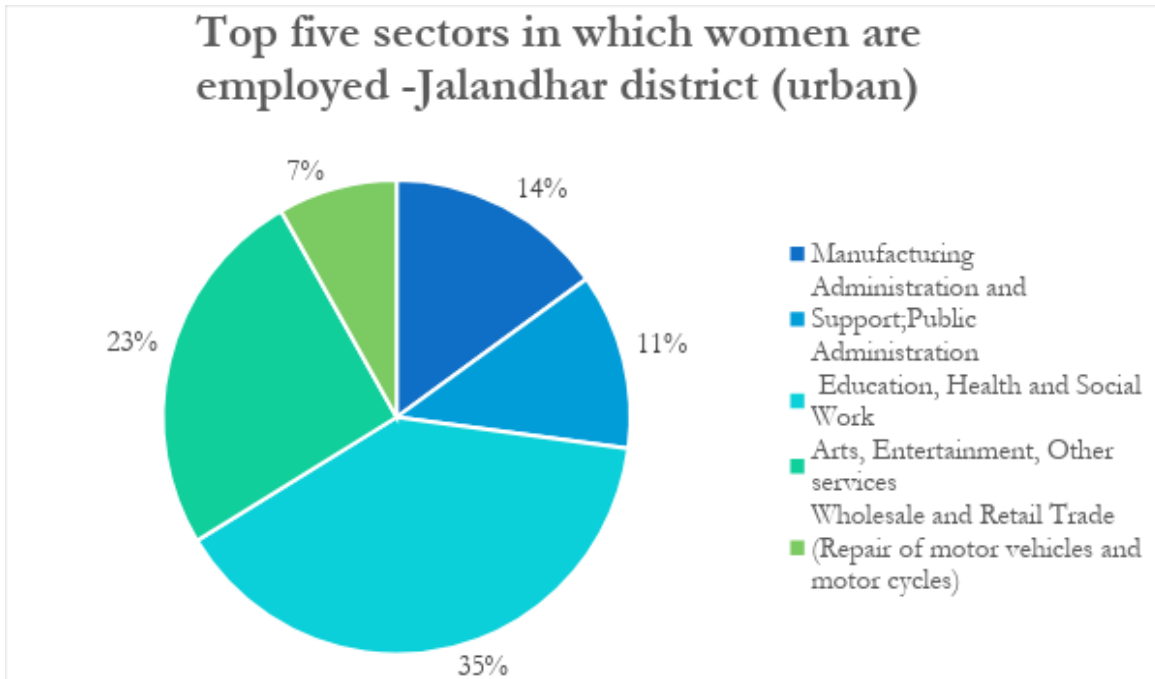
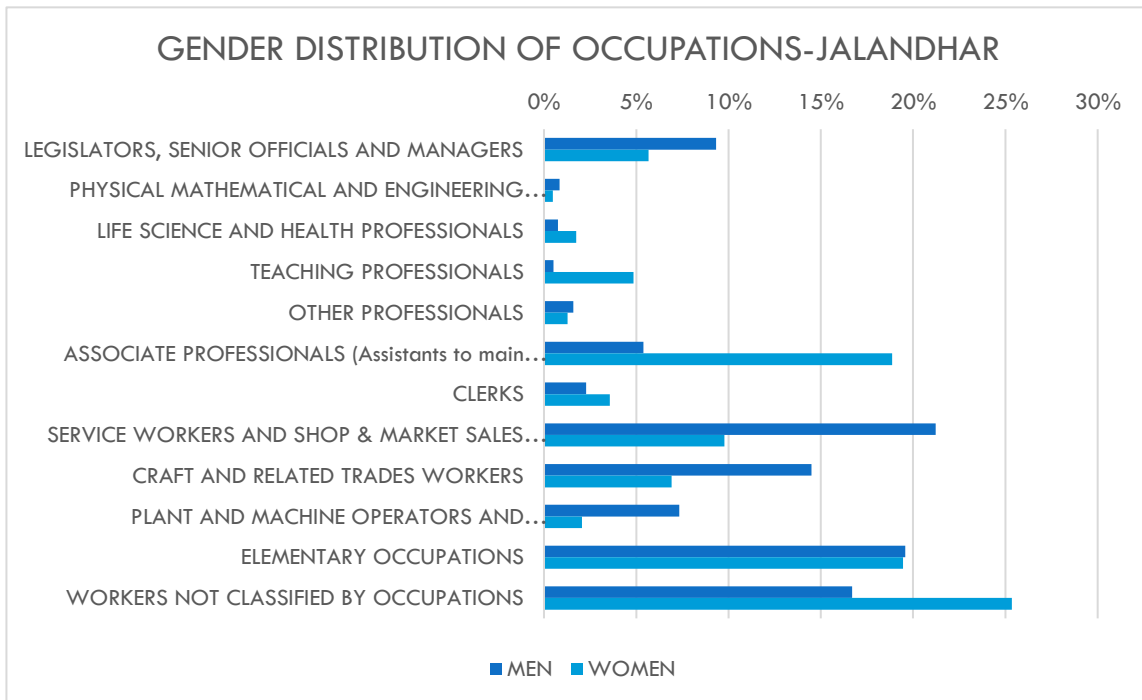


Figure 9: Top five sectors where women in Jalandhar are employed. Source: Author using data from Census 2011. Table B - 4 Main Workers Classified by Age, Industrial Category and Sex

Figure 10: Gender distribution of occupations among the working population of Jalandhar district (urban). Source: B-27 occupational classification of main workers and marginal workers other than cultivators and agricultural



labourers by sex and educational level - 2011

III. Mobility of Working Woman in Jalandhar

To be able to put the mobility of urban working women in Jalandhar in perspective with the rest of the country, the trip length data of **40 districts** out of India's 640 districts which are in the same urban population band as Jalandhar i.e. 1 to 1.5 million people using data from the last census. (Census, 2011, Table B-28). Here the reference is to *districts*, a larger administrative unit than the city or agglomeration.

Trip Lengths

In Table 4 we compare the averages for each trip length category for Urban India, Other 40 districts and Jalandhar district. In Jalandhar, the “No Travel” component and the number of women who travel long

Table 4: Comparison of trip lengths of working women in Jalandhar with the rest of urban India.
Source: Author using data from Census 2011. Table B 28 Other workers journey to work

In percentage	Urban India	Other 40 districts of similar size	Jalandhar (incl. No travel)	Jalandhar (Excl. no travel)
Very Short 0-1	19	18	15	25
Short 2-5	22	24	23	37
Medium 6-10	12	12	13	21
Medium-long 11-20	5	4	3	5
Long Above 20	5	5	3	9
No travel	35	37	40	0
Not stated	2	3	3	3
TOTAL	100	100	100	100

distances over 20 kms is higher than in the rest of urban India. According to the Jalandhar Masterplan document, every 6th house in the city is being used both for residential and commercial/office purposes, which could explain the higher than average percentage of “no travel”.

(Jalandhar Masterplan document, 2013, pp 61) A lack of public transport is a likely reason for a significant number of women to work from home. As discussed in the Literature Review on, poor public transport affects women the most, which is evident in the figures -only 3% of Jalandhar's working women travel far and a high 40% do not travel at all. Among the working women who work their home, shown in the last column of Table 4, like in the rest of the country, a majority of them travel between 2-5 kilometres. A huge 62% of those who do travel do not go beyond 5 kilometres.

Modes of Transport

Table 5 shows the modes of transport used by women going to work in the urban part of Jalandhar district, as per the census. There is some data for usage of buses even though there are no intracity

Table 5: Comparison of transport modes used by working women in Jalandhar and Trichy with the rest of urban India. Source: Author using data from Census 2011. Table B 28 Other workers journey to work			
In percentage	Urban India	Other 40 districts of similar size	Jalandhar
Bus	17	17	11
Bicycle	7	7	9
Motorized two wheelers	13	13	27
On Foot	48	48	36
Car	5	5	6
Informal paratransit	8	8	8
Not stated	2	2	3
TOTAL	100	100	100

buses, because people use the inter-city buses and get off en route to reach their workplaces. The lack of public transport compels working women to take other modes of transport such as the two wheeler. The graph in Figure 11 plots two wheeler usage by men and women across 40 districts including Jalandhar. Jalandhar has the highest number of women two wheeler drivers at 27%. The “Activa⁴” brand of gearless scooters or “scootys” as they are called, is produced by the Hero Honda company, the leading two wheeler manufacturer in India whose production centre is in the state of Punjab. Registration of scooties under women’s names has increased threefold between 2009 to 2014 according to data obtained by the author from the regional transport office (RTO) in Jalandhar.

Ride hailing services such as Uber is also available though it is not as popular an option as it is in bigger cities.

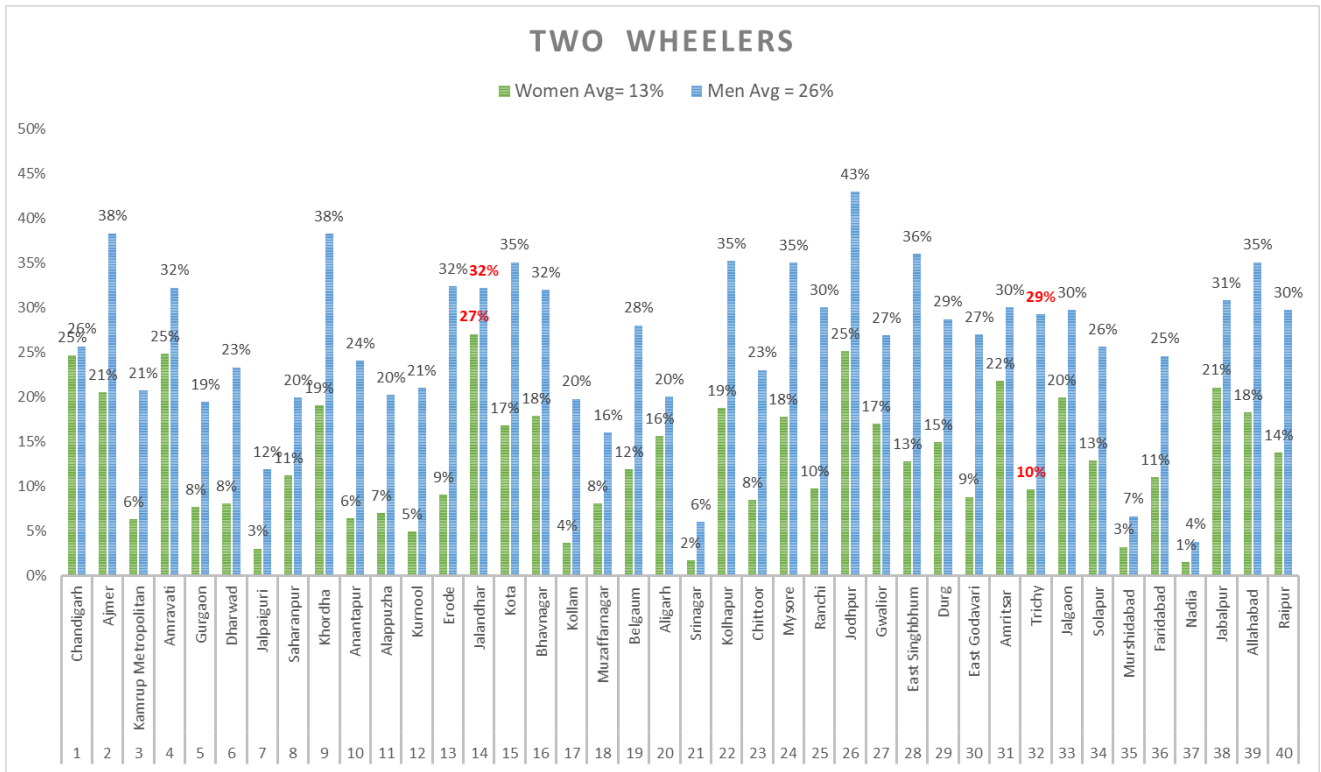


Figure 11: Gender difference in usage of two wheelers in 40 districts comparable to Jalandhar. Source: Indian census Table B-28 'Other Workers' By Distance from Residence to Place of Work and Mode Of Travel To Place Of Work – 2011(India/States/UTs/District)

SECTION C

I. Sample Characteristics

Before addressing the research questions for the Jalandhar sample, we present an overview of the sample's profile along four dimensions:

1. Daily trajectories
2. Family structure
3. Types of jobs
4. Socio economic class
5. Residential location

⁴ For the remainder of the case study on Jalandhar, the words “Scooty” and Two-wheeler have been used interchangeably.

Daily trajectories of respondents	
City ↔	43
City ↔ Agglomeration town	1
City ↔ Outside agglomeration	5
One agglomeration town ↔ Another agglomeration town	
Total	49

+Married here also refers to those who are living with a partner but not married. Single refers to both divorced and widowed.

Family structure					
Age of children		Marital status ⁺		Total	
At least one child below 10	At least one child between 10-18	All children above 18	Married	Single	
26	23	0	42	7	49

Types of jobs				
TEMPORAL	SPATIAL	Salaried	Self Employed- Out of house	Self Employed- Work from Home
Fixed Hours	Fixed Workplaces	38	5	4
Variable Hours	Fixed Workplaces			
Variable Hours	Variable Workplaces	1	1	
Total		39	6	4

Socio economic class of respondents

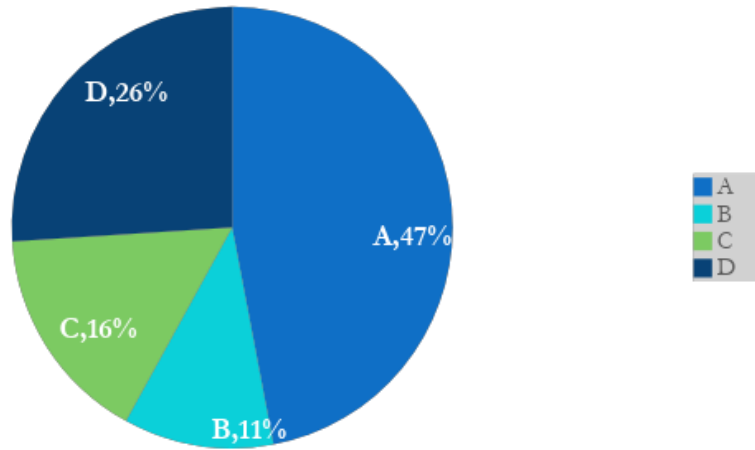


Figure 12: Socio economic classification of Trichy respondents as per classification described in Annexure 8

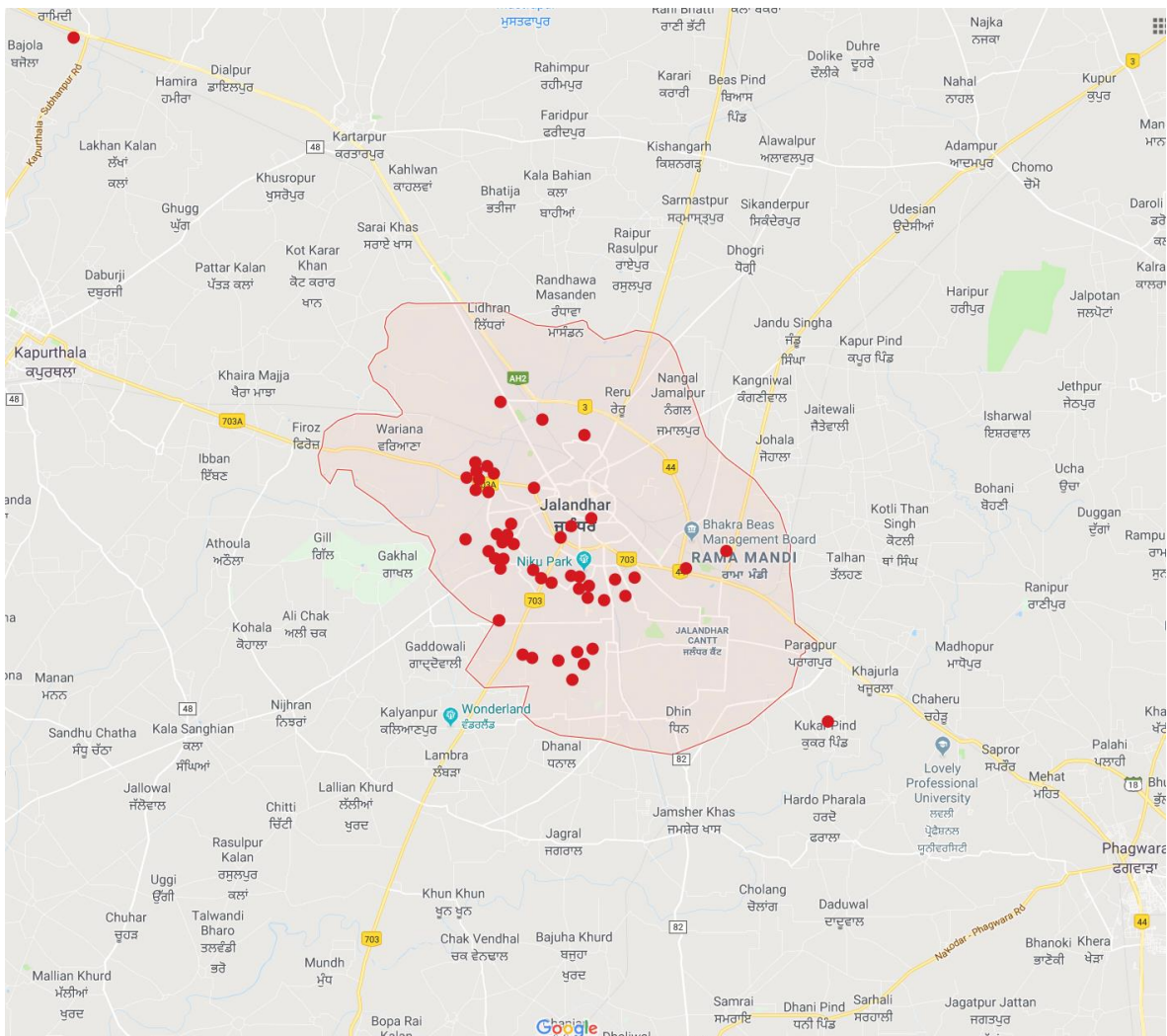
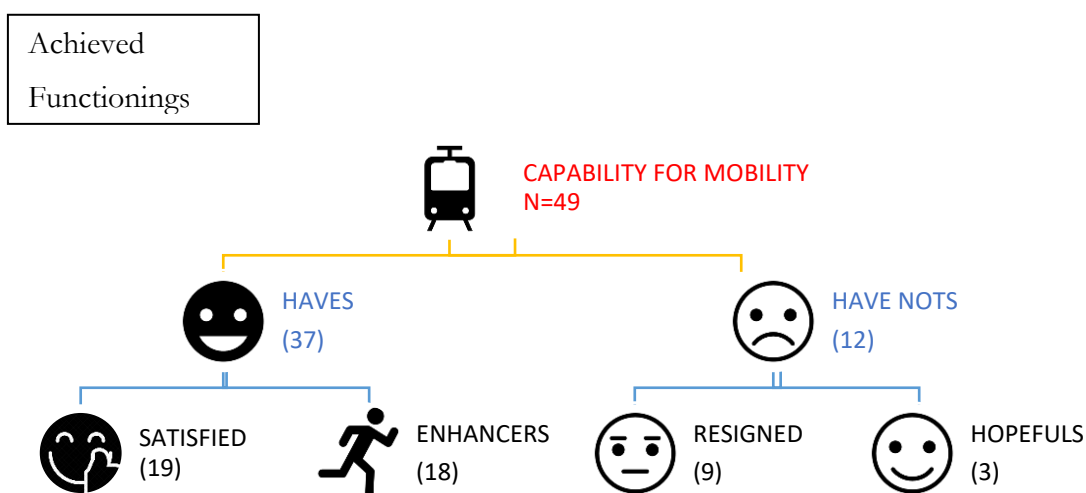


Figure 13: Residential locations of respondents in Jalandhar sample N=49. Map source: Google maps

Research Question 2 : What is the extent of the Capability for mobility among urban working mothers and what factors influence this capability?

The respondents in Jalandhar could be divided into ‘Mobility Haves’ and ‘Mobility Have Nots’ as per the criteria decided for this study - a. Ability to travel alone b. In a mode of transport other than walking or travelling as passengers in their husband’s vehicle. These categories have been depicted in Figure 14 followed by an explanation of the circumstances of each group.



Potential
Functionings

Figure 14: Classification of the Jalandhar sample according to the possession of Capability for Mobility

1. The Mobility Haves

Out of the 49 respondents, 37 possessed the Capability for Mobility. This means they were independently travelling either by private car, motorized two wheelers, the few inter city buses that ply between Jalandhar and adjoining towns, long distance train in one case or autos. These were their primary modes of transport i.e. those which they used to go to work. This does not mean that they never walked or were never passengers in cars or motorbikes driven by their husbands. **But they had the capability to access transport modes and were not dependent only on their own two feet or on male members of the family to escort them.**

2. The Mobility Have Nots

There were 12 respondents who do not travel on any mode of transport other than walking. If they do use any other mode of transport it is always when they are accompanied by someone from the family, usually an adult male member. These respondents have been classified as “Have Nots”. As per the Capability Approach, the Have Nots can be described as those who are unable to convert the resources of public transit, (including autos and rickshaws) or the household vehicles to the functioning of mobility. Except for the obligatory workplace which they reach on foot or as passengers in their husband’s vehicles, they are unable to access other opportunities in the city. This inability is explained away as a functioning that they do not even need. “I only go from home to work and back. Where else do you want me to go?” asked Sushila, an indigent laborer.

Among the Have Nots are nine people who are resigned to their low level of mobility, aspiring for nothing different. These people have accepted their situation of limited mobility and are not expecting or desiring any change in that aspect of their lives. In Figure 14, they are the ‘Resigned’. Three others who are ‘Have Nots’ picked mobility cards as potential functionings and discussed their aspiration to be independently mobile. These have been called the ‘Hopefuls’ in Figure 14.

Factors which enable or constrain the capability of mobility of the Mobility Haves and Mobility Have Nots are dwelt upon below.

II. Factors Affecting Mobility

1. Having access to a private transport mode – (Enabler)

Among the ‘Mobility Haves’ are 19 working mothers who did not pick any image of mobility as a potential doing i.e. they were the ‘Satisfied’ who did not seek any change from the existing mode of transport, which could be private or public. Nevertheless, not surprisingly, all but two were private transport users- -12 used a private car and five a private two wheeler.

Those on private two wheelers did not use it for long distance trips, for workplaces outside the city limits. But those who had their own cars undertook journeys to work for long and short distances and also used the car for non-work trips like dropping off children to school, going to the local market or visiting a relative. The longest journey to work by car was made by a professor who traveled from her home in Jalandhar to an engineering college on the highway to Amritsar, covering a distance of 16 kms.

The 12 women respondents who were car drivers hence had the most mobility freedom despite problems of traffic and parking. These problems on the road were acknowledged but the women drivers were capable of dealing with the unruly traffic in Jalandhar that was similar to that in most Indian cities of similar scale. Puja, 38, a single mother, who is an assistant professor in a management institute, lives in the south of the city in a relatively new area which is growing rapidly.

“What shall I say... the traffic is just not managed here as the traffic rules are not obeyed. Even I would have broken the traffic rules so many times. You know ..our system is like that only and the route I take for the college. The driving there is not at all safe. You have to somehow save yourself and pass through. The roads are not good, the driving is very challenging and only someone who has a very good hand in driving can be comfortable. Inside the city, parking is a bad experience.”

Despite these problems, Puja says she is thankful that the car frees her from using autos and buses which she used to earlier and considers inconvenient. There were also women who actively loved driving, despite the challenges.

“I have been driving since I was a student. I find it absolutely amazing to drive. There is lot of traffic but I love driving and roads are also OK.”, says Neena, 35, an entrepreneur..

The respondents who drove private cars did not express feeling any vulnerability as women drivers, though some attested to feeling safer inside the car, compared to being outside on the street.

As the census data shows, in India, only 5% of all working women reach their workplaces by private cars, which is the same percentage as the number of men travelling to work by car, in urban India. (See Chapter 4 A. II.. (2) Like in the rest of the world, there is a strong association between masculinity and driving which is reflected in advertisements for new models of cars. Driving a car is an assertion of independence in a traditional society, hence women car drivers in urban India invariably belong to the higher educated among

the female working populace. Within the sample, the car-driving women were all middle class professionals-professors/entrepreneurs/ managers with at least one university degree. These working women were able to afford to buy a car and the fuel required to drive every day to workplaces.

Writing with respect to a western context, Rosi Braidotti notes “*Mobility is one of the aspects of freedom, and as such it is something new and exciting for women: being free to move around, to go where one wants to is a right that women have only just started to gain*” (Braidotti 1994). This is more so in a south Asian country like India where for a woman, “being independently mobile” by having her own automobile is a visible symbol of modernity amidst patriarchy. It would not be wrong to say therefore that these twelve women car drivers had the highest capability for mobility or the highest mobility freedom, among the entire Indian sample (there was only one car owner in Trichy). They enjoyed the independence, comfort and security that comes with the private automobile. Travelling by car was hence the highest mobility aspiration for those who were seeking to enhance their mobility.

Those who travelled by two wheelers or a carpool system or an office transport such as a bus arranged by a factory for picking up and dropping workers were also users of private modes of transport. The journey to work formed the longest of the trips for all these women and this was covered to their satisfaction. Their other activities were simple trips which were more easily completed through various available modes.

2. Financial Constraints (Inhibitor)

Some of the ‘Mobility Have Nots’ belonged to the poorest among India’s economic classes. With severe financial constraints and often single income households run by the woman, they had a pessimistic view of enhancing their capability for mobility and were resigned to the existing amount of mobility and the resulting limited opportunities. These are the ‘Mobility Resigned’ among the Have Nots. The impoverished economic status of these women laborers was the constraint for their residential location, low paid employment, lack of choice in the labor market, lack of confidence to travel independently and inability to pay for whatever transport exists. Before we move to the spatial context it is important to understand their economic profile. Table 6 gives a snapshot of each of the nine workers’ income and economic status. The respondents had always been poor since their childhood in their home states having been born into homes of landless farmers.

Measuring economic status

There are various indicators of poverty in India with no consensus on one particular method being better than another. The National Statistical Survey (NSS) uses household expense and not income as a measure of poverty levels, arguing that income levels are hard to gauge. The World Bank has an international standard where the minimum level of income to be considered above the poverty line, at \$1.90 per day per capita. By those estimates, taking 1USD=Rs.70, for 30 days, the monthly per capita income below which an Indian is considered poor, is about Rs.4000. This puts almost all the respondents in Table 6 just at the poverty line.

Recent research by a non-profit group that surveyed 61,000 urban households (ICE 360 degrees) gives some indications depending on education and type of city. (Bhattacharya, 2016). According to this survey, the average monthly household income of cities of the size of Jalandhar, is Rs.19,934. As we see in Table 6, the combined household incomes of the respondents is much below this. The women’s incomes are supplemented by other household members who are also as poorly educated and also work as casual labour. For example, Kiran says with a laugh about her husband who is a mason, “[At least I can sign my name. He cannot even do that!](#)” Although we don’t have exact estimates of the second bread winner’s income, given the nature of their jobs, these households would belong to the bottom-most income quintile in India. Another indicator of prosperity is vehicle ownership. Except for one out of the nine, none of them owned a motorized vehicle, some did not even have a cycle.

There are several confirmations of the extremely poor economic condition of these respondents in the narratives as well. Sushila, a widow who had migrated just the previous year to Jalandhar following her husband’s death in an accident, was trying to piece together her life in a new place and was cash strapped. On some days the family has to settle for a few red chilies to eat with *chapattis*, in the absence of vegetables. Raj Kaur is also a widow. After her husband’s death, unable to provide for two children, she sent her elder child to live with her more prosperous brother in Chandigarh. Baby’s husband had stopped working and left both the income earning and household management to the women. Yashodha’s worked but did not give her any money and she has to sometimes borrow from neighbors if her own money ran out. Kamli, a Nepali migrant along with her husband who did two jobs, explained her indigency:

“[We both work but I can’t buy new clothes etc. as there is some loan pending in the name of my husband, which he took when I was hospitalized and we lost our child, a boy of 14 ... we need to pay it back. So, there is no question of buying new clothes for myself in case someone gives used clothes I wear those. I don’t see movies, except on TV or even go to the beauty parlor.](#)”

Amidst these economic constraints, higher mobility was not on their immediate agenda.

Table 6: Economic situation of the factory workers

Name and Education	Native/ Migrant	Income of Respondent in Factory	Other Income Earners In Household	Total Number Of Members In The Household	Vehicle Ownership
Yashodha Grade 8	Migrant from Uttar Pradesh	6940	Husband works as casual labor but does not share the money	4	None (but has built own house)
Baby Grade 4	Migrant from Bihar	4500	none	6	Cycle-used by husband
Kiran Illiterate	Migrant from Bihar	6000 (she cannot count so she estimated)	Husband-mason; also, illiterate	3	Cycle
Sushila Illiterate	Migrant from Uttar Pradesh	4500	Underage daughter does casual labor in factory for Rs.2000	4	None
Raj Kaur Grade 8	Native	5000	None	2	None

Munia Illiterate	Migrant from West Bengal	4000	Teenage son -school dropout-factory worker	5	None
Poonam Illiterate	Migrant from Bihar	5000	Husband- cycle rickshaw driver	4	Cycle rickshaw-husband is a rickshaw driver
Anju Completed high school	Native	4500	Husband-Auto drive; secondary school + Anjana gives tuitions in the evenings	6	Auto-as husband is an auto driver
Kamli Illiterate	Migrant from Nepal	5000	Husband-Factory worker+ cook in evenings in factory owner's house	4	Motorbike

3. Position as Migrants (Inhibitor)

Not all migrants are poor. In India, as there is no restriction to reside in or take up employment in any state (except Jammu and Kashmir which has some restrictions on buying property), people from all classes migrate in search of better prospects-from highly skilled professionals to construction workers. However, the intersection of poverty and migrant status compounds the constraints already experienced by the household. Poor, migrant households typically have the lowest claim to the city and the least resources to be able to access education, employment or even subsidized facilities of government welfare schemes.

Internal migration in India is because of regional disparities in economic development which itself has its roots in colonialism, as the British developed certain cities which were economically useful to them while neglecting others. The overall share of in-migrants in the population of urban areas was 35% in 2007-08 as per data from the National Sample Survey Office (NSSO, 2010). Seven out of nine factory workers who belong to the “Have Nots” category of those who are mobility-poor are migrants as indicated in Table 5. The migrants among the factory workers were from the eastern parts of Uttar Pradesh (UP) and the less prosperous eastern states of Bihar, Jharkhand and West Bengal. These states have the largest number of out-migrants while Punjab is one of the states with the largest number of in-migrants because of its industrial development. This profile of industrial workers has been recorded in other cities as well. In a study of factory workers in Jalandhar’s neighbouring city of Ludhiana, (Kunduri, 2018) over 95 % of the workers sampled were found to hail from Uttar Pradesh and Bihar while a minuscule proportion was from Nepal. These migrants from eastern India are linguistically and culturally different from the people in Punjab, making their integration more difficult. Macro-economic data such as the National Sample Survey (NSSO 2010)) shows that women migrate because they accompany their husbands and/or families to the city and not with the motive of finding employment. This was indeed the case of the migrant factory workers in Jalandhar who had all followed their husbands to this city and in one tragic case had come there when the husband had had a road accident which eventually took his life.

In a study of leather factory workers of the industrial town of Ranipet, Marius and Venkatasubramanian, (2017) observe that in industrial production in smaller urban centres, informal process of labour are

widespread, which makes the labour market extremely flexible. Labour can be hired and fired as per the requirements of the production situation. This makes it easier to hire women as women's labour is characterized by a lack of security and protection and is also much cheaper than male labour. Women, in turn, also prefer some flexibility in their work since it allows them to take care of their families. Their docility is also a reason for employers preferring women workers (Marius 2014). Thus, casual labour in factories at low wages is a job that uneducated, poor women in small industrial cities like Jalandhar are easily drawn to.

4. Land use and zoning policies creating spatial entrapment (Inhibitor)

The **spatial context characterizes the area where the respondents both live and work**. Seven of the 12 Mobility Have Nots are workers in a cast iron factory in an area called Leather Complex in Western Jalandhar. Two more are employed in a sports good factory, outside the city, on the Grand Trunk Road, a highway connecting Punjab to Delhi. A description of these areas throws light on why women's spatial entrapment in these areas constrains their mobility.

ii. Metal factory- The Leather Complex area

The Leather Complex and Sports and Surgical goods complex are located in the western part of the city. The main Industrial Area of Jalandhar is in the north but this part of the city in the west has also grown to be an important employment hub. The Leather Complex has been spread over an area of 220.00 acres in which 167 Small Scale Industrial Units have been functioning. Similarly, 142 Small Scale Industrial Units are operating in Sports and Surgical Complex which is spread over an area of 52.75 acres. (Jalandhar Masterplan, 2011). These small industries are leather and tanning units, sports goods manufacturing (as Jalandhar is the largest exporter of sports goods in Asia), hand tools manufacturing and metal works.

The sports goods factories are large establishments which provide office transport (buses) for their workers. Workers to these places, some of whom are respondents in this study, come from all over the city and are higher skilled labor. Metal manufacturing units, on the other hand, are smaller establishments which attract casual workers from nearby slums and informal settlements. These workers are poor migrants from the low income states of Uttar Pradesh and Bihar, which lie to the east of Punjab. The respondents who work as casual labor in the metal factory, marked in blue in Figure 15, live in the *bastis* or slums/colonies around the factory (red markers).

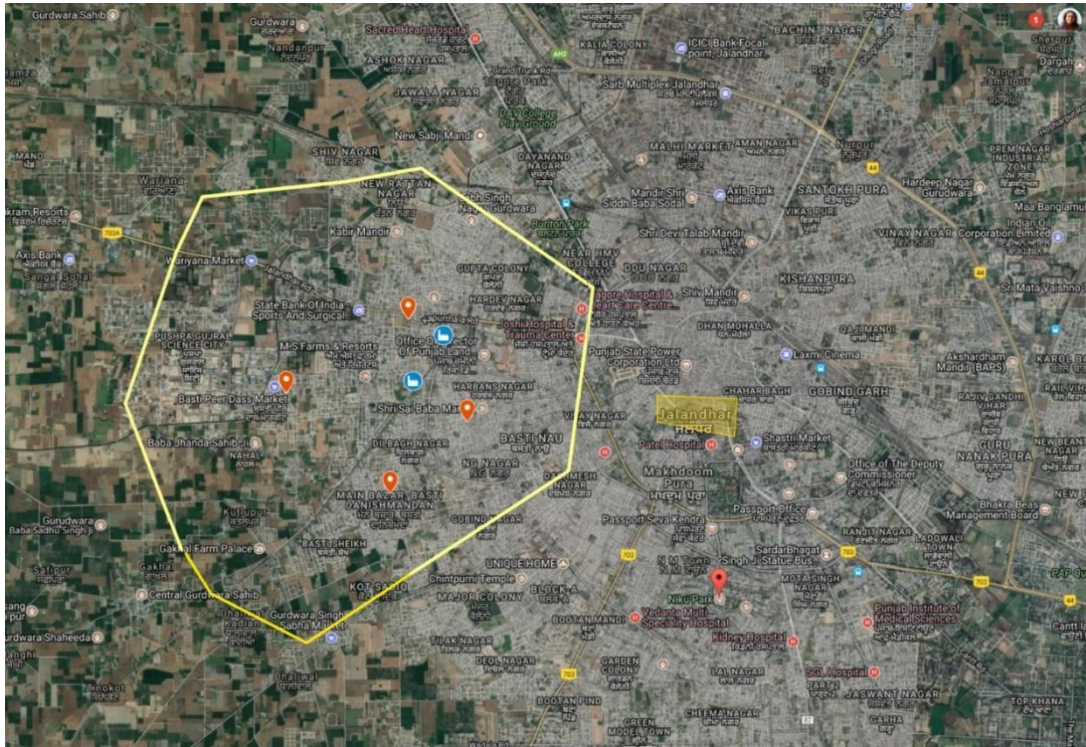


Figure 15: Map showing Jalandhar west containing the Leather Complex, with red markers indicating the bastis. The factory where respondents were interviewed is in blue.

The only modes of transportation in this part of the city, as indeed in the rest of Jalandhar, are informal

paratransit like shared tempos, shared auto rickshaws and cycle rickshaws. In the shared transit, each person pays a fare of Rs. 10. For perspective, this is above what a trip on a public bus usually costs. Bus fares in India are subsidized by the government so that they are affordable by the poor. However, as there is no bus system in Jalandhar, poor people have only the paratransit run by individual auto/tempo drivers. As the respondents mentioned, the fare of Rs.10 was unaffordable on a daily basis and hence they did not mind walking 3-4 kilometres one way to reach the factory. Their inability to afford the limited public transit available is also proved by the fact that they almost never venture out into the city, primarily because of the cost of transport. The trajectory of home-work-

Figure 16a (first): The filthy Bist Doab in the Leather Complex area. Photo: Sarabjit Singh, The Tribune. January 13, 2012.

Figure 16b (second): In a photograph six years later, the drain continues to be a garbage dump. Photo source: Punjab Kesri, April 23, 2018.



home, interspersed with a few household maintenance trips undertaken on foot, rarely ever changed. In other words, these respondents, almost all of whom are migrant labor, were in a ‘**spatial trap**.’ Flamm uses the term ‘network of usual places’ to indicate all the places an individual visits on a recurring basis, as well as the routes he or she usually takes between these fixed geographical points, thus forming a system (Flamm, 2004). This ‘network of usual places’ for these factory workers is indeed extremely limited – almost never beyond the Leather Complex and mostly never beyond the single path between home and factory, which form the spatial anchor points of their daily mobility. The parliamentary constituency of Jalandhar (west) is of the most underdeveloped areas of Jalandhar that has



in its purview several *basti* areas, including Basti Gujan, Basti Peer Daad, Basti Bawa Khel, Basti Danishmandan, Raja Garden, Raj Nagar, Chopra Colony etc. (red markers in Figure 13) *Basti* refers to “settlement” and the settlements named above are slums, unauthorized colonies and underdeveloped settlements populated by migrant laborers. This area, in which these women spend both their working and non-working lives, has substandard civic facilities and its maintenance is neglected because the settlements are “unauthorized” . As unauthorized colonies are illegal as per planning laws, the local authorities do not consider them for any development plan. Neglected development for decades even caused residents of one of the localities-the Raja Garden area to boycott the municipal elections in 2013 (Banerji, 2013).

The Leather complex with its *bastis* has a long open drain running through the centre of a broad road called the 120 feet road. So embedded is its presence in the physical landscape that locals nonchalantly refer to it as a landmark. Some respondents, for example said, “my house is close to the ‘*gandi naali*’ i.e. which in Hindi translates literally to “dirty drain”. The two photographs of the drain separated by six years (Figure 16a and 16b) show that there has been no improvement in the area. Walkers from the informal settlements either cross the drain or walk alongside, tolerating the stench it emanates. Figure 17 shows another evidence of neglected civic development of the area where sewage work went on for a few years resulting in collection of dirty water on the street in the interim.



Figure 17:
Sewerage
work on
the

Kapurthala road in Jalandhar West constituency was in progress between 2014-16.
Photo: Sarabjit Singh, The Tribune, Nov 17, 2016.

During the British era, the distinction between ‘planned city’ and ‘informal settlement’ was achieved by using planning tools such as municipality bye-laws, urban projects and schemes. (Menon, 1997). The motives behind this were several- to create an orderly, scientific, ‘civilized’ city on the lines of those in Europe and the persistent fear of the British about contamination from the ‘natives’. (Kaviraj, 1997) (Sharan, 2006) This made municipalities exclude native districts from any civic improvements. In the post-independence period, the colonial mindset of trying to create an orderly city free of slums and street vendors persists. Local authorities that slums are unsanitary places created by the poor themselves and fail to give areas like the Leather Complex, even basic amenities like water supply, electricity and sanitation. Insofar as citizens are denied basic services, they are, in effect, denied basic capabilities. Compromising access to water, sanitation and decent housing affects a household’s ability to stay healthy, get educated and seize economic opportunity (Heller and Mukhopadhyay, 2015).

Inequality in the Indian city is not simply a legacy of the past. It is produced and reinforced by the state, a result of active policies and practices that result from its institutional character (Heller and Mukhopadhyay, 2015).

The zoning of cities in recent masterplans of Indian cities dumps all factories in the periphery of the city, creating industrial areas which are highly polluted. The large proportion of blue collar workers who are unable to afford the transportation or the property rentals inside the city remain in the periphery, locating their residences close to the factory in slums or low income housing, as we saw in the case of Jalandhar. Their working as well as non-working lives are almost completely spent in the polluted environs of the

industrial zone. However, this is only true of manufacturing industries. Technology industries are also located in specially designated 'Knowledge Parks' and 'Special Economic Zones' on the periphery of the city (Local administrations and state governments give concessional land to such companies to set up units in their cities. The employees of these companies are highly skilled professionals who live in the city and commute by private transport or by comfortable office transport (taxis, air-conditioned buses). Managerial cadres of the manufacturing units enjoy the same convenience. There is thus a spatial dichotomy within employees of factories. The well-heeled come to the workplace in the less developed suburbs and return to the city in the evenings while the poor both live and work in these suburbs. Spatially, the arena in which all their capabilities are played out- (the network of usual places)-the capability for mobility, leisure, paid work, social networks and even religion are all inside the peri-urban suburb where their workplace is located. **Spatial isolation of their workplaces and the poor connectivity to the rest of the city limits their capability for mobility.** This is exacerbated by the social factor of their poverty and gender roles.

iii. Isolated factories outside the city

Apart from the metal factory workers, the case of the other two respondents, Kamli and Anju also demonstrate how the spatial isolation of their factory binds them between two anchor points of home and work. Both women work in a sports good manufacturing factory on the Grand Trunk road, connecting Punjab to Delhi. They are dependent on their husbands for their mobility because the isolation of the factory makes it underserved by para-transit modes like shared autos and tempos.

Both women work between 9 a.m. and 5.30 p.m. with a lunch break from 1 to 1.30 p.m. As the factory is outside the agglomeration surrounded by agricultural land, as shown in Figure 18, there is no possibility to combine activities like buying groceries while on the journey back home or at lunchtime around the factory, as there are no bazaars or shops nearby. Hence, groceries must be bought after reaching home, making it an additional chore to be performed.

The first step towards being able to perform activities is to be able to access opportunities offering these functionings. Working the entire day in a remote place and having no possibility to explore the city due to immobility diminishes the potential to achieve desired states of "being" and "doing". With respect to the ease of making non-work trips, the metal factory workers in the Leather Complex at an advantage compared to the two women working in the sports goods factory. Although the Leather complex is a poorly developed area in terms of roads and transport, it has several shops intermingled with houses and factories.

Mixed land use – i.e. having a mix of residential, commercial and office in the same areas, as opposed to zoning, enables the women to stop and buy what they need for the house or visit the doctor while walking back home. Mixed land use has been a characteristic feature of Indian cities but the relatively recent urban morphology of industrial zones in remote peri urban areas lacks this advantage.



Figure 18: Close up of the factory location in a semi-rural area surrounded by agricultural land with no bus stops in the vicinity.

On the positive side, all the factory workers admitted that safety was not a concern in the area and no serious incidents of harassment of women by men had been noticed by them. Some said that they had heard the occasional verbal remarks targeting them, but these, they had learnt to ignore. As daily mobility freedom was not hampered, they considered their part of the city to be a safe place. Yet, they believed that staying safe was the responsibility of the woman. Several innovative works relying on ethnographic observation, interviews, focus groups and cognitive mapping conducted in Indian cities in recent times have shown how spaces and places are engendered (Gender and Space project, 2003-2006 in Mumbai) (Jagori-UN Women project in Delhi, 2011) among others. The common theme among them is that the onus of safety and respectability lies with the woman who goes out into the street. Sushila's, a poor widow migrant woman in the iron factory said view about walking outside:

“ If I am alright, no one will do anything. If I am wrong, men will come and do something. Whether it is in UP or Jalandhar. Now see, I walk on the road, taking God's name. No one does anything to me.”

“Himmat karke jaate hain, aate hain.” (I work up the courage and go out) says Kiran. “Nothing happens here. Am I saying something happens? But in one's mind, one is scared that no one should say anything...”

Kamli who lived in another area away from the Leather Complex and walked home for 30 minutes every evening felt it was unsafe after dark. She felt scared to walk alone as there are instances of chain snatching and mobile phone theft.

It is noteworthy that in Indian cities, lack of safety can ensue because of falling off a crowded bus or contracting serious infections using filthy women's public toilets or even tripping on poorly lit roads. However, oblivious to the dangers posed by poor urban infrastructure, women's fears about being in public spaces is overwhelmingly related to sexual aggression. (Lama Rewal, 2011).

3. Social Constraints To Independent Travel – (Inhibitor)

Among the 12 'Have Nots' are three respondents who only travelled as passengers on vehicles driven by their husbands. Their dependency stems from the fact that they do not know how to drive any motorized vehicle and are not used to hailing an auto and going anywhere alone. This points to a lack of confidence in travelling alone without a male escort and over the years being habituated to such a lifestyle. The cultural conditions that constrict women's mobility limit how far they can travel and their control over the social processes that determine their lives.

These women belong to higher income groups as their households have more than one vehicle- a car and at least one two wheeler. The women themselves are self-employed -having set up their own business or as 'family workers' in the enterprises which are essentially run by their husbands. The fact that they work from home (or less than 200 metres from home in one case) is not a coincidence. By working in a family run shop across the street or downstairs, the journey to work is virtually abolished and for all other trips, they are escorted. **However, they are hopeful of improved mobility and through that access to potential functionings.** They envisage that it may be possible to someday move up the mobility ladder to private motorized transport. It is for this reason they pick up the image representing the functioning "Being independently mobile" as a potential "Being" that they want but currently lack.

Reshma, 42, is a family worker i.e. she works in family-owned a sari shop in a bazaar, across the street from her home. She has three grown up children still staying within the same household-a daughter of 22 and two sons of 21 and 19. The children have two wheelers between them and the husband drives a car. Between them, Reshma manages to get escorted to the few places that she goes to. She does not, however, view anyplace in Jalandhar as being unsafe, as she is always accompanied by a family member. Travelling only with an escort allows Reshma to go to places that may be considered unsafe if she was travelling alone. Ironically, this widens the number of places accessible for women who do not travel alone.

Anjali, 44, lives with her husband and unmarried sons in their early twenties. If she needs to travel anywhere, she asks one of her family members. She wishes to drive a car, she says, explaining her selection of the image of a woman driving .

" I wish to be independently mobile so that I don't have to keep depending on someone to take me to places."

Neela at 29, is much younger than Reshma and Anjali. She runs a small shop selling trinkets and cosmetics for women, on the ground floor of her two-storeyed house. The household has a car and a two wheeler. From Monday to Saturday, her day is spent going up and down between the shop and the home. She undertakes no outside trip. Her husband, a gym instructor in a local gym, does all the outside trips including buying groceries and supplies for the shop. On Sundays, when her shop is closed, she goes to visit her mother few blocks away. Her husband drives her there too on his bike, stays there and both return home later. Hence there is no opportunity for Neela to step out using her scooty, which she knows to drive. She also needs to ask her mother in law for permission to go anywhere.

In all three cases, although resources in the form of multiple vehicles are available in the household, these women are unable to convert them into the valued functioning of independent travel, owing to socio-cultural factors that frown upon a woman's unaccompanied travel. The Indian Human development Survey conducted a longitudinal study of 21,245 women aged 15-49 years at the initial survey, who were interviewed during both rounds of the survey in 2004-05 and 2011-12. (Subaiya and Vanneman, 2016). One of the objectives of the study was to evaluate women's ability to travel alone and whether they need to take permission from someone in the house before stepping out. Cultural attitudes about acceptability for women to leave the home by their own decision, and whether they need to be accompanied on these trips, vary by region within the country (Pande, 2016).

The survey found that over 70% of women surveyed needed the permission of an elder family person or their husband to visit a health centre or make a social visit to a relative or friend (Figure 19). Within these, nearly one-third could not go alone for these trips. The number of people needing permission to go to a grocery shop was lesser at about 60% and one-fifth of these women could not go to the shop alone. The survey was, however, done both in rural and urban settings. The IHDS results show that education, urbanization, and women's employment all erode patriarchal gender relationships (Subaiya and Vanemann, 2016).

Challenges posed by socio-cultural norms to women's mobilities have been explored in other studies. Fernando and Porter (2002) caution in their introduction to a collection of case studies on women and transport in the developing world, that a focus on women's transport burden is not enough.

Percentage of women who need permission to visit.....

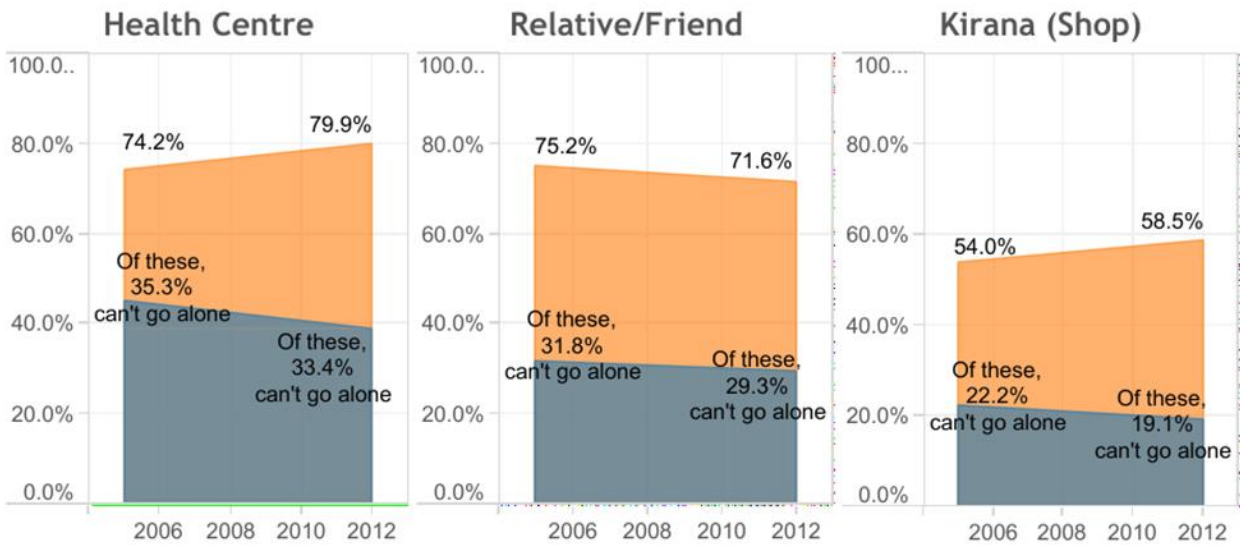


Figure 19: Indian Human Development Survey’s results of women’s ability to travel alone. Source: India Spends.

The cultural conditions that constrict women’s mobility limit how far they can travel and their command over the political and social processes that determine their lives are equally important. Although caste was not a dimension that was sought in the interview with the respondents of this study, the restrictions on north Indian upper-caste, (and by extension upper class) women’s mobility outside the home for reasons of family honor (*izzat*) have been well documented (Chen [1995] 2001; Chakravarti 2003). Internationally too some studies point to ways in which the cultural struggles over gender norms influence the causes and consequences of mobility. For example (Uteng ,2008) for non-western migrant women in Norway and (Shin, 2011) for Korean Christian immigrant women in Los Angeles. As Sen writes, so long as a person’s capability set was determined by social arrangements in which one had no say – there was no real freedom.

Research Question 3: Do Women Who Have Mobility Also Have Spatial Accessibility?

I. Evaluating Spatial Accessibility using the Alkire-Foster counting methodology

We use the counting method described in the chapter “Research Design and Methodology” Part B. Section VI. , to evaluate the Spatial Accessibility of those who aspire to a different mode of transport from what they are currently using. In Jalandhar, there were 19 such respondents. The Accessibility Deprivation Scores for these 19 respondents have been derived, according to the logic of the multidimensional counting methodology previously described. Table 7 gives the scores of these respondents for each dimension.

Time: Column 3 gives the time taken on the journey to work (both ways). The average value is 69.4 minutes. This becomes the deprivation cut off for the dimension of Time. All respondents whose duration of travel is more than 69.4 minutes are considered ‘deprived’ on this dimension. In column 4, these respondents are allotted a score of 1 while those who have a journey duration < 69.4 minutes are allotted a score of 0.

Number of trips comprising the journey: Column 5 gives the number of trips the respondent makes per day-both work and non-work. Each trip is considered to be from one origin point to a destination point. For example-Home to Bus stop is one trip. The bus journey to the point nearest to workplace is the second trip. The walk from alighting bus stop to workplace is trip number 3 and so on. Although overall there are more trips for those using public transport than private vehicles, there could be exceptions. For example, Rachita (no. 10) has 6 work-home trips because she holds multiple jobs and has a complex daily tour with home being an anchor point she returns to between jobs. The average number of trips is 5, which is the deprivation cut off for this dimension. All respondents who make more than 5 trips, are deemed deprived on this dimension and highlighted in column six.

Distance to Transit stop: Column 7 gives a value depending on the distance to transit stop for those using buses or autos. As the UN Guidelines for Sustainable Transportation recommend that bus stops should be 500 metres or 5 minutes walking distance away from a reference point, we have taken this to be the best case scenario. Hence, when the distance to the transit stop is between 0-5 minutes, we assign a score of 1, 5-10 minutes of walking, the score is 2 and more than 10 minutes it is 3.

Due to the absence of public transport in Jalandhar, only three respondents qualify to be assessed on this dimension who use trains and inter-city buses that travel out of Jalandhar city. On the basis of the scoring criteria above, the average value is 2.6. Here, only the three respondents using public transport are considered. Among the three, those respondents scoring above 2.6 are deprived on the dimension of number of transit stops.

Quality of the journey: Column 9 records the dissatisfaction with the journey, irrespective of the mode of transport. The six aspects on which dissatisfaction is measured are:

- i. Comfort b) Need to travel for long c) Connectivity to places d) Timing uncertainty
- e) Cleanliness inside vehicle f) Safety and security

Column 9 mentions which aspects the respondent finds unsatisfactory. This is based on the question in Part 2 of the questionnaire where respondents are asked to rate their public transport journey on a scale of 0-5 on aspects a, b, c and d. If they have given a rating of 3 or below, it is taken as dissatisfied. 'Uncertainty of schedule' and 'Need to travel for long' was not rated by the respondents. These aspects have been included as some respondents expressed their opinions about these difficulties. If the respondent has expressed dissatisfaction on any one of these aspects, a value of 0.5 is given. For two aspects the value becomes 1 and so on. The average of this column is used to assign scores in column 11.

Accessibility Deprivation Score: Column 12 is the sum of the deprivation scores in columns 4, 6, 8 and 11 and hence is the Accessibility Deprivation score. **The average Accessibility deprivation Score for Jalandhar is 1.3**, for the 19 respondents who had poor accessibility and were aspiring to enhance their capability for spatial access.

Thus, **the multidimensional Accessibility Deprivation Score is arrived at by taking into account the duration of the journey, number of trips undertaken, distance to transit stop and the dissatisfaction expressed about the quality of the journey.** Based on these parameters, all respondents who obtained an above average accessibility deprivation score are considered the most deprived of the Capability for Spatial Access. In the last column 12 of Table 7 below, **there are six respondents (highlighted) whose score is above average and five with a deprivation score above zero which means they have some extent of accessibility deprivation, according to this method.** This does not mean that the remaining have ideal spatial access; the fact that all 19 have expressed a desire for another mode of transport is evidence of their view that their current accessibility has potential for improvement.

In Table 8, the Capability for Spatial Accessibility of the seven most 'accessibility deprived', is summarized using the framework of resources and conversion factors that determines an individual's capability, explained in Chapter 1 on Literature Review, Section C (III).

Table 7: Accessibility deprivation of Jalandhar respondents

1 Mode of Transport used in the Journey to Work	2 Name	3 Time taken on journey to work to+ fro	4 Score	5 Number of trips within the journey	6 Score	7 Distance to transit stop	8 Score	9 Dissatisfaction with Comfort /duration of trip/ timing uncertainty/ cleanliness/ safety	10 Journey Quality	11 Score	12 Accessibility deprivation score
1. Combination-Public and Private	Rani	110	1	6	1	3	1	Comfort, timing uncertainty	1	1	4
2. Combination-Public and Private	Anisha	119	1	9	1	3	1	Comfort, safety	1	1	4
3. Combination-Public and Private	Sheetal	174	1	6	1	2	0	Comfort, timing uncertainty	1	1	3
4. Private-Car/Car Pool	Amita	98	1	5	1		0	Duration of trip, safety	1	1	3
5. Private-Car Pool	Indira	89	1	7	1		0	No remark	0	0	2
6. Auto/Cycle Rickshaw	Bhavya	32	0	5	1		0	Comfort, safety	1	1	2
7. Combination-Public& Private	Simi	60	0	4	0		0	No remark	0	0	0
8. Private-Office Transport-Bus	Renu	104	1	4	0		0	No remark	0	0	1
9. Private-Office Transport-Bus	Anita D	60	0	6	1		0	No remark	0	0	1
10. Private-Two Wheeler	Rachita	65	0	6	1		0	No remark	0	0	1
11. Auto/Cycle Rickshaw	Minty	64	0	6	1		0	No remark	0	0	1
12. Private-Office Transport-Bus	Kinar	60	0	4	0		0	No remark	0	0	0
13. Combination-Public and Private	Deepika	60	0	4	0		0	No remark	0	0	0
14. Private-Office Transport-Bus	Krishna	40	0	4	0		0	No remark	0	0	0
15. Auto/Cycle Rickshaw	Arti	30	0	5	1		0	No remark	0	0	1
16. Private-Two Wheeler	Sukhi	30	0	2	0		0	No remark	0	0	0
17. Combination-Public and Private	Lashwin der	45	0	4	0		0	No remark	0	0	0
18. Non Motorised	Sanchita	60	0	4	0		0	No remark	0	0	0
19. Private-Two Wheeler	Joyita	20	0	2	0		0	No remark	0	0	0
	Average	69.4		5.0		2.6			0.3		1.3

II. Viewing Deprivation of Spatial Access through Conversion Factors

Table 8: Summary of accessibility constraints -all 6 cases

	Personal Conversion Factors	Social Conversion Factors	Environmental Conversion Factors
<p>Rani, 35; Sheetal, 29, Commute between city and outside agglomeration. School teacher in a rural government school/ Private company in Jalandhar 34 kms per day/ 180 kms per day. 1 hour 40 minutes/ 3 hours Two-wheeler + bus/ Car + Train + auto</p>	<p>Inhibitors: Does not want to quit her job because government jobs are hard to get and offer financial security. Returned to workforce after a break for childcare</p>	<p>Inhibitors: Fear of women returning after a break that they should quickly rejoin the workforce taking whatever job they get. Enablers: Often her woman colleagues give her a ride to the nearest bus stop, saving her the 15-minute walk.</p>	<p>Inhibitors: Remote location of workplace. Lack of transport provided by the state for teachers coming to teach in rural schools. Lack of a public transport system</p>
<p>Anisha, 38, Amita, 32, Indira, 31 Commute from city to outside agglomeration. Work in a private University 15 kms south west of Jalandhar agglomeration. 30-32 kilometres per day; 75 to 90 minutes. Two-wheeler+ Bus; Carpool; Carpool</p>	<p>Inhibitors: -Cannot use office bus as school timings are later than office transport timings. -Complete dependence on presence of mother/mother in law for child care -Office bus does not come close to home but on main road</p>	<p>Inhibitors: Strict timings at workplace where card must be punched at given hour, so always a rush to reach on time.</p>	<p>Inhibitors: Remote location of workplace on highway where one cannot ride a two-wheeler as there is a high risk of accidents.</p>
<p>Bhavya, 33. Commute within city English language trainer 5 kms per day 25 minutes Auto</p>	<p>Inhibitors: Complete dependence on the shared auto. Does not know to drive. Single car in the household; husband has a longer commute so takes the car.</p>	<p>Inhibitors: The presence of male co-passengers sitting too close which makes her uncomfortable</p>	<p>Inhibitors: Lack of public transport in the form of buses within the city inhibits her ability to make work trips later in the evening and to access non-work destinations Enabler: Easy availability of shared autos. Nominally priced</p>

III. Factors affecting spatial accessibility

On the basis of this analysis, it is possible to identify certain factors that affect spatial accessibility of urban working mothers in Jalandhar. These have been classified as **Inhibitors** and **Enablers** to accessibility.

1. Lack of Public Transport (Inhibitor)

The recurrent barrier in the narrative of these cases, (which also affects women with lesser Accessibility Deprivation Scores) is the lack of public transport in the Jalandhar urban agglomeration. Three of the women-Rani, Anisha and Sheetal- who do not drive their own car are obliged to commute to remote places outside the agglomeration for their work. They face challenges of interchanging modes, difficulty in parking, traffic blockages on highways, lonely stretches and a high risk of accidents. In the absence of a direct connection, the journey to work is time consuming, tiring and inconvenient.

Sheetal, 29, travels from the adjacent town of Amritsar to Jalandhar city every day where she works in a private company from 9.30 a.m. up to 6.30 pm. She commutes for a total of 180 kilometres per day, taking a little more than three hours to accomplish the trip. While reaching the railway station from home and again in the evening from office is a short trip, it is the long journey in the evening which she makes by train, that is fraught with uncertainty of timings. As there is no local train system in India (except in Mumbai) commuters from one town to another in any other part of India have to hop onto a long distance train.

In Sheetal's case, this is the train going from Amritsar to Delhi. Describing her previous day's schedule in the interview, Sheetal explained that she reached the station at 6.40 p.m. The scheduled time of the train was 6.45 p.m. However, it arrived at 8 p.m. and by the time she reached Amritsar, it was 9.10 p.m.

“When we check at 6.30, the update on the internet says 6.45. But when you reach the station it will say 7. At 7 it'll say 7.30...We can't plan ahead about when to reach the station. There's a waiting room in winters it is not such a problem but, in the summers, the fans are not proper, it's not comfortable. Without air conditioning it becomes hot.”

In long distance trains, to travel in the AC compartment, a daily pass is needed which is expensive. So, even in the sweltering heat of the Indian summers, she has to travel in the non-Ac class. According to Sheetal, safety in the station and inside the train is not a concern, no matter how late it gets because there are many co-passengers and police. But the discomfort due to the waiting and journey quality is considerable.

In India, the railways are handled by the central ministry for railways with state and local governments having no influence on trains and schedules. Hence Sheetal's problem of uncertain timings of the long distance trains she travels on does not have easy solutions. However, the need to take trains only arises because in Punjab there are no good buses between adjoining towns. Sheetal explained that buses between Jalandhar and Amritsar are even more uncertain and inconvenient taking almost 2.5 hours to reach the other side as the road from Jalandhar to the Beas river which cuts through the route, almost at halfway mark, is

in poor shape. If an efficient bus service existed between Jalandhar and nearby cities where several residents of the city are employed, it would save them from finding private alternatives or suffering difficult commutes every day which are time and energy draining.

Rani’s commute to the rural government school outside the agglomeration itself consists of three trips as shown in Figure 20. Walking is not easy for her as she had a serious accident three years ago. (See box 1)

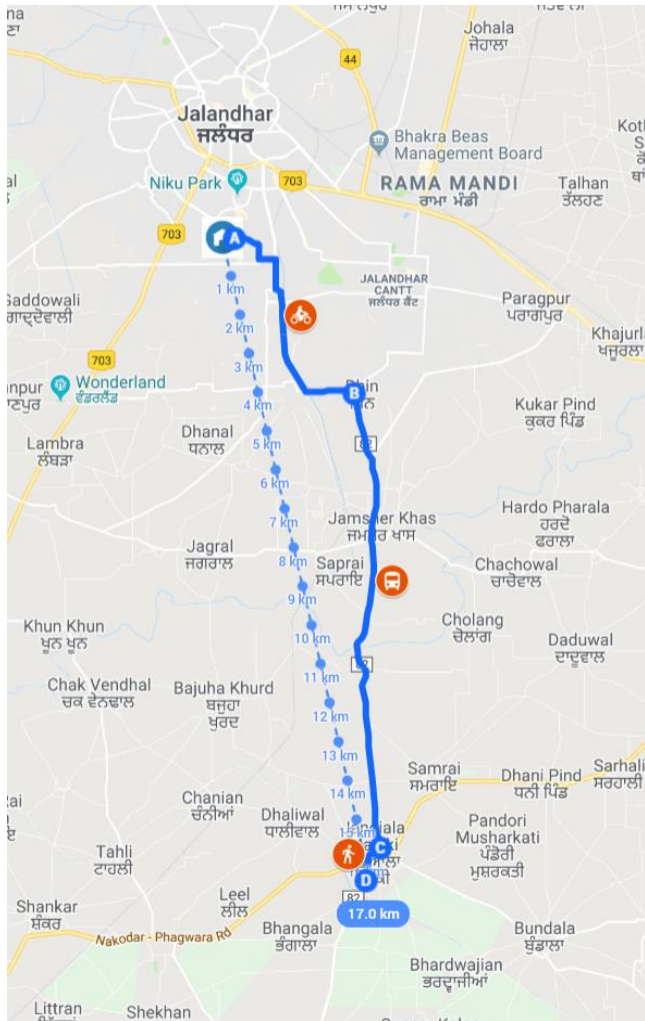


Figure 20 showing Rani’s journey to work of 17 kms one way.

A= Home B=Bus stand where she parks her scooty
C= Bus stand in village where school is D=School

Home	Trip 1	Village 1;	Trip 2	Village 2	Trip 3	Workplace
	by Scooty	Park scooty;	by bus		by foot	
		wait for bus				

Box 1 : Rani's description of her accident

One winter day I was going to school; the visibility was very poor and a car hit her scooter. My hip and thigh bones were broken and I was in immense pain. I myself made phone calls from there as I was fully conscious but in pain. I told someone to take out my phone from my scooty. I called up school to inform I will not be able to come as I had met with an accident then I called up my husband and he came to take me from there. My parents rushed from Hoshiarpur. After 4 months of accident I had bones grafted as my thigh bone had almost come out. After 1.5 months of that I had started walking with a stick. . I am grateful at least I am able to walk and alive now.

For a long time I was using walker and now I can get into the bus but to get down it is difficult. I have plates in my thigh and hip and in case I fall they can even come out it is that scary.

While these cases are of working mothers going from the city to outside the agglomeration to work, the interesting case is of Bhavya who faces accessibility issues despite living in the city centre and working within 5 kilometres from home. The reason for this is her complete dependence on the shared auto, in the absence of any buses. Her family has a car but Bhavya cannot drive so her husband takes the car, as he is an accountant whose office is much further away. The shared auto is Bhavya's only way to access places. Although this mode of paratransit is nominally priced at Rs.10 per passenger and fairly easily available, at least from the main roads, using it every day can be exhausting. The bumpy roads, which are almost ubiquitous in Indian cities can cause backaches, which Bhavya says she has acquired. Unlike the full fare, single passenger auto which drops a passenger to their doorstep, the shared auto runs only on main roads and has fixed stops where it drops and picks passengers. It can also be often overcrowded making it uncomfortable for women passengers (Figure 20). Jalandhar has almost no single passenger autos. Hence for those who are dependent on public transport for intracity travel the shared auto is the only option. The proximity to male passengers can also make some women uncomfortable. (Figure 21) As a daily user of shared autos Bhavana narrates her experience as follows:

“I avoid wearing certain clothes. Like jeans with short tops... just keeping in mind that I have to commute by shared auto. If there's a meeting in the office and you are nicely dressed, the ten-minute ride in the auto becomes uncomfortable. People touch you as if by mistake and say « oh, I'm sorry! »I am reluctant to take an auto in the evenings... »Those sitting in front along with the driver they keep rubbing their back with you as there is no partition in between. Maybe it can't be called eve-teasing⁵ but it is bad behavior of people.”

5

⁵Eve teasing is an Indian term for 'mild' sexual harassment.



Figure 21: Inside a shared auto. Source: Google images

2. Remote Locations of Workplaces with poor access (Inhibitor)

The rural school where Rani is a teacher is located in the sub district of Jalandhar east. According to the Ministry of Human Resources school location mapping site¹, there are 10 other government schools in and around the area. There is a privately arranged taxi system with women teachers going from Jalandhar, which is indicative of the fact that a transport demand exists which is not being responded to.

The private university where three women with high Accessibility Deprivation scores -Anisha, Amita and Indira (no's 2, 4 and 5 in Table 7) is relatively new, having been set up in 2005. It claims to be the largest single-campus private university in India with over 24,000 students (Dogra, 2010) and is an important employment centre, particularly for women. The University lies southeast of the agglomeration, in the middle of a highway, 15 kilometres from the Jalandhar central bus terminus and 3 kilometres outside the municipal limits of the city on a highway.

Both Rani's school and the private university require travelling on highways where traffic is heavy and unruly and there is a high risk of accidents especially for those on two wheelers. Amita, (number 5 on Table) who also goes to the same university shown in the above figure, can drive a scooty. However, she prefers to do a carpool rather than take her two wheeler to work, since the highway is notorious for accidents and she has already suffered one accident on the scooty near her house.

“Some people do come by scooty but it's not safe. In a week there are a minimum of four accidents that I see on the highway. Traffic rules are not followed. Anyone can overtake from anywhere. Wearing a helmet is compulsory only if there is traffic police around. Rich, underage kids get licenses and drive rashly...”

Rani is still facing the repercussions of a serious accident on the highway (Box 1) that happened two years ago. Talking about how she feels negotiating this remoteness area every weekday, Rani said:

“Roads between Dhina and Jandiala are bad and bumpy but better between Dhina and Jalandhar. It’s also crowded- there is all kinds of traffic on this road. I don’t feel safe on this route, as a woman. It is lonely and surrounded by fields; so lonely that even if someone kills you and throws you no one will get to know.”

The inaccessibility of the job site along with the fact that several women are employed in these places is indicative of lack of comparable employment opportunities within the agglomeration limits. The problem is compounded by the poor access to these places which impacts women more due to their need to return home as quickly as possible to begin their “second shift” of managing the home front.

3. Growth of new residential colonies without basic services (Inhibitor)

As urban sprawl pushes the city outwards, in southern Jalandhar, areas like Urban Estate and some colonies in the Jalandhar Cantonment (See map in Figure 5) have grown as a response to population growth. To meet the demand for housing, the Department of Housing and Urban Development of Punjab has established two Urban Estates in Jalandhar, providing plots of variable sizes for building houses. In the newer colonies where density is lower, rickshaws and autos do not ply in the interior streets. Office transport too comes to the main roads of these colonies so that people in the inner streets have to walk 10 to 15 minutes to reach the pickup point, in the absence of any connecting transport. To avoid this, working women who cannot afford to reach office even a little late (see next point) opt for private transport options like the carpool.

4. Rigid timings of workplaces (Inhibitor)

Inflexible work timings and penalties imposed on latecomers and absentees amplify the problem that the working mothers face in accessing their workplaces and in their ability to balance home and work.

In the private university, which is Anisha’s employer, all staff, including faculty, have a card punching system of attendance. Every day, there is a rush to punch the card at the designated hour. Delays are monitored and are penalized in the form of cancellation of a corresponding number of paid holidays. This information was provided not only by respondents but by other staff on the campus as well.

Indira (number 5 in Table 7) recalled how until recently, she would leave her baby in the creche facility provided on campus by the university and hurriedly walk the considerable distance from the creche to her office building, as the campus is a vast 600 acre area. The desperation was to punch the card before the designated time to avoid dealing with the consequences of late coming. The stress of doing this every

morning became so much that she stopped using the campus creche and started leaving her baby with a baby sitter near her home.

The complications in the trip that Rani undertakes every morning lead to her often reaching late. On some occasions, she has been late on the day when higher authorities make surprise visits to the school she works in to check for punctuality. Externalities such as civic issues and traffic jams contribute to the women's stress of reaching office on time. Work timings were completely un-negotiable in the factories with monetary penalties for late coming.

5. Mothering duties (Inhibitor)

Some women's accessibility was constrained because childcare needs prevented them from accessing easier modes to reach their workplace, owing to the incompatibility of their child's schedule and the alternate transport schedule. Their complex and precariously set up child care arrangements needed to be prioritized over their own comfort.

The University on the outskirts that employs three of the respondents offers office transport. Several buses pick and drop employees from Jalandhar but the pick-up timing is earlier than school timings and departure in the evenings is also late as it waits for everyone to board. While this arrangement is convenient for male faculty, it is not so for temporally constrained working mothers. Unable to use office transport, they depend on private arrangements like carpools and combination of personal and public

Potentially, both Amita and Anisha could use the office bus provided by the University. However, they were constrained by the fact that the office transport's timings were earlier than their young children's school timings. Amita had to be there when he left for school, despite her mother/mother in law and husband being present. She used a private carpool system with her colleagues, which started after the child left for school.

In Anisha's case, every day, her mother in law came by auto from central Jalandhar at 7.30 a.m. to take over the caring of the child so that Anisha could leave for work. By that time the office transport has already left and it is also too late to go by the carpool. She then drives a scooty upto the central bus terminus 15 minutes away, parks the scooter and climbs onto an intercity bus.

While the lacunae in transport infrastructure affect men and women alike, the above cases also bring forth how the identity of the respondents as a "working mother" interferes with their mobility choices and hence their accessibility to their workplaces.

In case of Sheetal, who comes from the city of Amritsar to Jalandhar, her role of a mother contributes to her constraints, at least indirectly. In 2014 she delivered a baby; took a break from paid work in 2015 and returned to the workforce in 2016. At the time of the interview, she had joined her job only three months ago. While the need for income is one reason to take up a job even if it involves a long distance commute,

another compelling factor is also the pressure women face to reenter the workforce quickly after a break for childbirth. The length of the break affects the re-entry process with longer breaks impacting career choices more. (Panteli, 2006). In India, except for some multinationals who have recently been more welcoming of women returning to the workforce, typically, organizations are wary of hiring mothers who are returning after a maternity break as they are doubtful about their commitment to work. They would rather hire men, of whom there is no shortage either. Besides, as the head of a top recruiting firm explained, (BW online Bureau, 2015) unlike the West, in India it is common for employers to probe the marital status and family situation from a woman seeking a job and use this information to discriminate against the candidate. All of these barriers would be magnified in smaller towns like Jalandhar where outlooks and attitudes are more conservative than in big cities. For these reasons, which stem from women-unfriendly labor market policies, women like Sheetal would value the job and overlook difficulties in commuting.

6. Inability to drive (Inhibitor)

Apart from these six cases highlighted in Table 7 who had high accessibility deprivation, the group of Accessibility Enhancers seeking to improve their accessibility consists of 13 other respondents. **These women all live in the city and work in the city and hence did not have problems to access their workplace as the distances traveled were much shorter.** Despite the inadequate public transport through the use of auto and private transport, they reached work destinations without any noteworthy problems of accessibility. Yet all of them wanted a 'better' mode of transport from what they had. *This is not so always in terms of ownership of vehicles but in terms of being able to use the mode that was already there in the household.* The woman was unable to access the vehicle as she lacked the skill to drive it confidently but she sought it as a potential functioning. The lack of driving skills was a social rather than a personal conversion factor that stood as a barrier between the women and the access to the transport aspired they aspired for. In some cases, there was active discouragement by the husband while in others it was expressed as concern for the woman's safety on the road.

Having picked up the card "driving a car" as a potential doing, Amita, explains that she had learned to drive but would like to brush up her skills again. Her husband felt that even if she drove safely there is no guarantee that others would, so it was better to continue the present system of carpool.

Deepika, 40, who travels either with her husband or by auto and works as an etiquette trainer in a private enterprise. She is the mother of two children 10 and 5 and lives in a large joint family. Deepika described herself as an anxious person at the start of the interview. She attributed her anxiety to work and said that she also had hypertension. According to her, her anxious nature was the reason for not using the scooty and car of the household.

"I know how to ride scooty, but my husband will not allow as he feels I am an anxious person and there can be an accident due to that. My husband does not let me drive....I know how to drive, and I want to drive but due to lack

of time (to practice) and no permission from my husband I am not able to. But if I get the time and practice having a cool temperament I can drive in a week. Yes, the situation can change once my mind cools down and I get time.”

The freedom women had to use the family car can be viewed in terms of “positive freedoms” and “negative freedoms”. Negative freedom is not being coerced or restrained by another person in doing something desired and, on the other hand, positive freedom is the conviction that one can do as one pleases within the limits of that other person’s desire to do the same’ (Patterson 1991, pp. 3). In this context, some women experienced negative freedom while others did not have positive freedom to drive. As capability is conceptualized as a positive freedom, we could say their potential for enhancing their capability for access, was restricted by the social mores of male dominance over motorized vehicles of the household. Not all women are discouraged though. Rani’s father in law had been urging her to learn driving and she intended to pursue it in the following summer.

7. Presence of informal para transport (Enabler)

For the extremely poor, (such as the Have Nots, described in the previous section) a daily one way fare of Rs.10 in a shared para transport service such as an auto rickshaw is too expensive. However, for the middle class, (i.e. SEC A, B and C in Figure 12) this presents a low cost option. Its wide availability, especially within the city, also makes it easy to access. Although lacking in intracity buses, there are several intercity buses that start from the central bus terminal and carry passengers to adjoining towns outside the agglomeration. These buses are run by the Punjab state transport and by private operators. As there are plenty of buses going in each direction, for women like Anisha who use the bus, it is possible to choose one where she can get a seat. The parking of two wheelers at bus terminus is also nominal costing only Rs.10 for the whole day. Hence it is possible to park one’s private vehicle at the bus terminal and proceed by bus from there, the way Anisha does. Thus, the market’s response to the lacunae in public transport in Jalandhar has enabled working women to access remote workplace locations that they would not have been able to in its absence.

Research Question 4a: How does the capability for mobility affect other capabilities required for well-being?

To answer this question we rely on the responses to the Game of Cards. In the following sections of this chapter, we deliberate on how the capability for mobility expands or contracts a working mother's other capabilities, with the help of one or more illustrative examples from the sample.

1. Capability for Paid Work

All the respondents in Jalandhar do have the capability for mobility albeit in varying degrees and through various modes, through which they reach their work destinations. Those who work from home also have the capability for mobility used in their non-work trips. Here, we illustrate one case where the woman's capability for paid work is heavily dependent on the capability for mobility.

Rasna is a radio jockey and television newsreader who holds three different jobs, and twice a week it becomes four jobs as she does a special program in another TV station. She crisscrosses the city from 5 a.m. to 10 p.m. every day from a radio station where her program begins at 5a.m. in the morning to at a local radio station. During lunchtime at 1.30 p.m. she goes home and leaves at 4.30 p.m. for another radio station. From there at 8.p.m. she leaves for a TV news channel where she stays till 10.30 p.m. and then leaves for home. On two days of the week, she anchors a program in a state run TV channel, so on those days, she flits in and out between four offices. Rasna points out that her two wheeler is the reason for her to be able to be hyper mobile, as meet her professional demands. She credits her Activa for being able to reach all her workplace destinations on time because the nature of her jobs requires her to arrive promptly to begin the program at the exact time.

ii. Working women's use of two wheelers in India

Seventy percent of all personal vehicles in India are two wheelers (Pai et al, 2014). In smaller cities of 1-2 million population, two wheelers are used by 30-36% of the population. The reason for this is that in cities of this size, the average trip length is estimated to be 4.7 kms. (Wilbur Smith, 2008). Since the 1980s, more and more women in smaller Indian cities have taken to the convenience and independent mobility offered by the two wheeler. Within two wheelers, while men prefer motorbikes most women opt for scooters, which are typically gearless. In the past five years alone, the share of scooters in the overall two wheeler market in the country has risen from 20% to 33% (Thakkar, 2017) indicating more women taking to this vehicle as a mode of personal transport. Several of the largest two-wheeler manufacturers in India have marketed two wheelers, most often scooters, specifically oriented towards women. The Indian government provides loans for two wheelers to women at a special interest rate. Women take to scooters easily as they are cheaper than using public transport, enable door to door travel, easy negotiation through traffic and easy parking. A two wheeler is ideal for "trip chaining" (combining many trips together) as a woman can run a short errand and

quickly move to the next destination without worrying about connectivity from one point to another, which is inconvenient in public transport (iTrans, 2009). The mobility afforded by the easy access to two wheelers, at least by middle class working women, has enabled women like Rasna to handle multiple jobs.

In the case of the poor women working in factories in western Jalandhar described in section 2, the jobs dictated the location of their residence. None of the women migrated on their own. They came from their home states along with their husbands, some of whom eventually gave up working or died and left the women to be single wage earners. Spatially trapped in the area where they both work and live and financially unable to afford transportation costs, their mobility is severely restricted to locations they can access on foot. Here, the capability for paid work sets the limits for the capability for mobility. However, if there had been easier ways of accessing other places in the city, they may have the opportunity to find other jobs which maybe more centrally located and improve their leisure and social network opportunities which are also restricted because of mobility, as explained in the point B below.

2. Capability for Leisure and Social Networks

Different factors intersect to restrict mobility and hence a woman's capability for leisure and development of social networks.

i. Leisure outside the house

a. Dependence on others

Not having a private vehicle or constant dependence on others for their mobility is a barrier to their ability to visit relatives who live further away in the city or to visit a temple or place of interest. For example, Reshma, 42, who is dependent on her husband or grown up children for mobility, has always wanted to see the printing press where newspapers are printed and distributed. But, not being independently mobile, she has never had the opportunity to do so. Family circumstances like children being in the important last year of school or the husband being busy businessmen unwilling to leave the city had prevented some middle class respondents from taking a holiday since three or four years. The lives of the working mothers in the interim had been a routine of domestic and professional duties within the city.

b. Poverty

Poor factory workers avoided non-essential trips because of the expenses that would be incurred on transport. "If we go somewhere, obviously we will have to spend.." one of the women reasoned. The ideas of going elsewhere in the city that I ventured to put forth were met with befuddlement. Sushila, a widowed migrant, perhaps the most indigent among them asked:

“I don’t know how the bazaars look. I have never been anywhere. I am still settling down here. I don’t even know the language. I use the same road to go to work and same road to come back. I walk with a couple of other women. ...*Aur kahaan jaana hai? Where else should I go?*”

Low income women went on yearly trips to meet family in other towns or to visit particular temples. There is no other destination like beaches or hillsides, that these women wanted to visit purely for the sake of tourism. If a trip was to be made out of town, expending resources, it was to be either to meet a relative living in another town or to a pilgrim site that they have long wanted to see. The capability for religion and the capability for leisure were thus interlinked.

Poverty restricts mobility, especially of single earning women. As mobility costs, and is not deemed essential, no trips are made unless they are unavoidable. Access to leisure opportunities in the city is thus almost non-existent for the transport excluded. Except for a planned trip to visit the Golden Temple in Amritsar once a year or to Chandigarh to meet her other child, Raj Kaur and her teenaged daughter, travelled nowhere by paid transport. “*What will we eat if we keep roaming around?*”, she asked. Yashodha, whose husband had stopped contributing to the household financially, stated in a matter of fact manner, that she had last gone on a vacation roughly 15 years ago.

Poornima’s husband plies a cycle rickshaw, but the family does not use the vehicle for leisure trips. The husband fears the rickshaw will get damaged if everyone sits in it together and then he’ll have to pay for repairs causing additional expenditure. Her three small sons return home after extra study classes and do not step out after that. The three children play amidst themselves in the house and the routine does is unchanging even on Sundays. Hence, despite access to a vehicle at home, poverty does not allow them to use the vehicle to be more mobile and expand their capability for leisure. Being constantly mobile, Poornima’s husband bought all the household groceries too on one of his stopovers. Consequently, Poornima did not need to make even these small trips to nearby vendors, confining her even more to the house and factory and the road between these two anchors of her life. Her opportunity for social interaction was, ironically, diminished not only because she was immobile but on account of her husband being extremely mobile and doing things she might have otherwise done.

These situations of disadvantaged people unable to have a social network in daily life, find echoes in other studies as well. Having no car (Dupuy 1999; SEU 2002 report cited in Urry 2007) living in a residence apart from transportation facilities and meeting places (Church et al. 2000; Cass et al. 2005; Kenyon 2006); or inability to organize themselves or their time schedules may leave the poor unable to travel in order to see friends and relatives (Kaufmann et al. 2005; Le Breton 2005; Urry 2007). This might reduce women’s chances to make contacts with people other than household, neighbourhood and family (Allan 1979, 1989).

However, despite the lack of social networks outside, several of the poorest women formed friendships with other women co-workers. The drudgery of factory labour characterized by routine, unchanging work, poor compensation and adverse health impact, was relieved to some extent by the sisterhood they found there. Carswell and DeNeeve (2012) found evidence of “social relations and livelihood strategies embedded in a wider regional economy and cultural environment” among garment workers in factories of Tirupur, Tamil Nadu, known for its garment exports.

c. Limited leisure opportunities in the city

Even for the well-heeled, there are very few leisure opportunities in Jalandhar. As two of them pointed out, other than shopping malls and restaurants, there are few public places to relax. Rekha, a nutritionist is originally from Chandigarh, Punjab’s capital and a well-planned city. Comparing the two cities she felt that Jalandhar had no natural places where one could go for an outing. “In Chandigarh, we could go to Sohna Lake, go for a long drive, here there are no scenic spots one can hang out in.” Amita felt that she needed to strengthen her relationship with her husband because they barely saw each other, due to her being busy with her job on weekends as well. But she lamented the lack of quiet public parks where one could relax, although the municipality says there are 55 parks in Jalandhar. “All are crowded with children running around, you cannot have a quiet time,” she regretted.

One form of leisure, which was accessible even to women with poor mobility, because of its ubiquitous presence in Indian towns, was the beauty parlour. Beauty salons in India are plentiful in every town to suit all budgets, small neighborhood ones to expensive spas in upmarket hotels. Most beauty parlours are businesses run by women entrepreneurs, have women employees and allow only female clientele. The Indian beauty parlour is a place not only for getting groomed but is space away from the male gaze, providing women with a comfortable ambience where they can have time to themselves. When, Kiran, a factory worker was choosing activities she does, her response upon seeing the image of the beauty parlour, was a sudden “Yes” among a long list of “Nos”.

i. Leisure inside the house

For the poor who lacked mobility, leisure was restricted to watching TV, as no incremental expense is incurred. Some women described their evenings as a time when the TV would be on while the woman continued to work her domestic tasks, primarily cooking, while intermittently looking at the screen. Dedicated TV-watching depended on whether all the housework was finished and they could sit and watch a favourite soap opera.

In contrast, one respondent from a well to do household who lived in a large bungalow said that since there were several bedrooms and each had its own TV, so one could choose how one wanted to watch- with family or alone.

The stress of long commutes (high mobility) made working mothers crave some “alone time”. Amita and Sheetal – who commute for nearly three hours a day (see section 3) specifically picked up the image of a woman watching TV alone. As mothers of young children who had long commutes and stayed in intergenerational households, the yearning to relax alone was apparent in their choice.

i. Spatial access to places of worship

In Indian cities places of worship are intermixed with other land use like residences, bazaars and even workplaces. Hence a temple is never very far from any reference point. Jalandhar city itself has dozens of Hindu and Sikh temples, many of them since the medieval era, around which other urban forms have grown. Apart from those places of worship identified and listed in the records of the local corporation, Indian cities also have small street side temples, some of which maybe be illegal encroachments but are undisturbed by authorities for years and become an integral part of the landscape. Access to a temple i.e. any temple such as the one in the neighbourhood, is easily achieved even by those who can only walk. But, access to particular places of worship is more restricted and depends on individual mobility constraints. So, while the factory workers who are spatially trapped within the Leather Complex due to stranded mobility may find access to the landmark Devi Talab Mandir in north Jalandhar difficult, they compensate by going to temples in their locality that they can easily reach.

The limits of the capability for religion are set by the capability for mobility.

Baby who is a single income earner for a family of six goes to the Devi Talab mandir once or twice a month. “It costs 60-70 rupees in the shared tempo if I go with my children, so we can’t go more often,” she says. Kiran, a migrant factory worker from Bihar, dreams of going to Vaishno Devi, an important Hindu pilgrim centre in the northernmost state of Jammu and Kashmir. It is well connected to Jalandhar by bus and train and does not take more than half a day of travel. But she is unable to afford the trip at present. “Someday, when the Goddess calls me, I’ll be able to go,” she says.

Apart from poverty, there are some women who cannot go to religious places because they cannot travel unaccompanied. Munia, an illiterate widow cannot go because her teenage sons discourage her from going and don’t want to accompany her. Lack of confidence in travelling alone leaves Munia to satisfy herself by visiting the small temple near her house.

In conclusion, poverty, inability to travel alone and limited opportunities for unpaid leisure in Jalandhar leave women’s capability for leisure, social networks and visit religious places underserved. These are mitigated by the widespread possession of television (82.6% in Punjab as per the census) which at least provides the women some form of leisure and the prevalence of mixed urban forms due to which temples are numerous and easily accessed even by those whose travel is restricted due to other factors.

3. Capability for Child Care

There were instances among the Mobility Have Nots where the presence or absence of the capability for mobility of the working mother determined her capability for child care.

i. How the mother's immobility is a barrier to the child going to school

This study found that apart from barriers to education that migrant's children faced due to language issues and documentation requirement, another reason was their restricted mobility in an unfamiliar environment. Sushila is unable to send her 12 year old daughter to school because no other girl goes to that particular school from the neighborhood and Sushila was afraid to send her alone. The daughter is now employed in another factory close by doing odd jobs and supplementing the family income. Both her sons, however, attend a private school where the fees have been waived, in view of her poverty. The sons walked to school together accompanied by other boys in the locality. In Indian families, boys have primacy over girls with respect to access to all kinds of resources including money spent on food and education, as Sen's titular essays in his book "The Country of First Boys" (Sen, 2015) has shown. But Sushila's case demonstrates how a less recognized reason that has nothing to do with socio-cultural practices i.e. mobility deprivation was perhaps as important in stymying women's life chances.

"What to do, I stopped her schooling...Agar majboori nahi hoti toh who ladki kaam karne waali thodi thi... If I hadn't been compelled to (by circumstances), I wouldn't have put her to work. She was in the village, studying in 8th std, but she said don't leave me alone, I'll come with you..."

Sushila goes on to explain that the government school, which is free, was far away from her home. There were no other girls in the neighborhood who were going there. They were going to private schools which Sushila obviously could not afford.

"Didi,(sister) What to do? What to do...?" she says in desperation when I ask again about why such a young girl is working instead of going to school. "The school, government one is far off....there's no one to accompany her there...We don't know the way, haven't seen anyone who goes there"

She is clear about the fact that if she had possessed a cycle, and a couple of more girls were accompanying her, her daughter would have also gone to school. The degree of spatial mastery depends essentially on the scope and precision of the cognitive map that an individual draws with respect to their environment (Flamm and Kaufmann, 2006). In other words, the existence of accessible public spaces only generates mobility in so far as individual cognitively and physically appropriates that space thereby exercising her freedom of mobility. A deficient mastering of space-time relations for women like Sushila, has to do with her status as a diffident single migrant woman coping in an unfamiliar environment. Her deprivation of the capability for mobility owing to her financial constraints and the lack of affordable transportation in the city has long term repercussions for her children. Sushila's decision is typical of working class parents in new resettlement areas where girls education is compromised because of a lack of safe transport to reach schools (Vishwanath

and Mehrotra, 2007) Deprived of education, another generation of women enters the informal labor market, below the legal age and on the same exploitative terms, once again entrapped in the vicious cycle of poverty. Affordable access to schools for girl school children in India can improve the number of girls continuing their school education, which is a development goal for the Indian government. One of the key initiatives in education of the present government is the “Beti Bachao Beti Padhao” (Save the girl child, Educate the girl child”). While families have been urged to give equal treatment to children of both genders, the problem of a safe passage to the school for adolescent girls has not been addressed. Without transport, the program remains a social exhortation rather than a real option for girls to better their chances of education. As Merrit Polk states “Despite the complexity of reasons underlying social inequalities, if social equality is the goal and spatial equality is the means then equal access to transportation technologies can be seen as a necessity” (Polk, 1998). Access to education for children is linked to a working mother’s sense of well-being and her perception of herself as having the functioning of ‘Being a good mother’.

ii. Inability to provide a safe environment for children while at work

Limited mobility prevents poor migrants who work in isolated places, far from the residence from overseeing their children. As described in Research Question 2 II(.2.), Kamli, the Nepali immigrant is spatially trapped between 9 to 5 in her workplace in an isolated factory on the outskirts of Jalandhar. Her two young daughters, both below 5, arrive home from school in the afternoon to the factory complex which houses their one room house. In a precarious informal arrangement, the factory watchman receives the girls and ushers them into their single room house where they stay playing and watching TV till the parents arrive at 6.p.m. The safety and security of young children is an important concern of migrant women which prompts some of them to even take up home based work to keep an eye on their children, as shown in two studies about working class migrant women- (De Neve, 2012) in case of women workers in a garment factory of Tiruppur in Tamil Nadu and (Sharma and Kunduri, 2015) who studied the same profile in Delhi.

iii. Mobile and Available?

The only two mothers who did double duty of escorting children both ways to school belonged to the richest class in the sample. Rekha and Rupa, being from wealthy households can easily afford a school bus, but the mothers dropped and picked up their children by car. Their temporal availability was assumed because of their self-employed status. Combined with their ability to drive, it put them in a situation where they performed more trips than salaried women who are not available at home to do so.

Rekha, a dietician, drives her 5-year-old daughter to school every morning and then goes to her clinic. In the afternoons, she comes back home, has lunch and goes to fetch her daughter from school. She has another escorting trip in the evening when she accompanies her daughter to music class, waits there until the class gets over and brings her back. She finds none of this inconvenient as the school, music class and clinic are all within 5 minutes of driving distance from home. Her husband and father in law, both doctors,

return only in the evening while she works only until lunch. Because of her shorter working hours, Rekha becomes available for household tasks from the afternoon onwards and since she can drive a car, she can make as many trips as required.

Rupa and her husband own and run a successful business of an English training institute in Jalandhar, having an independent house, two cars and hired help including a chauffeur. They are a “nuclear family” which means they do not have older family members living with them. Rupa’s husband is, however, not comfortable sending their two daughters, aged 9 and 6, to school by bus or with the hired help. Since she can drive, he prefers that Rupa escort the children. Rupa hence drives her daughters to school in the morning and picks them up in the afternoon. Since the timings of the younger and older child are different she has to make a total of four trips to the school. As the younger daughter leaves home late and comes back early, Rupa is spatially constrained to the house for first half of the day. She works from home, handling phone calls from her employees through the day and checking email.

Both these cases are evidence of how having a car and knowing how to drive has in fact, become a constraint for these two working mothers. It is indeed ironical that despite being rich and professionally educated, the women performed more care work than others, in terms of trips outside.

4. Capability to Nurture Relationships

The presence of this capability is evaluated by the attainment of the functionings listed under it – “spending exclusive time with husband” “telling stories to children/having fun outside with them” “visiting the maternal home” “spending time with parents in law” ; “being a “good” wife/partner” ; “being a “good” mother”; “being a “good” daughter “ and “being a “good” daughter in law.” . The “good” part is a value judgement in the respondent’s own eyes.

The functionings mentioned under “Nurturing Relationships” are beyond routine activities like escorting a child to school or cleaning the house. These refer to spending quality time with a partner/elder person/child. Empirically it was observed that respondents differentiated between routine “doings” such as preparing meals or washing clothes and the state of “being good” in each of their roles of mother, wife, daughter or daughter in law. Despite doing all of the everyday duties most women regretted that they were not “good enough” mothers or daughters or daughters in law, because they were not able to spend quality time “nurturing relationships” rather than merely engaging with the relative on routine tasks.

Those who had excessive mobility and long commutes were among those who were fraught with guilt about not having enough time to nurture their closest relationships. One such mother, Indira, gets into her child’s school bus and travels with him for five minutes, getting off further down the road, where her carpool colleagues pick her up. She does this, she said, only to spend a few more minutes with her four year old son. Anisha, travelling close to three hours a day to and from work had to gain control her emotions while narrating an incident to explain how she was always running and lacking time to do the things she would

like to. In this case, it was “being a good daughter.” Her mother, living temporarily in London with her sibling wanted some medicines to be sent but Anisha just could not find the time to purchase and courier them. Her mother would ask regularly and eventually, it was her brother who managed to send them to their mother. In India, married daughters are expected by their parents to stay focused on their own homes while sons are expected to look after them. This incident is poignant because it was an attempt by a married daughter to break that stereotype and participate in caring for an ageing parent but she could not. If Anisha had a direct bus connection from her home to workplace or had an institutional child care arrangement that allowed her to take the office transport, her commute time would have been shorter leaving her more time to achieve other valued functionings in her life.

5. Capability for Health and Fitness

The Capability for health and physical fitness was directly related to the capability for mobility. Long commutes to work to places outside the agglomeration left women little time to look after their own needs like go for a walk or to the gym or yoga class. In contrast, women who worked and lived within the city and had less than 5 kilometre commutes, time for exercise was wrested in various ways. Mini reserves an early hour of 6 to 7 a.m. for her exercise routine and returns to help her children leave for school. Others like Sonia and Urmila go for a walk along with their husbands after the children have boarded the bus between 7 a.m and 8.30 a.m. Deepika, is a 40-year-old with two children (14, 5) who also has time between her children’s exit and leaving for work, goes to the neighborhood park, gaining time for herself. She says:

“After the children leave at 8, I go to a nearby temple for meditation. I leave at 8 and reach at 8.15. There I feed the birds and meditate for some time. By 8:40 I return home and do pending jobs like making the bed, putting clothes for washing etc. I get ready by 9:15 a.m. and then my husband drops me by car to work which takes 15 – 20 minutes.”

Another respondent, Randeep, a manager in a bank, who returns home late because of her long hours, has a family routine in the mornings. Randeep, her husband and child go to the school together by two wheeler. After dropping the child at school, the couple took a walk in the nearby park as their morning exercise. This ensures she can spend time with the child and take care of fitness.

6. Capability for Religion

For lower income women, the capability for religion overlapped with the capability for leisure and the capability for social networks. Leisure in the way we commonly view it in contemporary middle class life- restaurants, movies, shopping malls etc.- did not resonate with the poor women in the sample. However, once a week or more, several of these women went by bus, to small towns in the interior of Punjab to hear religious discourses from whichever preacher they followed. They were accompanied by family members or other women in the locality. It became, therefore, a day long outing that provided leisure, sociability and an

opportunity to participate in a religious event. For these women, such gatherings were the only form of outdoor leisure activity as their limited mobility did not allow them to access other places of leisure within the city, as we saw earlier.

“ Every Thursday we go to Palampur. Everyone in the neighbourhood goes. I go with my son or daughter to listen to Ashustosh Maharaj.” says Yashodha. She has been coping with strained marital relations and a son who dropped out of school and refused to stay employed.

On Sundays, Kiran, a single mother who stays in her mother’s house, goes to a small town to listen to a discourse by another guru. Krishna, a widow with children in their late teens and twenties goes less often but mentions this activity as the only one she performs, rejecting the images of more middle class outings-like cinema and shopping.

These trips were very important to them; one they had reason to value as a functioning and which significantly contributed to their spiritual and mental well-being. These gatherings called “*satsangs*” which literally translates from Hindi to “good company” are organized cultural events where stories from Hindu epics along with their moral teachings articulated by the preacher are interspersed with ‘bhajans’ or short devotional folk songs sung by the entire congregation. Research studies are increasingly highlighting the likelihood of women reporting more emotional and health benefits of singing and music in comparison to men. (Chamorro-Premuzic et al, 2009). Singh et al,(2014; 2017) explored the role of folk songs and *satsang*, as music therapy for Indian rural women. They reported that singing these songs helped relieve stress, fostered interpersonal relationships, increased social networking and encouraged formations of social groups that helped them during times of sorrows as well as imparted happiness. Hence despite stranded mobility, the low income women of the sample displayed agency in collecting their resources and accessing places to pursue a religious/spiritual activity that improved their well-being.

Research Question 4b. What are the constraints to achieving capabilities required for well-being?

When we consider the full sample of Jalandhar, the potential functionings most desired were related to leisure and social networks, which included religious activities like being able to visit a particular temple. One third of the desired functionings related to the capability to pursue more leisure activities. As explained in Chapter 2 on research methodology section C.(V), the constraints to achieving potential functionings were listed for each respondent and then aggregated for the sample, as shown in Table 9. In Jalandhar, the constraint which prevented the women from performing these doings related to leisure was ‘time’, forming 37% among the mentions of various constraints.

TABLE 9: Potential functionings desired in Jalandhar

<i>Functionings desired but not achieved</i>	<i>Mobility</i>	<i>Domestic Work and Child Care</i>	<i>Paid Work and Financial Independence</i>	<i>Leisure and Social Networks, Religion</i>	<i>Health, Physical Fitness</i>	<i>Nurturing</i>	<i>Self-Improvement</i>	<i>Long term financial security</i>	<i>Row Total</i>	<i>Number of times constraint was mentioned</i>
<i>Time</i>	4	1	1	13	5		3		34	37%
<i>Personal</i>	4			2	1				8	9%
<i>Family</i>	3		3	4					10	11%
<i>Mobility</i>				5					5	6%
<i>External</i>				1					2	2%
<i>Physical Energy</i>					2				3	3%
<i>Finances</i>	10			5			1	12	28	31%
Column Total	21	1	4	30	8		4	12	90	100

1. Time as a constraint

If we take 9 hours out of 24 hours as the time required for basic maintenance activities (sleep, bathing, eating etc.), then we are left with 15 hours which can theoretically be devoted to other activities. The respondents time usage shows how these 15 hours are utilized as detailed in Table 10 below.

Table 10: TIME USAGE (out of 15 hours)						
	Components of Time spent out of the house. N=49					
	A	B	C	D	E	F
	Percentage of time spent out of the house (out of 15 hours)	Journey Time in hrs.	Time spent at work	Non-work travel in hours	Time spent on non-work activities outside the house	Percentage of time spent inside the house
Jalandhar	61% (9.17)	8% (0.69)	86% (7.9)	2% (0.9)	4% (0.39)	40% (4.8)

On an average, roughly 60% of the working mother's day is outside the home and 40% inside the home. In the earlier sections of this chapter, we gained an understanding of the enablers and inhibitors of a woman's journey to work, which consumes 8% of a working mother's time in Jalandhar . Non-work related trips consume only 2% as several women live in joint families and some essential tasks are done by other members of the family. Also, because Indian neighbourhoods are organically mixed land use, bazars and street vendors are embedded in residential localities making access easy. Time spent on non-work activities consists of waiting for a child to finish a class or time spent while shopping for groceries etc. However, this could also include leisure activities and hence cannot be seen only as a 'time-draining' component. We now turn our attention to the 40% of time that is spent at home and examine to what extent working mothers have free time, while in the house.

i. Time at home.

The differentiating factor in the amount of domestic and care work done by the working mother in Jalandhar is the structure of the family. Working mothers who lived in joint families, were able to share their domestic work particularly with respect to escorting children to/from school (D11) and buying household groceries and vegetables (columns D3 and D4) were performed less by women living with their parents in law. Even if vegetables were bought, it was supplementary to what the elder person did but not the primary responsibility of the woman.

However, it is noteworthy that it is people in the higher social classes who typically lives in joint families. Almost all the respondents of social class A (coloured yellow)-21 out of 25- are natives of Jalandhar who have the advantage of having their parents in law in the same city. Those who do not are either because the parents in law are no longer alive or live with their other children in a different city. On the other hand, the lowest social class of D (coloured brown) do not have their kith and kin in Jalandhar. Many are migrants whose families, sometimes even one or more children, are back in the villages of their home state. This leaves them with neither help from within the family nor from hired help, which they naturally cannot afford

(they are often themselves the hired help in middle class homes). Hence, while joint family is the enabler, it is the higher social classes who are able to live in these kind of intergenerational households.

Work inside the house was almost completely managed by the woman with help from domestic maids or mothers in law. This inability of men to perform fatherly duties the way the mother wanted them to, was part of the reason why many men were absolved of the task itself. One of the respondents Preeti, belonging to a well to do joint family, explained why she preferred handling their two children herself.

“If my husband is there, he is not interacting with them. He does his own thing; the kids do their own. He would not be bothered -have the kids had milk, have they done homework, are they ready for the exam if there’s some exam or test...he would not know.”

Sukhi, a clerk in the municipal office has a three year old daughter. Sukhi is particular that she herself sits with the child for homework because her husband did not take it seriously enough. “It just becomes a fun session; with me she knows she can’t fool around.”

Pritika a school teacher receives a lot of help from her parents in law in managing her baby. They are in charge of the baby while Pritika is away at work. Her husband, who has longer work hours as a college professor, contributes very little. “*Maybe he will change her diaper sometime, or play with her a little bit, but that’s it,*” said Pritika.

The respondents did not cite their husband’s low participation as a problem, merely as a fact because a pointed question was posed to them about their husband’s contribution in housework. In fact, even the little that the husbands did was spoken of with appreciation.

Bhavya’s child is looked after between herself, her sister in law living upstairs and her mother in law. Her husband, a chartered account, returns home much later and his work hours do not permit him to spend much time at home. Yet Bhavya said:

“My husband helps at times by making a cup of tea and helps doing baby sitting on Saturdays in case I have to go for a meeting. But he has to sacrifice his office time for that. My daughter is more attached to her father and he also takes care of her well. I can’t tell my husband to do anything beyond this. He has time constraints.”

Evidently, the lack of contribution of the husbands in domestic work was not felt by the working mothers in joint families as it was compensated by help from in laws. The little that the husband did was appreciated. The poor respondents working as factory labor were amused when asked to select work they do at home for the household because they saw it as a redundant question. “Who else will do it?” many asked. Kamli’s response below echoed that of all others in the same profile.

“I do all the jobs like cooking, washing dishes, bathing children, washing clothes, ironing, getting children ready for school, dropping children to school, playing with children basically everything possible at home.”

In some lower income households, especially of migrants, husbands were barely present in family life, neither bringing in income nor taking responsibility for any household task. Baby's husband was unemployed and sat at home all day but was disconnected from the happenings of the household. In Yashodha's case, her husband did not share any money with the family and sometimes disappeared for several days with no information about where he was going. Her grown up son too had dropped out of school earlier and did not have stable employment. Yashodha ran the house with her own income and that of her daughter who finished her studies and worked in a pharmacy. In some others, husbands had abandoned the family leaving single mothers solely responsible for the children.

The one household responsibility that many husbands performed was to buy groceries. Though this was not stated, it is possible that this manner of division of tasks could be to limit the interaction of women with unknown men in a public place such as bazaars.

Middle class respondents gave high importance to cooking for their families and those who had the least time owing to long distance commuting expressed their inability to cook with most regret. Randeep in Jalandhar, who has a 12-hour day in a private bank, wished that she had the time to cook tasty dishes for the family. The only potential "Being" card she picked was that of "Being a good cook."

"Usually, since I am tired in the evenings, I just make something basic like dal (lentil curry) and vegetables. Or we order take away. But I would really like to spend time and make tasty food for everyone."

Interestingly, the women who commuted the longest and therefore had relatively far less time at home, felt most strongly about not having the time to cook. Sheetal traveled from the neighboring city of Amritsar to Jalandhar to work. expressed her desire to cook more frequently because her husband loved her food. Likewise, Rani, a school teacher in a government school in the rural area bordering Jalandhar city, commutes 34 kilometres on a difficult journey. said:

"I want to be a good cook too but not able to as I it is not a skill I have, but I want to be..."

In poor migrant families teenaged or older daughters, helped their mothers considerably, sometimes taking over the entire meal preparation. Therefore, while the facilities within the kitchen and the nature of the food cooked may vary with income class, in all cases women (the woman respondent, mothers in law, daughters) remained central to the cooking and feeding processes. In most cultures, food practices (cooking, eating, sharing) are inscribed in the ideologies of family life, within which food preparation is perceived as an expression of care performed by women. As the respondents' views above show, food is prepared not just for its own sake but is imbued with meaning of being "a good mother" and a "good wife."

In conclusion, women in Jalandhar shoulder most responsibilities at home while those who live in joint families are helped by their mothers in law in cooking and feeding children. Wherever able, fathers in law

help by picking up or dropping young children to the school bus stop and buying fresh vegetables from the local bazaars or street vendors. Husbands play very little role in sharing household responsibilities.

a. The Joint family – a desired state of ‘being’

The presence of parents in law enhanced the capabilities of working mothers in Jalandhar, especially the capability for paid work. In many cases, given the absence of institutionalized good quality child care in India, the women would not have been able to work, had it not been for support from the older generation. Extremely high parental support was seen in two cases: Amita and Anisha, who commuted from the city to outside the agglomeration. In Amita’s case, either her mother or mother in law alternately came from other states to live for a few months each with Amita and her husband, only to manage their four year old son and enable the couple to work. Says Amita:

“One of the two is normally always at home otherwise my life will come to a standstill. There are times when no grandmother is available then either I or my husband have to take leave and it is a crisis situation.”

Anisha’s mother in law comes everyday morning by auto rickshaw, travelling 15 kilometres to take over the duty of sending the 4-year-old daughter to school and receiving her in the afternoon. As schools in Jalandhar finish by 2p.m. and children come home for lunch. In homes where a grandmother is present, she takes care of the task of serving lunch to children.

Unlike the myth of the ‘evil mother in law’ and kitchen sink wars between daughter in law and mother in law, of popular imagination fueled by the media, there was a tacit understanding of how kitchen work needs to be balanced. For example, Randeep, a bank manager, makes the vegetable, while the mother in law makes the *chappatis* (flat wheat bread). Again, some women cook in the mornings, while the mother in law cooks dinner. Navjot lives with her parents in law and son for most of the year as her husband works in the merchant navy and is away on a ship for several months together. She spoke of the harmonious division of kitchen work and how her mother in law and she had developed such a good understanding that they did not need to spell out each day who should do what tasks. Rakhi, a dietician, shares a clinic with her mother-in-law who is a doctor.

Some older women beyond 40, regretted that their in laws were not alive.

“When my parents in law lived with us, they were like a roof above my children’s head, providing them a sense of security. I really miss them,” said Anju, 42, mother of two boys.

Pritika, who lives in a joint family that has not only her parents- in- law but also her father in law’s brother and his descendants in a sprawling, old style house in north Jalandhar, explained that she would not have it any other way. She organized family outings inviting as many members as possible, including her own parents who also lived in Jalandhar.

Shama, 45, a banker, regretted that when her mother-in-law was alive, she had not been able to spend time with her because of the tight work-home schedule. Charu, who was divorced and lived with a teenage

daughter and her parents, drove her own car and was an independent woman. Yet, she picked the card of the “traditional Indian joint family” as something she dreamt of one day being a part of.

From the Jalandhar sample, it does appear that with increasing rents in cities and poor child care facilities women have found it beneficial to stay with parents in law to ensure good upbringing of children, emotional support for the whole family and sharing of mundane household tasks. The older generation too has adjusted to this relatively new phenomenon of the ‘working daughter in law’ and reciprocate by being active grandparents. While entering into a joint family system may not have been the woman’s choice, she has circumvented this apparent constraint and turned it into an advantage.

Conclusion

According to the census, a substantial 40% of women in Jalandhar work from home , which is higher than in most districts of India. A contributing factor is likely to be the limited mobility in the town due to lack of intracity buses, which constrains more women from venturing out to work. Yet, none of Jalandhar’s respondents expressed a desire for a city bus service as a means of improving their personal mobility and reaching places faster. Instead, private vehicle ownership was seen as the solution to enhance one’s capability for mobility. Even those who spent considerable time on the road and had inconvenient journeys wanted to improve their mobility through the use of a personal vehicle, rather than through a demand for better public transport. This attitude to public transport is found in Indian cities in general where the population views public transport to be inefficient, inconvenient and time consuming. This has contributed to more people acquiring personal vehicles which in turn increases the congestion on the roads. The two wheeler boom in India is a response to low dependability that people associate with public transport. Two wheeler usage in Jalandhar, for example, is one of the highest in the country.

But not everyone can afford personal vehicles. Thus the capability for mobility is denied to those who are too poor to afford even paratransit like shared autos. As we saw in the Jalandhar sample, mobility is extremely limited to women who do not have the confidence to travel alone. Those working outside the agglomeration and unable to use personal vehicles, the lack of reliable connectivity is especially difficult. Provision of public transport in Jalandhar is hence vital for improving the capability of mobility for many groups of people. In Stage II of the Smart City Challenge run by the Ministry of Urban Development Government of India, Jalandhar city has submitted a proposal to the central government in 2016, to restart the city bus service under AMRUT, a central government initiative for urban transformation. Through this, the city expects that, the share of public transport trips would increase from 13% to 30%. (Smart City proposal, 2016). The implementation of this plan in the coming years remains to be seen.

According to the Smart City proposal submitted to the central government by Jalandhar, the city's vision for a 'smart city' is to leverage its strength of being a sports goods manufacturing centre and become a 'Healthy, Active City'. The vision promotes developing sports and recreation facilities in the city, interactive public spaces and recreation areas/ parks where everyone can be supported to make healthy lifestyle choices. At present only 2.3% of Jalandhar's local planning area is under "Recreational & Open Space". The development of physical and social infrastructure in the city could help women access avenues for physical exercise.

The discussion about accessibility in Jalandhar demonstrates that more mobility is not equal to greater accessibility. Despite high mobility according to all the conventional metrics of kilometres covered, time spent and number of trips, some women still had the poorest access to the workplace. On the other hand, those who travel for long distances are not the only ones to have poor access. It was entirely possible to commute for under five kilometres in the city centre and yet often have an uncomfortable journey in a shared auto.

Limited capability for mobility interfered with women's ability to do many other activities related to well-being- such as leisure, meeting people socially or visiting temples for spiritual satisfaction or even following an exercise routine. The most impacted were long distance commuters, echoing qualitative studies in other parts of the world which showed far-reaching consequences in the experience of quality of life for long-distance commuters (Jönsson and Lindkvist Scholten 2010; Gil Solá 2013). Poverty exaggerated the barriers to mobility caused by factors like isolated worksites and lack of transport connectivity interfering with the mother's ability to even provide education or a safe environment to her children. Respondents believed time constraints to be principally responsible for their inability to do and be things that would enhance overall well-being. Sixty percent of time was spent outside, about 8% on commuting while the remaining 40% were spent at home. At home, the unequal division of labor between husband and wife left the working mother unable to find free time from domestic responsibilities.

[References on page 385](#)

CHAPTER 5 : TRICHY

This chapter is divided into three sections. Section A provides an overview of Trichy urban agglomeration, its location, importance to the region, urban growth in recent decades and transport options in the city. Section B answers Research Question 1 by profiling the working women of Trichy and their mobility patterns on the basis of the census data. Section C gives a description of the sample and proceeds to answer the next three research questions based on the sample's responses.

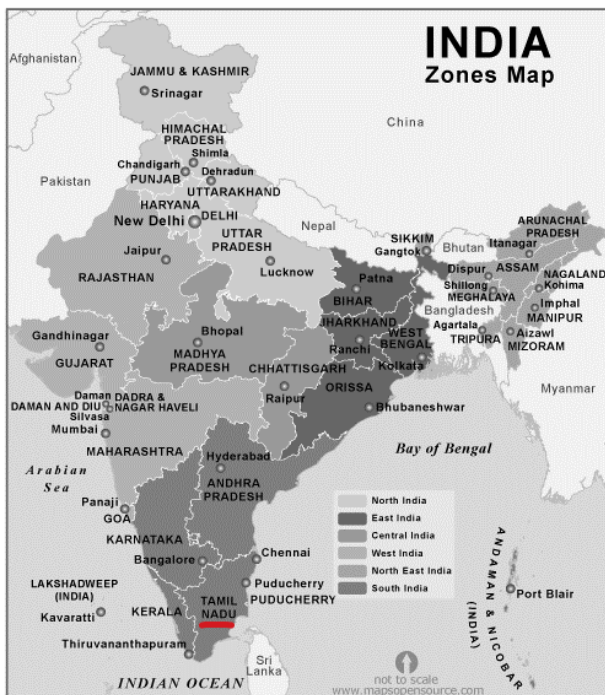


Figure 1: Map of India showing location of Tamil Nadu State. Source: d-maps.com (not to scale) Figure 2: Map of Tamil Nadu state showing Trichy district. Source: mapsopensource.com

SECTION A

I. Overview of Trichy agglomeration

1. The state of Tamil Nadu

Trichy district lies in the southern state of Tamil Nadu. Out of India's 29 states, Tamil Nadu (Figure 1) is the eleventh-largest by area and the sixth-most populous. It was ranked third among states in India according to the UNDP's Human Development Index in 2015. It is a prosperous and industrialized state being the second largest state economy in India with a GDP of ₹13,842 billion (US\$220 billion). Its official language is Tamil, a classical language of ancient origin. Tamil Nadu is home to several classical arts and a rich architectural tradition evident in its renowned temples.

2. District of Trichy

Trichy district is the fourth largest among 32 districts of Tamil Nadu. It is the very heart of the state and is completely landlocked bordering ten other districts as seen in Figure 2. It has a Geographical area of 4,40,383 hectares (4404 sq. km), 62% of which is under crops. The river Cauvery, one of the country's longest rivers, flows through the district and is the main source of irrigation. In Tiruchirappalli district, the river is joined in the north by a distributary called Kollidam (Coleroon) (District Census Handbook, 2011, Part B)

Table 1: Comparison of state and district for key development indicators

Indicator	Tamil Nadu state average	Trichy district average
Population density-persons per square kilometre	555	604
Population in urban areas	48.4%	49.2%
Sex Ratio	943	1013
Female Literacy Rate	76.8%	73.4%
Per capita income (in Rupees) in 2011-12	63,996	75,393

The economy is essentially agrarian with most of the area covered by agricultural land (Refer Figure 2a and 2b) and farming being the main occupation of the people. Rice is the main crop grown; groundnuts, sugarcane and oilseeds occupy significant crop area too. However, despite being an agrarian district, the share of the tertiary sector (services) in contributing to the gross domestic product is 73.19%, much higher than the primary sector (agriculture and allied activities) and secondary sector (manufacturing, mining, construction etc.). This reflects state and national trends which show the transformation from an agricultural base to service sector driven economy. Only 3% of the district is built up area, as seen in the graph in Figure 3a showing the district's land use distribution. The small patch of red in Figure 2b showing built up area is where Trichy city and its surrounding outgrowths are located. Hence Trichy city constitutes a majority of the urban built up area of Trichy district.

Land Use Distribution of Trichy District

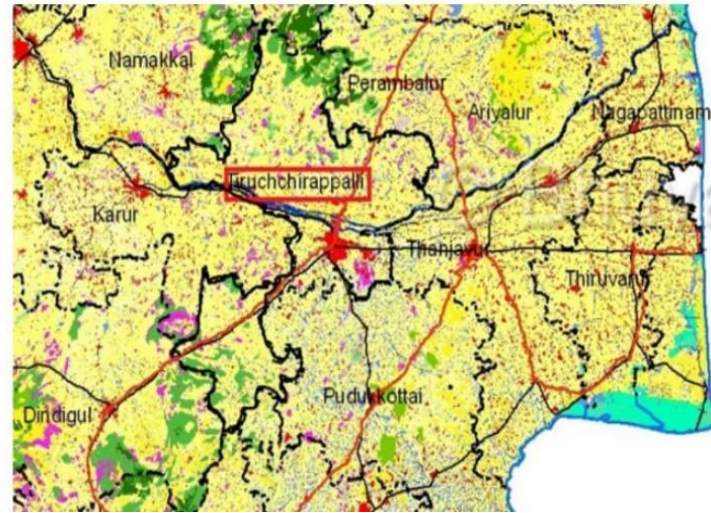
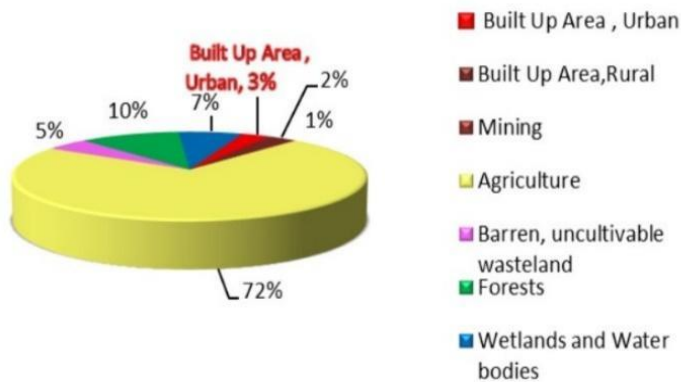


Figure 3a: Land use distribution of Trichy District. Figure 3b: Land use distribution map of Trichy District showing concentration of built up area in the location of Trichy city while surrounding areas are agricultural land. (Source: Bhuvan: Indian Geo Platform of ISRO -Indian Space Research Organisation.)

II. Trichy Urban Agglomeration

The urban agglomeration (UA) of Trichy consists of Trichy city and 8 surrounding small towns whose population and type is given in Table 2 above. Together, they constitute a population of 10,22,518. This makes Trichy UA one of the million plus cities of India. Table 2 culls out data from Census 2011 and the District Human Development Report, 2017 to show contrasts in essential indicators amongst the towns of the agglomeration. These indicators show that development is uneven within the agglomeration. Trichy city scores the highest in HDI as well as the GII. It has 90% of its female workforce employed as “Other Workers” which means they are in occupations other than agriculture, cultivation or Household based industries, while other towns have far less. The high percentage of “Other Workers” indicates more diverse opportunities for women’s employment are present within Trichy city compared to the other areas of the agglomeration.

Table 2: Development indicators in the agglomeration

Source: *Census 2011 + Distt Human Development Report, 2017 Note: HDI- higher is better, GII: (Lower is better)

	Population as per Census 2011	% of population in slums*	Human Development index (HDI)	Gender Inequality Index (GII)	Other Workers" as a % of total female workers*
Trichy Municipal corporation	847387	19%	0.878	0.034	90%
Manchanallur Block	25931	12%	0.506	0.074	35.60%
<i>Pikshandarkoil</i>	17257				
Thiruverumbur Block	24023		0.77	0.027	66.30%
<i>Krishnasamudram</i>	23156	19%			
<i>Koothappar</i>	13146				
<i>Navalpattu</i>	15943	17%			
<i>Thuvakudi</i>	16788				
<i>Pappankuruchi</i>	38887	26%			
TOTAL population of urban agglomeration	1022518				

1. Urban Growth

The map in Figure 4 shows urban growth patterns using multi-temporal and multi-spectral satellite data from the year 1991 until 2014, as given by the Indian geo referencing platform, Bhuvan of the Indian Space Research Organization (ISRO). Apart from Trichy city (in the centre), the other 8 towns constituting Trichy have been marked in red dots. The area of the entire urban agglomeration is 211.5 sq. kms, while the area of Trichy city itself is 167.23 sq. kms. The profusion of yellow patches in the map indicates urban growth in the agglomeration between 2009-2014. Table 3 is to be read in conjunction with the satellite data of Figure 4. It shows the maximum urban growth in different parts of Trichy between 1999- 2014. Central Trichy has seen the maximum population growth, almost double in some places in merely five years but the rate of growth was higher between 1999-2009. South and west Trichy too grew much faster in the first decade of the new century (2001-2009) but slowed down after that. On the other hand, the island of Srirangam and Eastern Trichy grew more after 2009.

Table 3: Urban growth in Trichy in each zone. Figures in percentage.

Source: Author using data from Indian geo satellite referencing platform, Bhuvan.

Year	Srirangam	West	East	South	Central
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1991	17.65	1.17	13.05	43.2	68.31
1999	35.73	2.88	23.22	48.96	77.31
2009	38.34	15.3	28.26	64.62	86.04
2014	50.49	25.29	50.58	68.94	91.35

Table 4: Property rates in Trichy agglomeration

Source: Guideline values of the government of Tamil Nadu as of June 2017.

Part of the agglomeration	Cost per square foot in rupees
Northern	201
Western	436
Eastern	469
Southern	804
Island of Srirangam	938
Trichy city	1340

While central Trichy has always been the most expensive part of the agglomeration because of easy accessibility to all facilities, the spiraling property rates of southern Trichy and Srirangam are a result of rapid urbanization of these erstwhile semi-rural areas Table 4 gives the property rates in the agglomeration as of 2018 from where one can get an idea of the relative prosperity of the areas. The more expensive locality in each part of the agglomeration has been taken as reference.¹

6

⁶ Residential Area 1 Type 1 as per <http://www.tnreginet.net>

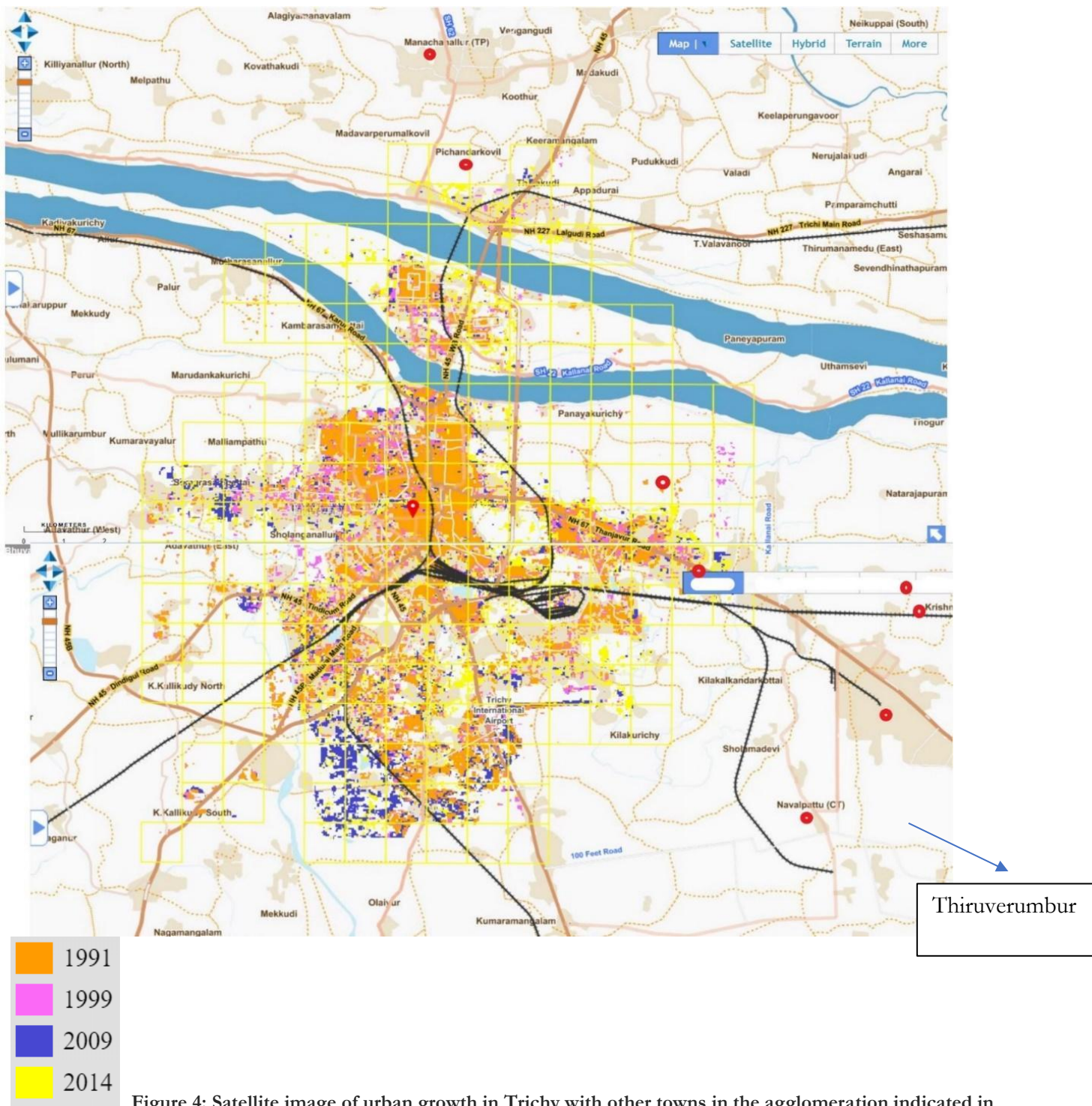


Figure 4: Satellite image of urban growth in Trichy with other towns in the agglomeration indicated in red. Source: Bhuvan, Indian geo platform of ISRO. <http://bhuvan.nrsc.gov.in/urban/sprawl/urbangrowth.php>

Study of temporal satellite data between 1968-2005 shows that the total area of the Tiruchirappalli city was 19.91 sq. kms during 1968 and it expanded into 43.35 sq. kms in 2005. This 117.7% growth was at the cost of agriculture land (97.81%) and water bodies (2.19%) (Jayakumar et al, 2008). Majority of the agriculture area on the western and northern sides were converted into residential zones. As these areas are closer to river Cauvery, water availability is high and active agriculture is practiced here. Conversion of active agriculture lands into residential area could place a threat to the region's food security in the region in the near future.

The built up area of the city has increased exponentially in response to population growth. The increase is evident in Figure 5a and 5b where the red part shows the satellite image of Trichy's built up area in 2001 and again in 2010. However, it must be noted that some of the increase is also organic- due to the inclusion of other towns into the ambit of Trichy municipal corporation limits. Srirangam itself was a separate municipality which was merged with Trichy Municipal corporation in 2001 as was the entire Zone IV (Ariyamangalam) shown in the map in Figure 6. In 2011, the municipality of Tiruverumbur in the southeast (marked in Figure 4), comprising other smaller towns was added to Trichy municipal corporation. Hence the built- up area of Trichy city has grown due to the expansion of population but also by acquisition of neighboring towns.

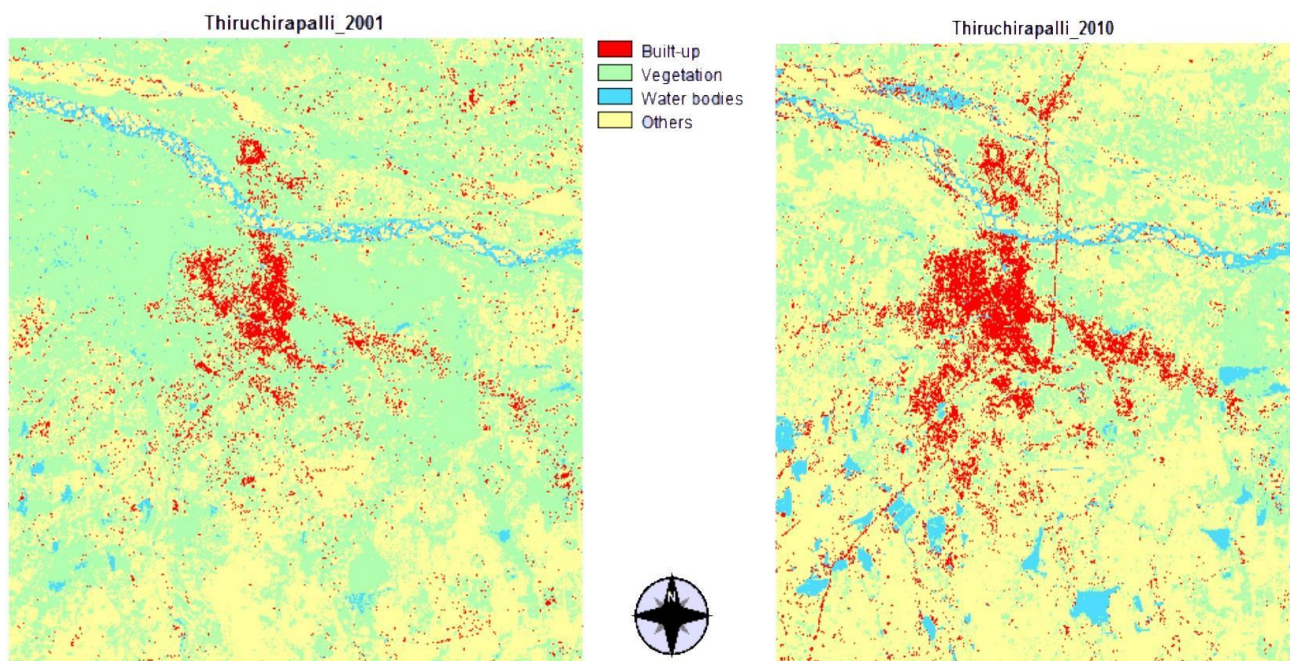


Figure 5a and 5b: Increase in Trichy's built up area. Source: GIS Labs, Indian Institute of Human Settlements

III. Trichy City

Trichy is a city of great antiquity, one of the oldest inhabited cities of Tamil Nadu. Historians have identified Trichy as one of the production centres of “wootz steel” in India as far back as the Iron Age. Woraiyur, which is now a locality in north-west Trichy, was referred to by the Greek historian Ptolemy in his 2nd century work ‘Geography’. The topography of Trichy is almost flat, with an average elevation of 88 metres. The city is located within the geographic coordinates of 10.8050° N and 78.6856° E. The river Cauvery, flows through the northern part of the city, separating the island town of Srirangam from the rest of the city. Trichy has a hot, dry climate almost throughout the year with summer temperatures rising to 41 degrees Celsius. The monthly average temperature ranges from 25 °C and 32 °C. As the city is on the Deccan Plateau, the days are extremely warm and dry; evenings are cooler because of cold winds that blow from the southeast. The warmest months are from April to June. The average annual rainfall is 841.9

mm and because of the northeast monsoon winds, rainfall is heaviest during the months October to December.

Trichy city has a population of 8,47,387 with a density of 5,483 per sq.km, which is very high when compared to state average of 515 persons per sq.km.

The fact that 19% of the city's population lives in slums is an indication of the urban sprawl resulting due to rapid growth, discussed in the previous section. The city consists of three parts: the Cantonment area to the south, the temples to the north and the bazaar in the centre of the city. Most of Tiruchirappalli's hotels and government offices are situated in the cantonment while most of Tiruchirappalli's temples are located in the north, including the Ranganatha Swamy Temple in the island of Srirangam which attracts tens of thousands of tourists every year. The Rock fort and its temple are situated in the centre of the city and surrounded by a bazaar. For administrative purposes, the municipal corporation has been divided into four zones, as shown in the map in Figure 6. Each zone is further divided into wards. Trichy has 65 wards in total. The Trichy City Municipal Corporation Council consists of a Mayor and 65 Ward Councilors representing each ward.

Trichy's growth can be better understood by focusing on two of its important sub centres- the manufacturing centres in the east and the temple town of Srirangam in the north.

1. South Eastern Trichy- a manufacturing hub

Trichy has benefitted from massive public sector investments in industry in the 1950s and 60s which are now the main employment centres of Trichy agglomeration. The most important among the public sector behemoths in Trichy is the Bharat Heavy Electricals Limited (BHEL), producing High Pressure Boilers in 1961 and located in the town of Thuvakudi that lies 25kms to the south east of Trichy city (Figure 4).

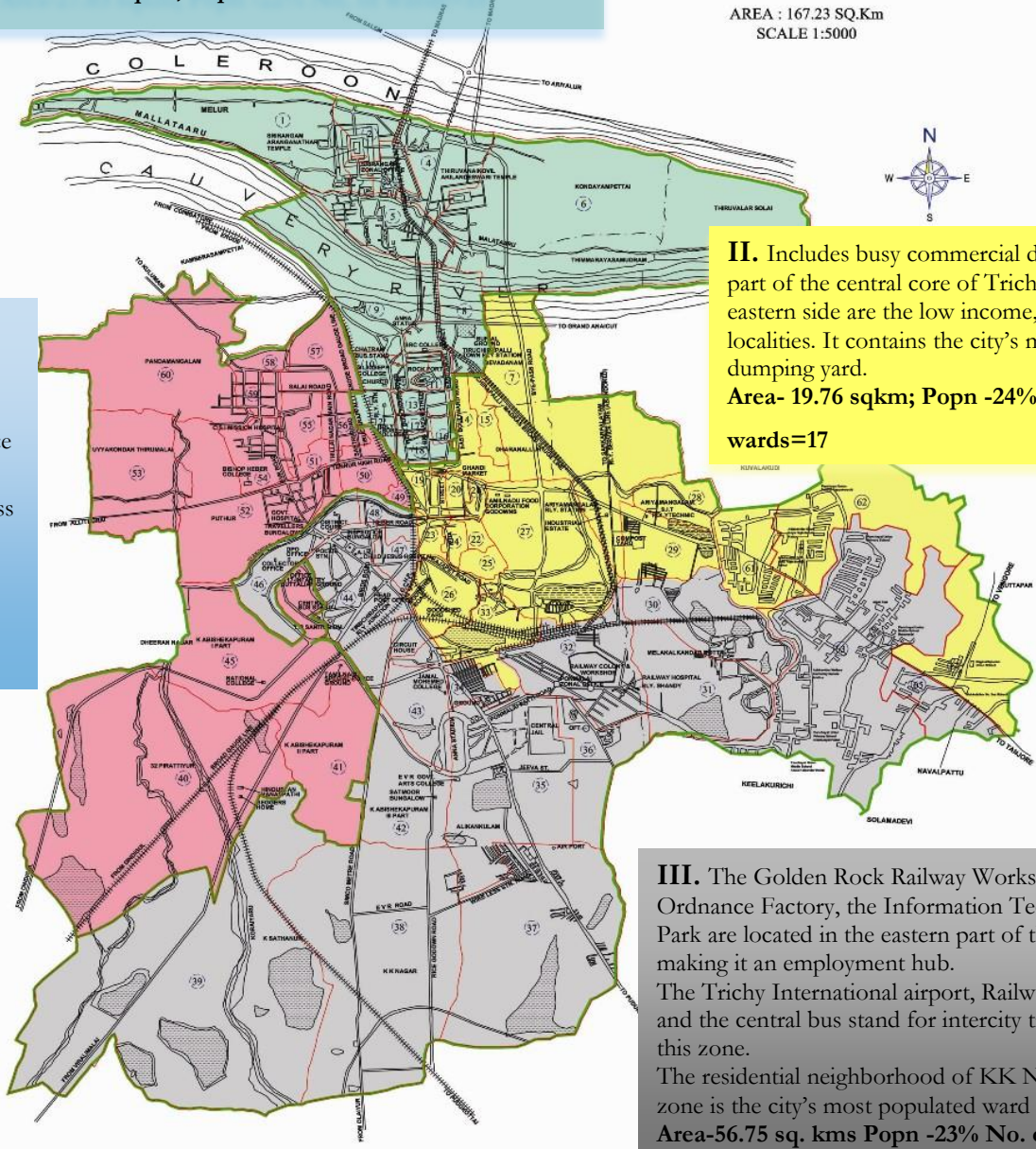
The BHEL factory has its own township consisting of 2500 residences for employees, along with amenities like schools, hospitals etc. The growth and expansion of large government industrial units like BHEL, the Golden Rock Railway workshop and the Indian Ordnance Factory in the past three decades, has resulted in phenomenal growth of ancillary micro and small-scale enterprises fabricating machine components or providing repair and engineering services to the big government factories. An estimated labour force of 1,20,000 is absorbed in the industrial belt around Trichy city (District Human Development Index, 2017).

With increasing industrialization of this region, population growth in the eastern part of Trichy has increased since accessibility to the manufacturing hub is via a National Highway that runs from eastern edge of the city to the southeastern towns where the manufacturing facilities are located. However, the more urbanized places of the agglomeration also bear the consequences of high urban growth in terms of sprawl and the creation of slums. A huge 26% of the industrial town of Thuvakudi also live in slums.

I. The river Cauvery separates Trichy city from the island town of Srirangam. The presence of an ancient, grand temple makes it a node for religious tourism in the region and impacts the economic and social life. On the other side of the river lies Rock Fort and busy bazaars of Old Trichy. **Area-27.03 sqkm; Popn -22% No. of wards=15**

TIRUCHIRAPPALLI CITY CORPORATION

AREA : 167.23 SQ.Km
SCALE 1:5000



II. Includes busy commercial districts that are part of the central core of Trichy but in the eastern side are the low income, less dense localities. It contains the city's main waste dumping yard. **Area- 19.76 sqkm; Popn -24% No. of wards=17**

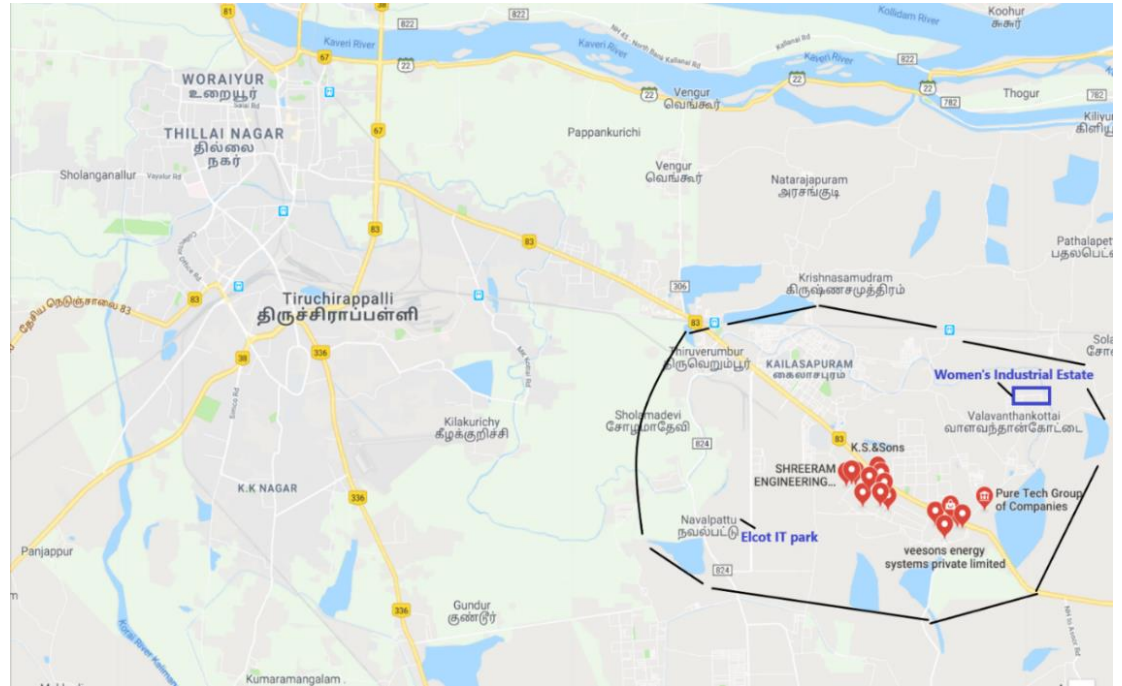
IV. Woraiyur is an important residential area. Thillai Nagar is an upmarket commercial and office area. Southern parts are less urbanized **Area-63.69 sqkm; Popn -31% No. of wards=15**

III. The Golden Rock Railway Workshop, the Ordnance Factory, the Information Technology Park are located in the eastern part of the zone making it an employment hub. The Trichy International airport, Railway junction and the central bus stand for intercity travel are in this zone. The residential neighborhood of KK Nagar in this zone is the city's most populated ward. **Area-56.75 sq. kms Popn -23% No. of wards=18**

NAME OF THE ZONE	WARD NUMBERS	AREA IN SQ.KM.	TOTAL
SRIRANGAM	1 to 6, 8 to 13 & 16 to 18	27.03	15
ARIYAMANGALAM	7, 14, 15, 19 to 29 & 33, 61, 62, 64	19.76	18
PONKALAI	30 to 32, 34 to 39, 42, 43, 44, 46, 47 & 48, 63, 65	56.75	17
K.ABISHEKAPURAM	40, 41, 45, & 49 to 60	63.67	15
TOTAL		167.23	65

Figure 6: Trichy City within municipal corporation limits and its four sub divisions. Source: Trichy City municipal Corporation website <http://www.trichycorporation.gov.in/cityinfo.php#menu>

Figure 7: Concentration of manufacturing industries in south east Trichy. Source: Google maps



2. Srirangam – Growth of religious tourism in the 21st century

The island of Srirangam in the north is connected to Trichy by bus, auto and taxi (Figure 5). From the centre of the island to the centre of mainland Trichy, it takes about 25 minutes by motorized transport. Srirangam is a self-sufficient small town whose economy revolves around the ancient temple located there which attracts tourists throughout the year. Following the election of the BJP party at the centre in 2014, whose ideology is based on right wing Hindu nationalism, a new revival of Hinduism in India is seen. Exhortations by religious preachers to come and live in Srirangam for a period of one year to experience spiritual satisfaction has been followed zealously by Tamilian Hindus, particularly those of the Brahmin (priestly) community, in other cities as well as those living abroad. Several retired people living abroad and in other parts of the world have bought or rented homes in Srirangam to stay there for certain periods in the year. This has led to a boom in real estate and in retail shops. Services targeted at the wealthier visiting population, like restaurants or internet cafes, have emerged. More branches of private banks have opened.

Consequently, Srirangam is one of Trichy's most sought after piece of real estate. (Refer property rates in Table 4). New real estate companies have emerged since the mid-2000s offering ready to move in apartments and independent houses. It has resulted in built up area on the banks of the Cauvery replacing erstwhile coconut and banana orchards.

This economic stimulus has boosted the availability of jobs in Srirangam. While previously, the local population would depend to a large extent on Trichy to get employment, now more jobs are available within the island than before. Within the sample, there are women from mainland Trichy have found jobs in the new restaurants that have opened in Srirangam, thus showing a movement of labour from the main city of Trichy to the smaller town, which was rarely found in earlier decades. One study (Pugazhendran, 2001)

shows that during the tourist season people otherwise engaged in farming earn income through tourism activities and in the off-season period return to the agricultural sector. This pluri-activity, i.e. of rural people combining income earning activities within and outside the agriculture sector has been noted as a consequence of urbanization in a study of social mobility in the region (Djurfeldt, 2008).

Figure 9b shows the zoom in view of urban growth resulting in sprawl in Srirangam. As per the population data of the Trichy city corporation, the population in wards 1 to 6 which lie within the island town, is 1,02,248 people. Out of the six wards in the town of Srirangam (Figure 9a, in wards 2 and 3 new construction is limited as much of the land here belongs to the temple. But if we calculate the population growth in wards 1, 4, 5 and 6, the average population growth between 2001 and 2011 is 33%. From a sleepy pilgrim town, it is now a perpetually congested place whose narrow streets were never designed to cope with the extent of vehicular traffic that it now has.

Figure 8. Trichy and Srirangam on two sides of the Cauvery river

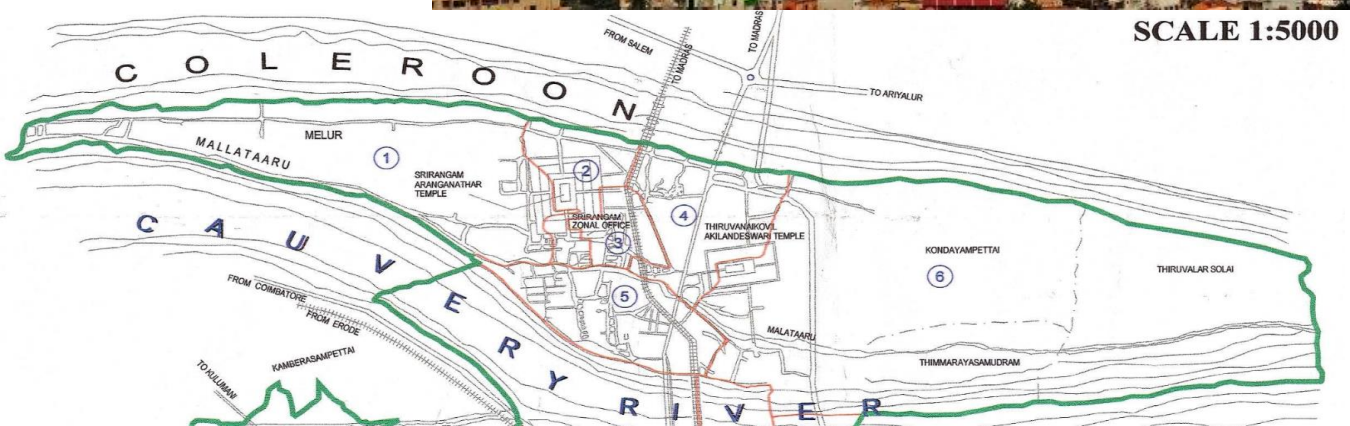
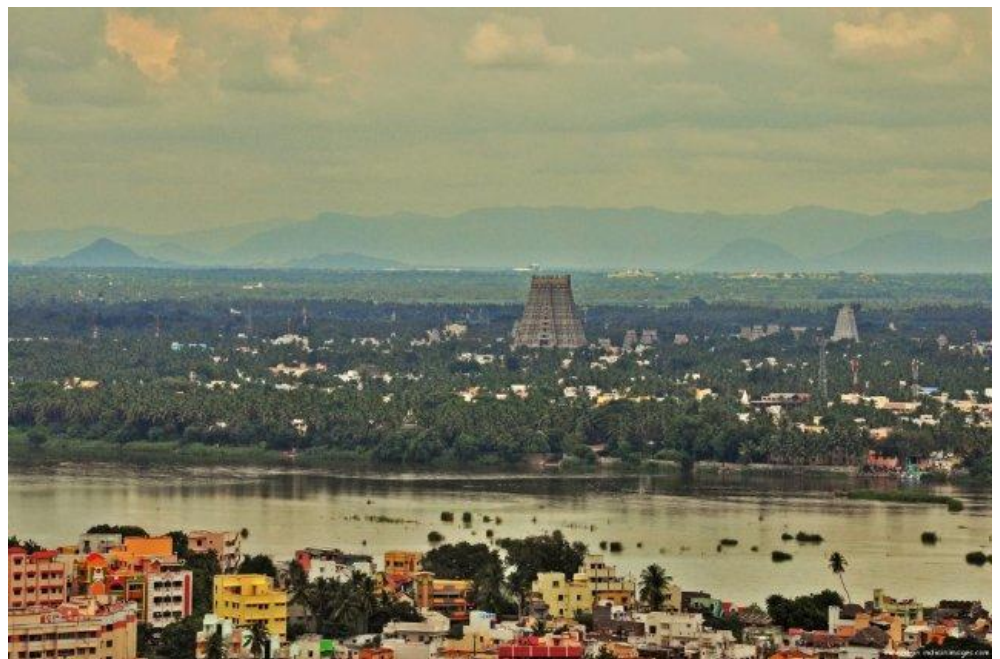
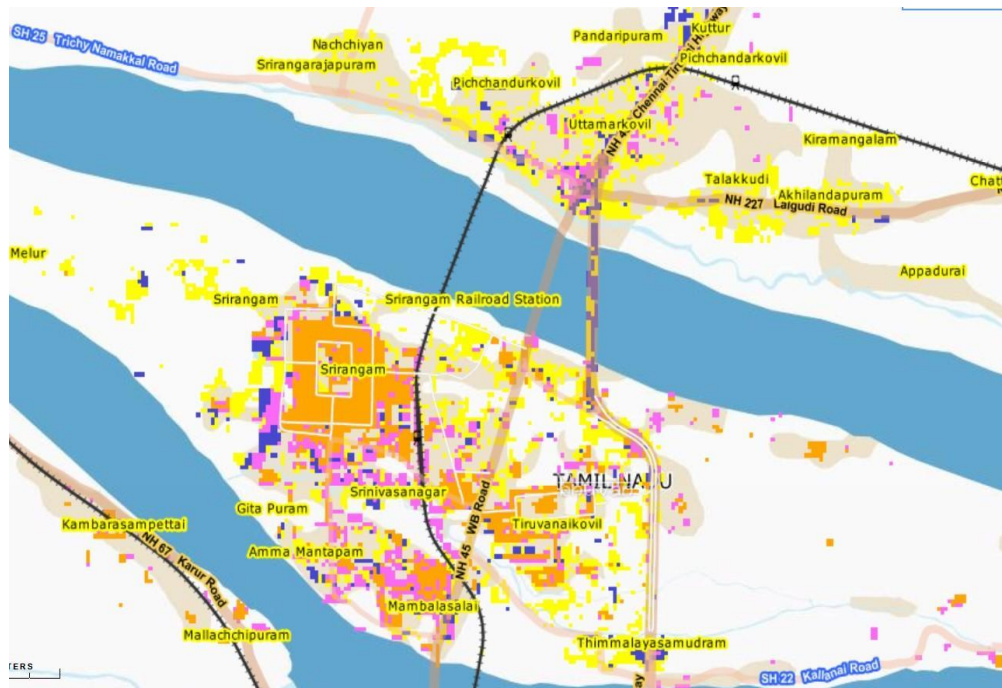
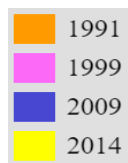


Figure 9a: Six wards of Srirangam. Source: Municipal Corporation of Trichy.

Figure 9b: Zoom in view of urban growth in Srirangam. Source: Bhuvan. Map not to scale



The increase in population and built up area has not translated to a proportionate increase in civic amenities as the town was not geared up for this boom. In 2011 there

were 6934 households in Srirangam sub district’s urban part. Among these, a mere 3.61% have piped sewer system. 38.3% had drinking water from a treated source. 9.7% had a closed drainage for waste water. A substantial 50.7% of these urban households use firewood to cook, although over 90% are connected to an electric supply. However, economic prosperity has made itself visible in terms of TV ownership (74%) and mobile phones (70%). (Census, 2011, Housing Amenities) (Census data on civic amenities is not available only for the island town of Srirangam separately but for a larger administrative unit called “sub district”, this includes the island and immediate surrounding small urban areas.)

IV. Roads and Transport

Trichy city has an international airport. The establishment of Trichy International Airport in 2012 was a turning point in the economic growth of the city. Located 5 kilometres south of the city centre, the opening of the airport makes Trichy the hub for both passenger and cargo in the region. It handles five times more international than domestic traffic, being a gateway for TAMILIAN immigrants in southeast Asian countries. Trichy is equidistant from Chennai and Bangalore, the two important metropolitan cities of southern India, lying at a distance of 330 kilometres from each of them. Trichy is an important railway junction and is the divisional headquarters of Southern Railway. Trichy is well connected with major centres including Chennai, Madurai, Tirunelveli, Salem and Coimbatore through a railway network. The National Highway NH-45 and several other State Highways connect Trichy to important neighboring towns like Thanjavur, Pudukkottai and Karur

1. Public transport in Trichy

The public transport in Trichy are in the form of buses run by the Tamil Nadu State Transport Corporation (TNSTC). Like in other cities, a large number of private operators also ply inter-city buses, connecting Trichy city to small towns in the agglomeration and beyond. Trichy has two main bus stands which serve as hubs for all buses passing through the city- Central Bus Stand in the south and Chatram bus stand in the north. There are three kinds of buses operating from these termini:

- a. **Long distance buses:** These mainly start from the Central bus stand which has 77 bus bays operating 2200 buses round the clock. It is the starting point of inter-district buses going to other big cities of the state, including to the capital Chennai, 340 kilometres away and even to other adjoining states like Kerala and Karnataka.
- b. **Mofussil buses** – These are buses that start from either of the bus stands, connecting Trichy city to surrounding small towns and villages.
- c. **Local buses-** These connect places within the city but necessarily terminate at either Chatram or Central bus stand.

The two bus terminals are extremely busy, crowded and congested places with not enough bus shelters or waiting areas for passengers (Ganesan, *The Hindu*, 2012) (Balaganessan, *The Hindu*, 2014). As of 2016, 350 government buses and 147 private buses were operating in Trichy city on different routes. However, rather than branch off into a network connecting different parts of Trichy to each other, they follow a largely linear north-south route beginning at Central bus stand and heading towards Chatram and vice versa. As a result, connectivity between east and west Trichy is poor, as attested in the mobility problems of respondents living in these parts of the city. Auto Rickshaws and cab services from services like Uber are also available. Cycle rickshaws ply within the island of Srirangam, as auto rickshaws are restricted in certain areas close to the temple complex.

2. Traffic and Congestion

The National Highway 45 (NH45) that cuts right through Trichy city, is one of the most congested highways in south India and carries almost 10,000 trucks on the Trichy–Chennai stretch every night. A semi-ring road connecting all the National Highways is being constructed to ease traffic congestion in the city. In 2014 work began to make the National Highway 45 connecting Trichy to Chennai into a six-lane highway. According to the statistics of the Regional Transport Office of Trichy, in 2013, there were an estimated 328,000 two wheelers, 93,500 cars and 10,000 public transport vehicles operate within the city limits, apart from the 1,500 inter-city buses that pass through the city daily. (Gokul. R, 2013). As a result, according to the WHO, Trichy was the second⁷ most polluted city of the state, after Chennai, with a global air pollution rank of 314. Another study

⁷ AQI is represented as numeric value varies from 0 to 500. If score is 0, it is the best air quality and if score is 500, it is the worst air quality. There are six AQI categories, namely Good, Satisfactory, Moderate, Poor, Very Poor, and Severe.

analyzed air quality index (AQI) data for 28 towns in Tamil Nadu for the year 2015 and found that in almost all towns AQI fell under 'good' or 'satisfactory' category, except Trichy where the majority of the days the AQI was 'moderate'. (Rajamanickam and Nagan, 2018).

The increase in urban population has brought more automobiles onto Trichy's roads which move more slowly because of traffic jams, thereby increasing emissions. (Gautham, TOI, 2016). Trichy suffers from traffic congestion mainly because of its narrow roads and absence of an integrated bus station, a project which the state government is working towards.

The lack of municipal services in Trichy, like neighborhood roads or water supply, does not seem to hinder its growth in certain directions. (Anand and Wankhade, 2014). Residential colonies have developed in parts of the city which were lacking in well-developed roads, for example around an arterial road in northwest called Vayalur Road (See Zone IV in map in Figure 6). An image of the congestion around this road is shown in Figure 10. Currently, several agencies at the city level of Tiruchirappalli are involved in the management of various components of urban transport. These include Tiruchirappalli Local Planning Authority (LPA), Tiruchirappalli City Municipal Corporation (TCMC), Traffic Police, Tamil Nadu State Transport Corporation (TNSTC), Public Works Department (PWD), Directorate of Town and Country Planning, etc. A report of Trichy's current transportation issues by the Ministry of Urban Development under its Sustainable Transport Project, (MoUD, 2016) points to limited coordination among these agencies each tending to prepare its plans individually in isolation. There is no effective planning and coordinating agency or a common platform where individual plans of each of the agencies can be integrated, keeping the overall goal of improving urban mobility in focus.



Figure 10: Traffic congestion on Vayalur Road, western part of the city (Source : The Hindu)

V. Endnote

Post the liberalization of the Indian economy in 1991 there has been a spurt in private sector investment not only in metropolitan cities but also Tier II cities like Trichy. Along with lower real estate costs than in big cities like Chennai and lower wage rate Trichy became an attractive destination for private sector companies who are driven by cost compulsions, like software. A sprawling software park was inaugurated by the government near Trichy airport in 2010, offering tax breaks and low-cost land to software companies willing to locate their operations there. The “engineering culture” due to the presence of BHEL and related engineering companies and several engineering colleges (e.g. National Institute of Technology) providing a talent pool of technically qualified young people makes Trichy an attractive destination for technology companies. Trichy is also becoming the centre of energy equipment manufacturing with Chinese companies setting up operations in the city’s outskirts.

Trichy has always prided itself on being a centre of learning, knowledge and education in Tamil Nadu. Apart from being the birthplace of the Nobel Laureate in Physics Sir CV Raman, it has been home to early Jesuit institutions like St. Josephs College set up in 1828. In recent years, prestigious national educational institutes like the Indian Institute of Management, and National Law School have set up campuses in Trichy. This is driven by the government’s thrust for balanced regional development of Tamil Nadu and the availability of larger space in Tier-II cities like Trichy to establish large campuses. The presence of these educational institutes also attracts population from other cities in Tamil Nadu and Kerala to come to Trichy, both as students and as employees of these institutes.

The rapid population growth discussed earlier, and the resulting urbanization is causing erstwhile agricultural lands to be converted into apartment blocks, especially in the island of Srirangam, whose fragile ecosystem is struggling to cope with the influx of people and spurt in activity. Urban sprawl is a feature of the agglomeration’s urbanization since the beginning of the 21st century putting a strain on civic services such as water, sanitation and public transport.

In June 2017, Trichy city bagged a spot in the list of the 30 smart cities across the nation selected by the central Ministry of Housing and Urban Affairs. Trichy will be getting a fund of at least Rs. 1,000 crores for development work in the next five years. The municipal corporation has a plan to construct 52 modern bus shelters in Trichy with air conditioning, water dispensing units and toilets, under the Smart City Proposal (The Hindu, July 2018). These initiatives directly benefit working women who use public transport extensively to get to work (See Research Question 3). On non- work trips too, women may often be holding bags and managing children. Waiting in the open in crowded public areas, especially in the hot summer, makes transit more difficult. Thus, any improvements in transit and transportation, while having universal benefit, is particularly advantageous for women passengers.

The informal economy of street vendors is the key reason for women’s non-work trips in smaller Indian cities being short and time efficient. In all Indian cities, street vendors of daily necessities such as vegetables are a source of immense relief to busy working mothers. As some of the respondents narrated, they could stop by and buy vegetables even at 10 p.m. The Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014 recognizes street vending as an integral part of the urban retail trade and provides street vendors legal status.

Municipal authorities are to provide a range of civic services to street vendors including allocation of designated areas for their trade. Under the Smart City initiative to clean up the city of all that appears “unauthorized”, the corporation needs to ensure that street vendors are not ousted, as feared by the community (The Hindu, October 2018). Such a policy would be gender blind and affect women more than any other group adding to the distance traveled for household chores.

SECTION B

Research Question 1: What are the Mobility Characteristics Of Working Women in Trichy?

1. Estimating the universe of Working Women in Trichy

As in the case of Jalandhar using census data we estimate the universe of working mothers with dependent children in Trichy as shown in Table 5.

Table 5: Universe of the Trichy study. Source: Table F-8 Indian Census2011- Number of Women and Ever Married Women by Present Age, Economic Activity, Number of Surviving Children And Total Surviving Children By Sex - 2011		
Age	Total Working women in each age group in Trichy district (urban)	Working women with children In Trichy district (urban)
25-29	9983	4231
30-34	9687	7083
35-39	11273	9434
40-44	10775	9144
45-49	8911	7454
TOTAL	50629	37346
Universe of working mothers in 25-50 age group in Trichy district		37346
Population of Trichy district (urban)		13,38,033
Population of Trichy urban agglomeration		10,22,518
Applying same percentage (76.4%)		=76% x 37346
Universe of working mothers in the age group 25-49 in Trichy urban agglomeration		= 28,382

3. Profiling Working Women in Trichy

Table 6: Education Levels of Working Women in Age Group 25-49 In Trichy	
Source: Indian Census 2011. Table B-9 Main Workers by Educational Level, Age and Sex - 2011	
Illiterate	19%
Literate	81%
Literate but below high school	36%
High school but no university degree	20%
Technical diploma or certificate not equal to degree	5%
Graduate and above other than technical degree	25%
Technical degree or diploma equal to degree or post-graduate degree	10%

Work Participation Rate (WPR) is a measure of the active portion of an economy's labour force. It refers to the number of people who are based in economically productive activity in the total population. About 35% of Trichy's working women have a college degree as seen in Table 6. The urban work participation rate (WPR) for the district for females is 17.8% while the corresponding figure for men is 56.6%. (District census Handbook, 2011, Part A). Trichy's WPR is higher than the all India WPR for urban women which is 15.4%. (Verick, 2014). Non-working women in Trichy form 82.2% of the female population while only 43% of the male population are non-workers. These figures being better than that for other similar districts like Jalandhar could be attributed to a more liberal attitude to women's working in southern districts and an active public transport system that has been functioning soon after Independence. In Tamil Nadu, usage of public transport by women is an ingrained habit. It could have an important role to play in women's ability to access places for work and hence their motivation to work outside home.

The graph below in Figure 11, shows the employment distribution for urban working women in Trichy district between the age group of 25-50, the focus of this study. The data taken from the Census 2011, exclude agriculture, cultivation and mining and excludes household Industries. Hence it is as close an approximation to the target group of this study, as is possible from census data.

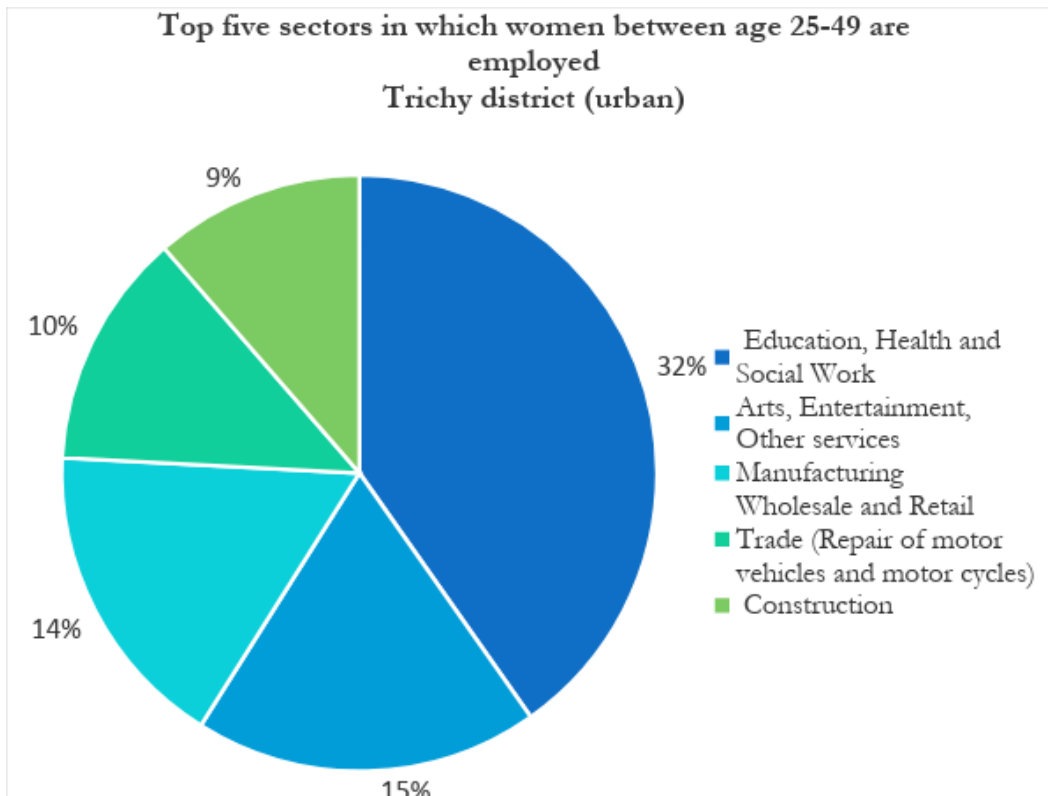


Figure 11: Top five sectors where women in Trichy are employed.

Source: Author using data from Census 2011.

Table B - 4 Main Workers Classified By Age, Industrial Category And Sex.

A little more than one third of urban working women in Trichy in the age group of 25-50 are found in the education, health and social work sector. In these sectors, the percentage of men employed is 38% versus 62% of women. Owing to the high educational level of women in the state, school teaching is the most common profession among women of the state of Tamil Nadu, which is reflected in Trichy's employment pattern.

The presence of 14% of women in construction is notable. This occupation falls under the 'informal sector' of labour in India where workers are paid a negotiated wage rate but are not covered under any formal contract and have no security of tenure. Women account for half (51%) of the total construction labour force in India. They are almost exclusively unskilled, casual, manual laborers: carrying bricks, cement, sand, and water. Even within construction, they are rarely found in male-dominated skilled trades: carpentry, masonry, plumbing, electrical wiring (Jhabvala and Kanbur 2002).

A meeting with Prof. Manimekhalai of the Women's Studies department of Bharatidasan University revealed women's inability to move up the ladder even in the informal sector in Trichy. In 2012, the Bharatidasan University in Trichy conducted a workshop to teach masonry skills to women who were employed as labourers on construction sites. The mason in the construction site is always a male and the women labourers do the less skilled jobs of ferrying cement, water and bricks, as instructed by the mason. To upgrade the women's skills, the department of Women's Development of the University, arranged to teach

them masonry skills. However, a follow up of the project showed that none of the women had graduated to a higher skill level of a mason because they were not given the opportunity. This example illustrates the difficulties women have in breaking through traditionally male dominated employment sectors. This thus limits the range of jobs available to women, especially poor women who do not have a choice but to seek paid employment.

Trichy is a manufacturing hub of Tamil Nadu with more than 500 manufacturing units present in and around the agglomeration, as we saw in the section on the description of the city in the beginning of this chapter. The census reveals that 14% of all working women are engaged in the manufacturing sector. However, when we see the total population of workers engaged in manufacturing in Trichy, 82% of them are men (Census, 2011, Table B4). While many women maybe working in the manufacturing sector, because it is such a prominent employer in the city, women still form a small minority of the total number of workers in manufacturing. The public sector giant BHEL which is the pride of Trichy’s industrial map, has only 2367 female employees, across its offices in India, among its total of 42,000 employees. (BHEL Annual Report, 2014). The number of female employees in BHEL Trichy is estimated to be about 300 including health professionals who are employed in the hospital on its premises.

More precise numbers which demonstrate women’s underrepresentation in Trichy’s manufacturing sector are given below from the census. In all manufacturing which is done in a factory and requires technical skill, women are barely present. They are more present in the manufacture of primary material (last row) where a high proportion of casual unskilled labour is employed.

Table 7: Gender split within some manufacturing industries in Trichy		
Source: Author using data from Census, 2011. Table B-20		
Type of manufacturing	Women	Men
Electronics and electrical equipment	13%	87%
Machinery	7%	93%
Transport equipment (land, rail and air)	9%	91%
Metal Products	3%	97%
Manufacture of rubber, plastic, clay, lime, petroleum products, chemical	24%	76%

The state government has offered several incentives to encourage women entrepreneurs. In

Valavandankottai in the southeast, a Women’s Industrial Estate (Figure 7) has been set up where women entrepreneurs are allotted land plots for setting up units of small scale manufacturing. However, the experience of Women’s Industrial Estates in Tamil Nadu has not been very good with lack of electricity, water supply and basic facilities like telephone connections, garbage disposal and streetlights thwarting the aims of setting up such a facility. (Vandhana.M, 2013) (The Hindu,2012) Due to this, women entrepreneurs who set up their businesses in Women Industrial Estates could not grow their business enough to repay their bank loans. Banks demand collateral like jewellery and land deeds from these women entrepreneurs which family members are not willing to give and the unit eventually closes down or does not

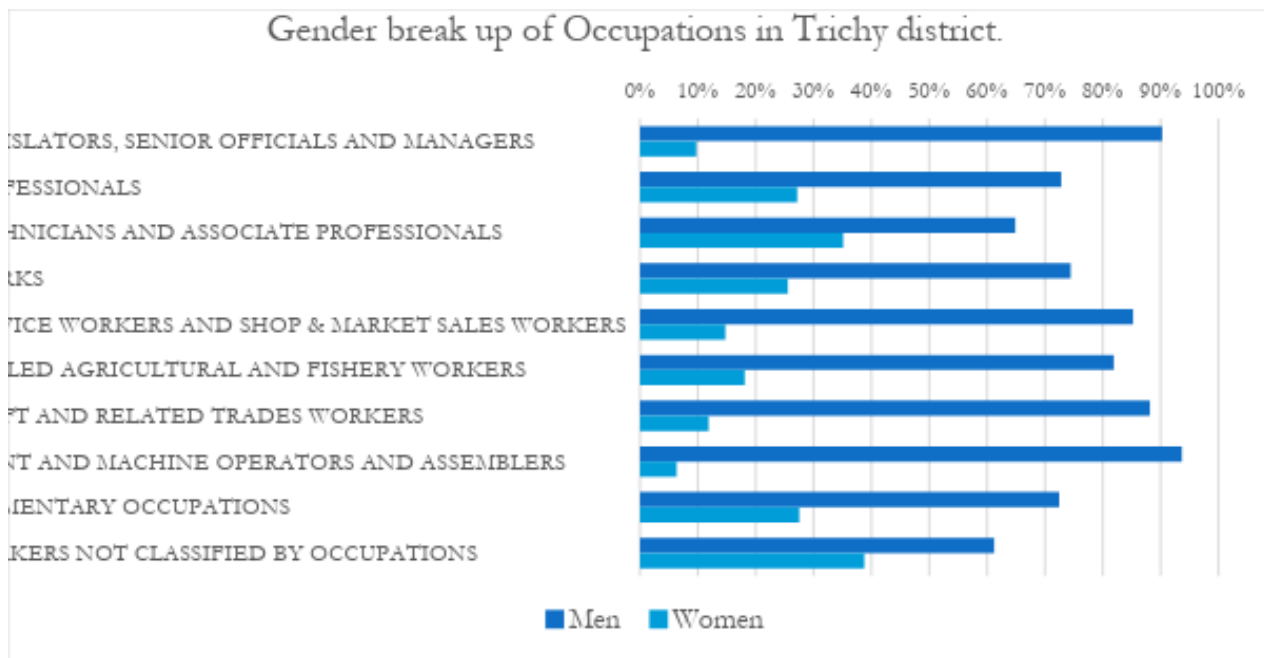


Figure 12: Gender distribution of occupations among Trichy district’s workforce.
 Source: Author using data from Census 2011. Table B-27. http://www.censusindia.gov.in/2011census/B-series/B_27.html

even begin. Despite good intentions, the Women’s Industrial Parks have not been of real help to the women in the districts where it was set up because of a lack of support system. Figure 12 shows a different perspective of the kind of occupations that working women in Trichy are employed in, irrespective of industry. (This data, also from the Census is for all working women, not specific to the 25-50 age bracket). It shows the appalling difference between working men and women in terms of the kind of jobs. While women are a minority in the highest paying occupations like Legislators, senior officers, managers and professionals, they are found in much greater numbers in the bottom two occupations of “Elementary Work” and “Unclassified Occupations.” These figures must be seen in the context that Trichy’s women have relatively high levels of education compared with most other districts in India. In the urban part of Trichy district, 22% of women have a university degree and 10% are graduates or postgraduates in a technical field. The corresponding figures for Tamil Nadu are 18% and 8% respectively.

4. Mobility of working women in Trichy

As in Jalandhar, (Chapter 5, Research question 1, (2)), census data about working women's journey to work in Trichy district (urban) was compared with the data for 40 districts in the same population band and with the All India (urban) level. In Trichy, the figure of 'No Travel' of 26% (Table 8) is much below the average in urban India/similar districts, which is 35/37%. A probable reason for this could be the existence of public transport, which enables more women to access work outside the home and undertake long journeys if required. (To recall: in contrast, Jalandhar figures for 'No Travel' was 40%, probably because of lack of public transport).

Table 8: Comparison of transport modes used by working women in Trichy with the rest of urban India. Source: Author using data from Census 2011. Table B28				
In percentage	Urban India	Other 40 districts of similar size	Trichy (including No Travel)	Trichy (Excluding No Travel)
Very Short 0-1	19	18	20	28
Short 2-5	22	24	25	34
Medium 6-10	12	12	14	19
Medium-long 11-20	5	4	6	9
Long Above 20	5	5	7	9
No travel	35	37	26	-
Not stated	2	-	2	1
TOTAL	100	100	100	100

This might also explain the number of working women travelling long distances over 20 kms being higher than the national average. Among the women who do travel, a majority travel between 2-5 kilometres, consistent with the rest of urban India. The fact that public transport is a catalyst to greater freedom of mobility in Trichy is shown in Table 9 where a huge 41% of women travel to work by bus, while the national average for bus journey to work is only 17%. The national average and that of selected 40 districts is low because most cities in the scale of Jalandhar and Trichy have only a skeletal bus service system. Like elsewhere in India, a majority of working women in Trichy too travel on foot.

Table 9: Comparison of transport modes used by working women in Trichy with the rest of urban India.			
Source: Author using data from Census 2011. Table B 28			
In percentage	Urban India	Other 40 districts of similar size	Trichy
Bus	17	17	41
Bicycle	7	7	5
Motorized two wheelers	13	13	10
On Foot	48	48	39
Car	5	5	3
Informal paratransit	8	8	1

In addition Ola cabs, that can be booked through an app, are also easily available though they are likely to be used by the more affluent class of working women..

5. Conclusion

Evidently, there is stark occupational segregation between genders in Trichy's labour market. A more detailed examination of sub categories of employment in the census data shows that women are overrepresented in education, health (including nursing and home care) manufacture of tobacco products and cleaning activities (industrial cleaning, cleaning of buildings etc.). They are underrepresented in transport, manufacturing and construction. They are in a minority in senior positions within these sectors and are more found in occupations that are basic or not classifiable under the official system. Despite Trichy's huge economic thrust on manufacturing, women are in a minority in this sector and even those who are there are more present in the manufacturing of primary materials like clay, rubber etc. which engages more informal, daily wage labourers.

Mobility of working women is facilitated by the existence of a public transport system of buses in Trichy. Although these may not offer the best journey quality as we shall read ahead, the fact that the bus service exists is an improvement over many cities of comparable size. Working women travel mainly within 5 kilometres though some undertake very long journeys above 20 kms one way, indicating an active transport system and liberal social attitudes to women in public places in Trichy.

SECTION C

Sample Characteristics

Daily trajectories of respondents	
City ↔ City	27
City ↔ Agglomeration town	7
City ↔ Outside agglomeration	2
One agglomeration town ↔ another agglomeration town	
Total	36

Family structure					
Age of children			Marital status ⁺		Total
At least one child below 10	At least one child between 10-18	All children above 18	Married	Single	
11	24	1	34	2	36

⁺Married here also refers to those who are living with a partner but not married. Single refers to both divorced and widowed

	Types of jobs			
TEMPORAL	SPATIAL	Salaried	Self Employed-Out of house	Self Employed-Work from Home
FIXED HOURS	FIXED WORKPLACES	26	1	2
VARIABLE HOURS	FIXED WORKPLACES	7		
VARIABLE HOURS	VARIABLE WORKPLACES			
Total		33	1	2

Socio Economic Class of respondents

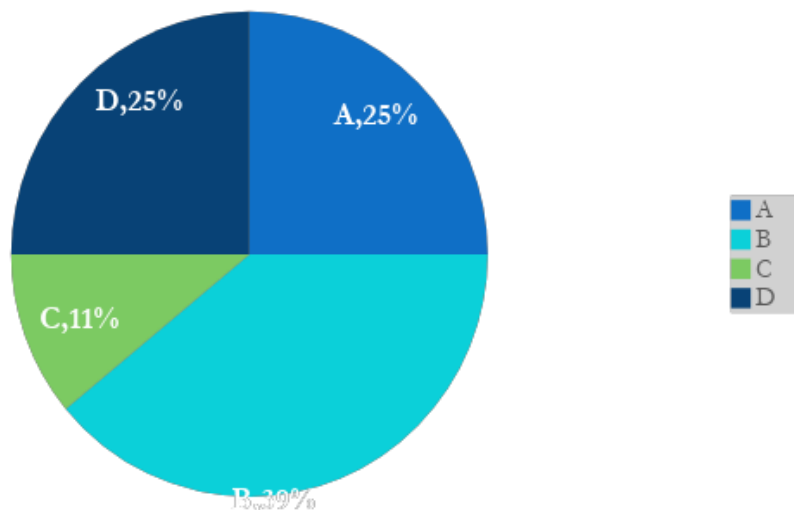


Figure 12: Socio economic classification of Trichy respondents as per classification described in Annexure 8

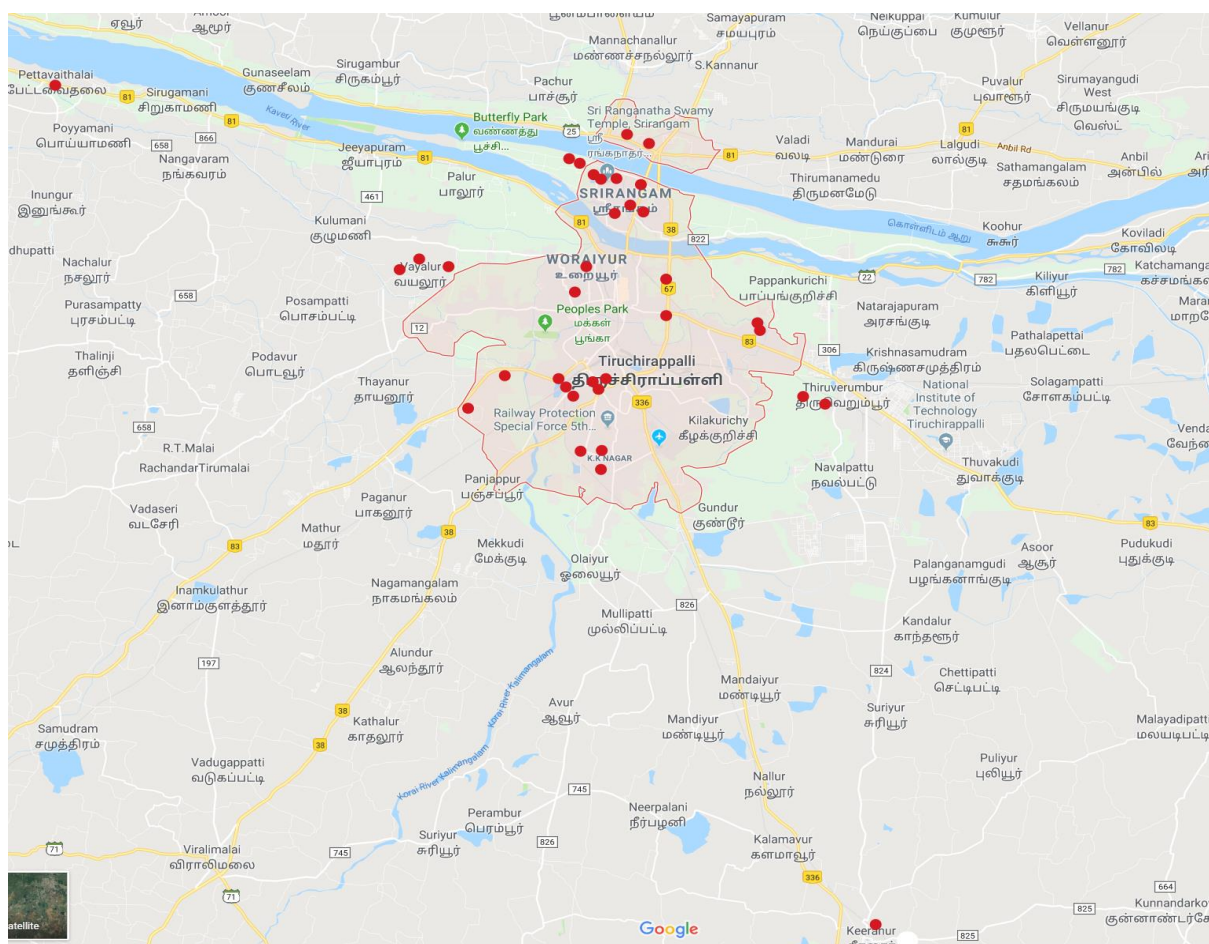
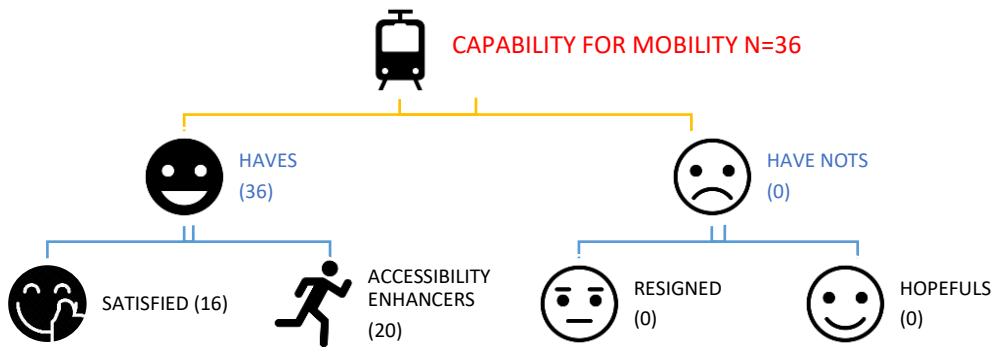


Figure 13: Residential location of respondents in Trichy sample N=36. Map source: Google maps

Research Question 2: What is the extent of the Capability for Mobility among urban working mothers and what factors influence this capability?

Achieved Functionings



Potential Functionings

Figure 14: Classification of the Trichy sample according to the possession of Capability for Mobility

In Trichy, according to the criteria of ability to travel independently in any mode of transport other than walking, there were no Mobility Have Nots. Even the poorest respondent, such as Dhanam, a widow who is a domestic maid, had the capability to travel by public transport if required. This is both due to the easy availability of buses in the city interconnecting different places and a long prevailing urban culture of using public transport, especially by women. Additionally, the more liberal social practices in the south with respect to women, ensure safety on the streets and this in turn, enables women to be in public space even in late hours. One of the respondents, Sajda, a Muslim woman from Kerala who had moved to Trichy three years ago, observed the sense of freedom that women in the city enjoyed compared to other places when she said:

“In comparison to Kerala, I have seen that ladies work even in the nights in Trichy. I have seen in shops too; they work till 10 or 10.30. p.m. selling bananas, flowers.... In Kerala, though women are more educated, they will not work

in the nights. By 7, they wind up. I think people over there fear that it is not too safe to travel in the night. When we came to Trichy first, I have seen women travel by bus even at 2 in the night. I was shocked!”

Another respondent Krithika is a helper in a tailoring shop which stitches women’s saree blouses. She lives in a semi-rural area in Manchanallur, in the northern part of the agglomeration beyond the Coleroon river(see Figure 4 earlier). She is educated only up to primary school. Yet, she is able to go by bus to visit her brother or mother living in other villages or towns and is not uncomfortable to wait in bus stops in the remote area where she lives.

“Yes, I can. I am confident. I know to read bus numbers; I know areas in the city. I go on my own to mom s house, Trichy...”

Thus, all thirty- six women interviewed had the Capability for Mobility by being free and able to travel by different modes of transport, even in the late evenings. As shown in Figure 14, all the respondents in Trichy were “Mobility Haves”. **Of these 16 were “Satisfied”** i.e. they did not express any inadequacy in their existing level of mobility or modal choice. Those among them who were walking were not desirous of two wheelers and those who were using two wheelers were able to access destinations that were relevant to them and did not feel the need to drive a car. The **remaining 20, who we classify as “ Accessibility Enhancers”** were those who wanted to upgrade their present mode of transport to be able to better access places and/or those who expressed dissatisfaction with their present mode of transport. The circumstances of these women are dealt with in the addressing of the next research question.

Research Question 3: Do women who have mobility in Trichy also have the capability for spatial access?

Some respondents who lived or worked outside the agglomeration, covered long distances of over 50 kilometres per day spending more than two hours on travel in some cases. The barriers they faced were not on account of immobility but on account of the difficulty in accessing their place of work. Spatial access to workplaces was impeded either because of public transport problems or because of problems faced even while using private transport like two wheelers. The following sections dwell on how these Accessibility Enhancers want to improve their Capability for Spatial Access. We begin by attempting to grade those who have accessibility problems on the basis of the multiple dimension index we used earlier in Jalandhar.

I. Evaluating Accessibility using the Alkire-Foster counting methodology

All the respondents who had mobility but expressed a desire to enhance their accessibility through better means of transport have been considered for the evaluation. Using the same methodology described for Jalandhar in Chapter 3 (Part D, Research Question 3 (1)), we measure individual accessibility for each of Trichy's respondents, as shown in Table 10 on the following page. In Trichy, the accessibility deprivation score at 1.7 is higher than Jalandhar's which was 1.3. The obvious reason for the difference is that more people in Jalandhar used personal vehicles in the absence of public buses, hence their ability to access places was higher. In Trichy, the percentage of respondents using public transport is as high as- 60%. Public transport is fraught with issues of uncertainty of timings and longer travel duration due to wait times, which raises the Accessibility Deprivation Score. There are 9 respondents who have above average Accessibility Deprivation scores. While the average is 1.7, six of them have a score of 2 and four respondents have a score equal to or above 4. This high score indicates that the women are accessibility deprived on several dimensions. **Most significantly, almost all of the accessibility deprived are users of public transport.** While some are commuters within the agglomeration, others live outside the agglomeration and come to Trichy city for work.

Table 10: Accessibility deprivation of Trichy Respondents

1	2	3	4	5	6	7	8	9	10	11	12	
Mode	Name	Time spent on all travel	Score	Number of trips within the journey	Score	Distance to transit stop	Score	Comfort /duration of trip/ connectivity timing	Journey Quality score (Max)	Score	Accessibility deprivation score	
1	Public Transport-Bus	Amba	120	1	12	1	2	1	Duration of trip/Timing uncertainty/ connectivity	1.5	1	4.00
2	Public Transport-Bus	Kamaksh i	105	1	12	1	2	1	Duration of trip/Timing uncertainty /connectivity	1.5	1	4.00
3	Public Transport-Bus	Meena W	130	1	8	1	2.5	1	Duration of trip/Timing uncertainty/ connectivity	1.5	1	4.00
4	Public Transport-Bus	Jhansi	129	1	8	1	3	1	Comfort/Timing uncertainty	1	1	4.00
1	Public Transport-Bus	Anu	169	1	6	0	1	0	Duration of trip/Timing uncertainty	1	1	2.00
2	Public Transport-Bus	Sumati	135	1	5	0	1	0	Comfort/duration of trip/timing uncertainty	1.5	1	2.00
3	Public Transport-Bus	Malini	70	0	7	1	1	0	Connectivity/ Comfort	1	1	2.00
4	Public Transport-Bus	Sasi	96	1	6	0	1	0	Comfort/ timing uncertainty/ connectivity	1	1	2.00
5	Private-Two wheeler	Shruti	110	1	7	1		0	Comfort	0.5	0	2.00
6	Public Transport-Bus	Gomathi	65	0	6	0	2	1	Timing uncertainty	0.5	0	1.00
7	Public Transport-Bus	Tapti	60	0	5	0	1	0	Duration of the trip/Safety	1	1	1.00
8	Private-Car/Car Pool	Kannam ma	130	1	4	0	na	0	Safety	0.5	0	1.00
9	Private-Car/Car Pool	Hema	90	1	5	0	na	0	No remarks	0	0	1.00
10	Private-Two Wheeler	Satya	90	1	8	1	na	0	Safety	0.5	0	2.00
11	Auto/Rickshaw	Mekhala	75	0	4	0	1	0	Comfort	0.5	0	0.00
12	Private-Two Wheeler	Girija	55	0	3	0	na	0	Comfort	0.5	0	0.00
13	Private-Two Wheeler	Rajalaksh mi	35	0	2	0	na	0	Safety	0.5	0	0.00
14	Private-Husband's Vehicle	Elizabeth	35	0	4	0	na	0	No remarks	0	0	0.00
15	Non Motorized	Nirmala	10	0		0	na	0	No remarks	0	0	0.00
AVERAGE			90		6.2		1.6			0.76		1.7

Table 11: Summary of accessibility constraints of the most 'accessibility deprived'			
	Personal Conversion Factors	Social Conversion Factors	Environmental Conversion Factors
<p>Amba, Kamakshi, Meena W, Jhansi Waitresses and cleaners.</p> <p>Commute within Trichy city but home and residence in opposite ends</p>	<p>Inhibitors:</p> <p>Have no personal vehicle; being low income have no choice but to use public transport.</p> <p>Need job due to financial constraints</p>	<p>Enablers:</p> <p>Are able to do a shift job that ends at 10.p.m. but can travel confidently and securely back home, interchanging buses.</p>	<p>Inhibitors:</p> <p>Uncertainty of bus timings</p>
<p>Meera, Manager in public insurance/finance companies.</p> <p>Commute within Trichy city</p>	<p>Inhibitors:</p> <p>Does not drive.</p> <p>Has a car but only husband drives.</p>		<p>Inhibitors:</p> <p>Uncertainty of bus timings, inconvenient connections</p>
<p>Sasi, Sumati, Anu, Shruti</p> <p>Educated, middle class.</p> <p>Work in private/ public organizations</p> <p>Commute from Trichy agglomeration to outside towns.</p>	<p>Inhibitors:</p> <p>Needs job due to financial responsibilities as husband is out of town or earns less than her.</p> <p>Have to stay close to mother 's home for child care help. Totally dependent on parents for child care.</p>	<p>Enablers:</p> <p>Despite long distance commute are not insecure about physical safety</p> <p>Are able to have parents highly involved in their lives or staying with them in the same house.</p> <p>Involvement with natal homes in Indian society is usually less after a girl's marriage in Indian society. Hence this shows a liberal attitude in Trichy society.</p>	<p>Inhibitors:</p> <p>Employment is concentrated in Trichy city and few opportunities in surrounding towns.</p> <p>Bus connection between home and office takes long</p>

From Table 11 above, we obtain an understanding of the personal, social and environmental factors that diminish the respondents' capability for spatial accessibility. These factors are explained in the following section.

II. Factors affecting spatial accessibility in Trichy

1. Inefficiencies in public transport

The census shows that 41% of working women in the city of Trichy go to work by public transport i.e. bus as opposed to 26% of men. Almost an equal number-39% travel by foot against only 18% of men who go on foot. As per census figures, only 7.1 % of the 2,15,024 urban households in Trichy own a car. However, 42.3% own a two-wheeler or moped. Yet, 29% of men travel to work on a two-wheeler but only 10% of women do. Ownership of bicycles among households in urban Trichy is 48%, but while 20% of men travel by bicycles, only 5% of women use it to travel to work. Thus, women are avid users of public transport, mostly due to lack of access to other household vehicles.

The public transport in Trichy is a bus service, as we saw earlier in the chapter in Section A. Although the bus fleet is vast, the routing of the buses is not widespread. Buses travel from north to south-central mainly passing through the two bus terminals of the city. For those in the eastern and western fringes and the extreme southern fringe, connections are difficult, and interchanges are inevitable. Further, bus timings are uncertain, and passengers cannot plan their travel. Some of the problems the bus users grapple with are as follows:

a. Distance from the bus stop to reference point in remote areas

According to the UN guideline on Minimum Standards of Sustainable Transport, an estimate of the urban area with access to public transport is to map officially-recognized public transport stops and create a buffer area of 500m radius for each stop to see the gaps. Plotting the bus stops indicated on Google maps in Trichy city and marking an approximate buffer of 50 metres on either side, we arrive at the map in Figure 15. Prominent residential have been marked to show their distance from the nearest bus stop. As is evident, there is a concentration of built-up area in the west, southwest, southeast and parts of the island of Srirangam in the north which is much more than 500 metres from the nearest bus stop. One of the respondents, Jhansi, 40, lives in one such locality, Kattur in the east. She works as a cleaner in a government office in the centre of Trichy while her residence is in the extreme end of Kattur area. The walk from her home to the closest bus stop takes upto 15 minutes, as shown in Figure 16.

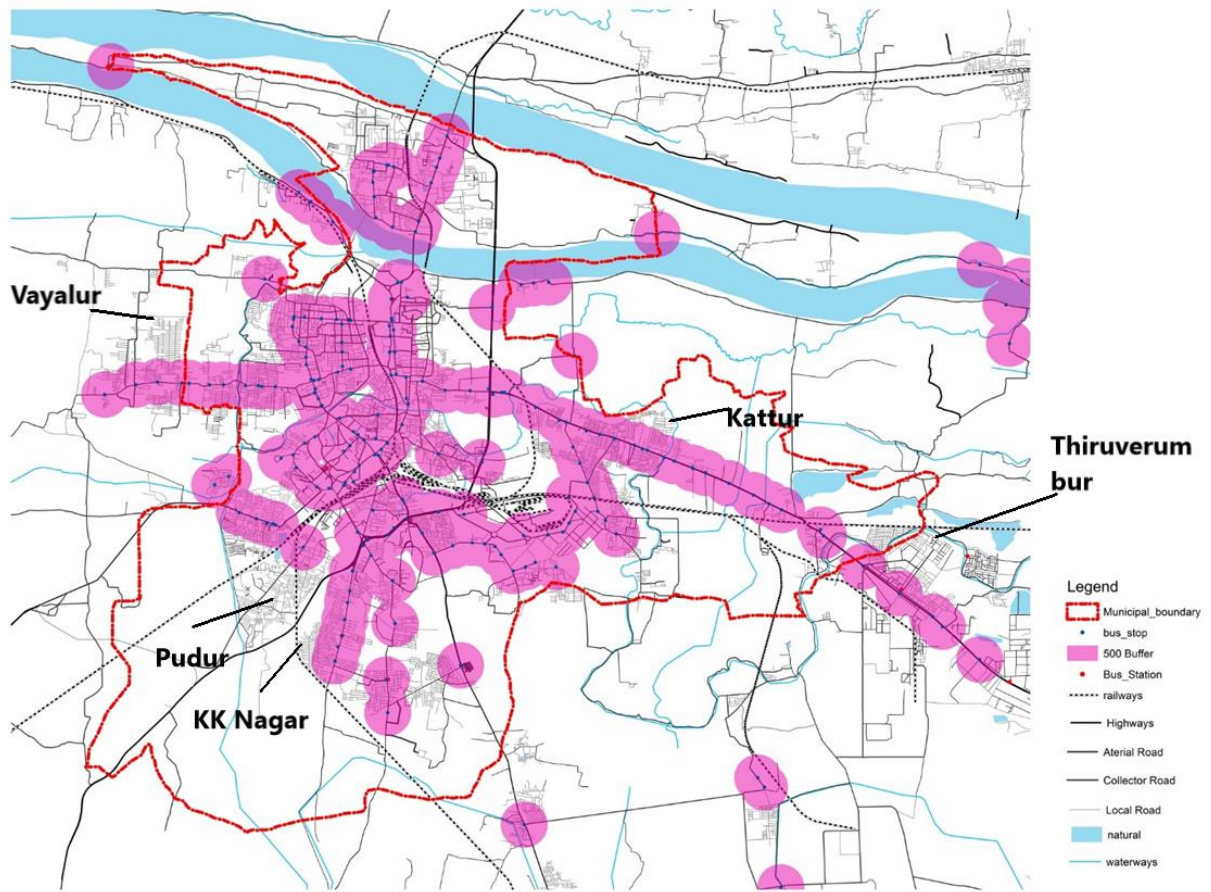


Figure 15: Bus stop analysis of Trichy city .Map not to scale. Location of areas is approximate.

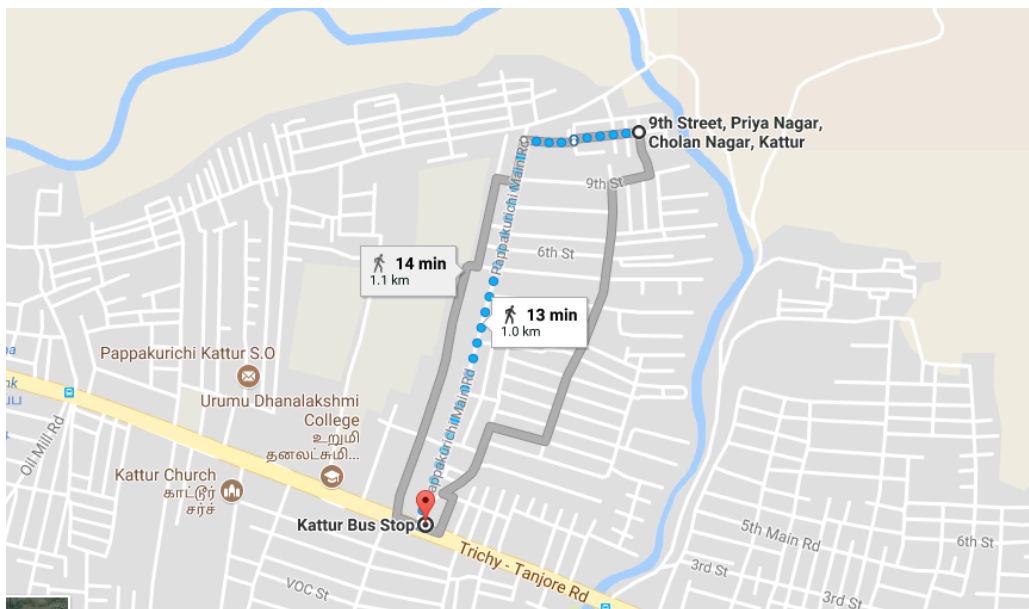


Figure 16: Distance from a respondent's home to bus stop in Kattur

b. Uncertainty of timings / Low frequency in off- peak hours

Jobs in the service sector -like n hospitals or hotels- typically work in shifts and often in unsociable hours like early morning or late night. Transport systems, however, have not kept pace with this change and continue operating as per the legacy system of the traditional “rush hour” of 9.am. to 10a.m. and 5p.m. to 7p.m. This is illustrated in the case of three waitresses who live in various parts of Trichy but work in the same restaurant in the northern zone of Srirangam. As they work in shifts, each week their schedule is different. Table 12 shows the data related to their journey to and from work.

As given in the table, these women spend as much as 2-3 hours only on commuting. As working mothers from poor households, the entire responsibility of the household also rests with them, since they cannot hire help the way middle class working women do in India. Further, their husbands are also often in manual labour jobs, sometimes in far off places and there is little they can, or will, do to help with childcare or domestic work. Spending long hours merely to get to work, amplifies their time problems

Table 12: Mobility data of three public transport users					
	Distance From home to work (both ways)	Time travel plus wait time In hours (for both ways)	Distance of bus stop from reference point	Number of vehicles travelled in for the journey	Total number of trips*
Meena	17	3	10-15 minutes	4	4
Amba	14	2	5-10 minutes	8	12
Kamakshi	14	2	5-10 minutes	8	12

Meena, 33, lives in a low income colony called Kajapettai, in central Trichy. She described her journey to work the previous day, as follows:

“I had a 7 am to 3 pm shift yesterday at work. I left home at 6 a.m. It takes 15 minutes to reach the Palakkarai bus stop because I live in Kajapettai, it’s off the main road, quite a bit inside. I waited for ten minutes at the bus stop yesterday, but it is not fixed, sometimes it is less, sometimes it is more. The bus took 20 minutes to reach Chatram bus stand. I got off there, waited 10 minutes and took another bus to Srirangam bus stop. It took 20 minutes to reach. It was already 7. a.m. From the Srirangam bus stop, I walked 15 minutes to arrive at the restaurant. So I reached at 7.15 a.m. I was late of course! Sometimes it gets later than that -7.20, even 7 .30! Sometimes I take an auto. It costs 100 rupees, it is expensive but what to do, have to come on time! We get ticked off if we are late.”

On the same day, Amba, 35, who also lives in Kajapettai, made as many as 4 changes to get to her workplace and 4 more on her return journey, making a total of 12 trips. This was because she was on a shift that began at 3 p.m. in the afternoon and ended at 10 p.m, which lies outside of the “rush hour” schedule of public transport. She explained her home to work trip as follows:

“This week my shift is from 3 p.m. to 10p. m. At the Kajapettai bus stop, bus to Srirangam is every half an hour. If you miss that you have to walk to Palakarai bus stop which takes some half an hour from our home. Similarly, in the night I have to catch the 10.15 bus from Chatram to go to Kajapettai directly. After that, I can only get a bus to Palakarai. From there it’s a half an hour walk to my house and it becomes 11p.m. by the time I reach home. Buses are a big problem in our area.”

The 12 trips that Amba made on her journey to work and back (See Table 9 above) the previous day are shown in the maps below in Figures 17a and b. As the bus did not come as scheduled at 2.30 at the Kajapettai bus stop, marked as ‘ B ’ in Figure 17a, she tried to reach the next point. “It’s better to keep moving than just standing there, so I kept walking ahead and taking one bus after another to get closer to the destination.” For women who work as waitresses, the shift timings are rather strict. Not knowing when the bus will arrive puts them in a daily quandary of decision making with little information. In desperation to be punctual, the women spend ten times the price of a ticket and take an auto to work.

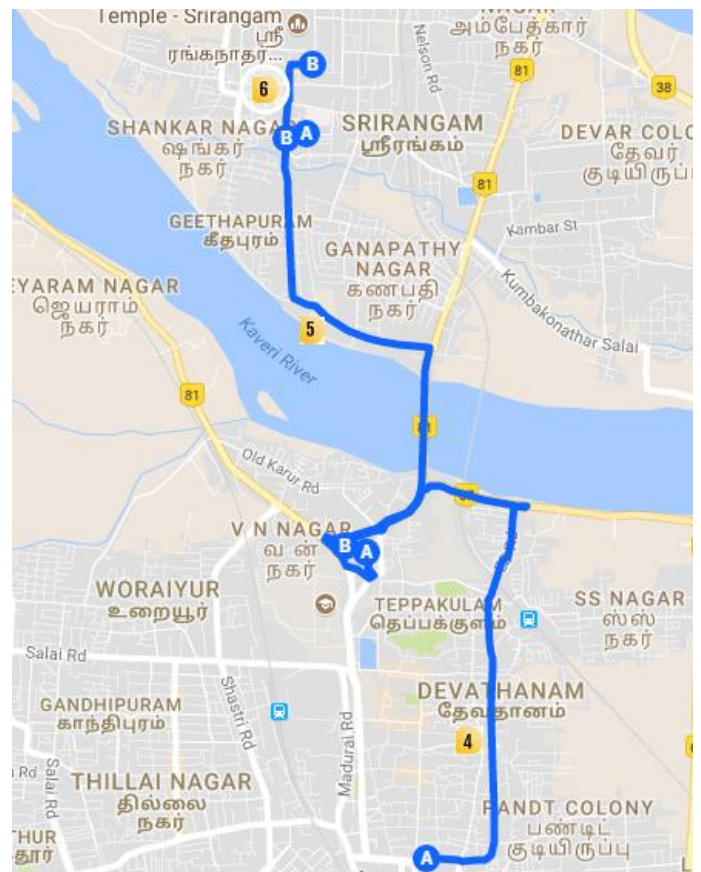
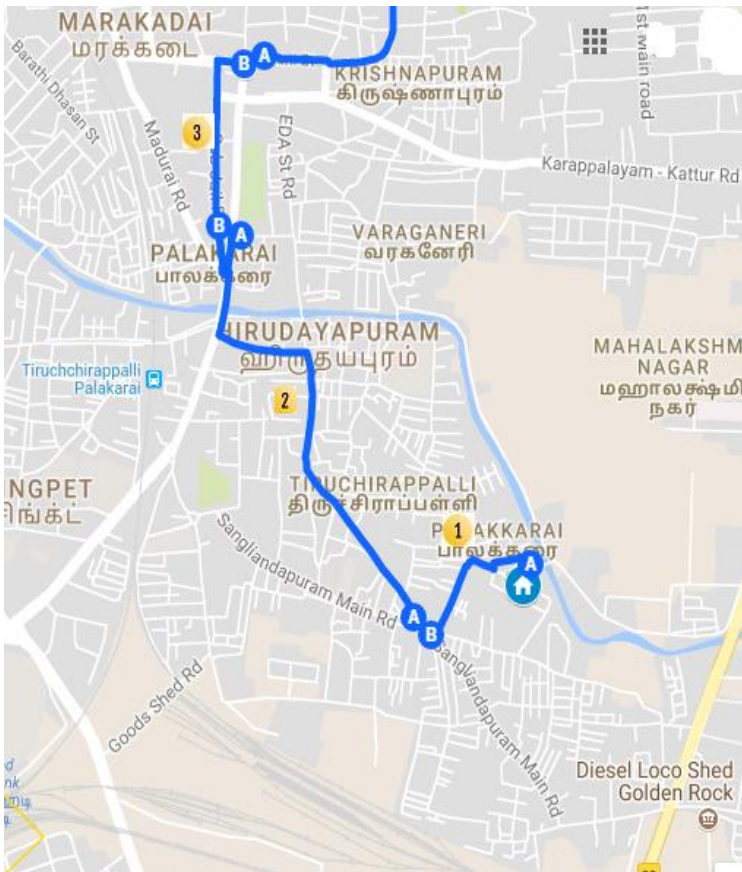


Figure 17a: Amba’s trips number 1 to 3.

Figure 17b (right): Amba’s trips number 4 to 6.

Note: Each origin is marked as A and each destination as B. Each destination B becomes the origin A for the next trip.

Figure 18 shows the purpose of various trips taken by the respondents in which it is seen that 34% of all the trips are those trips made in transit on the way to a final destination, indicating poor point to point connectivity, as attested by the experiences of the women waitresses above.

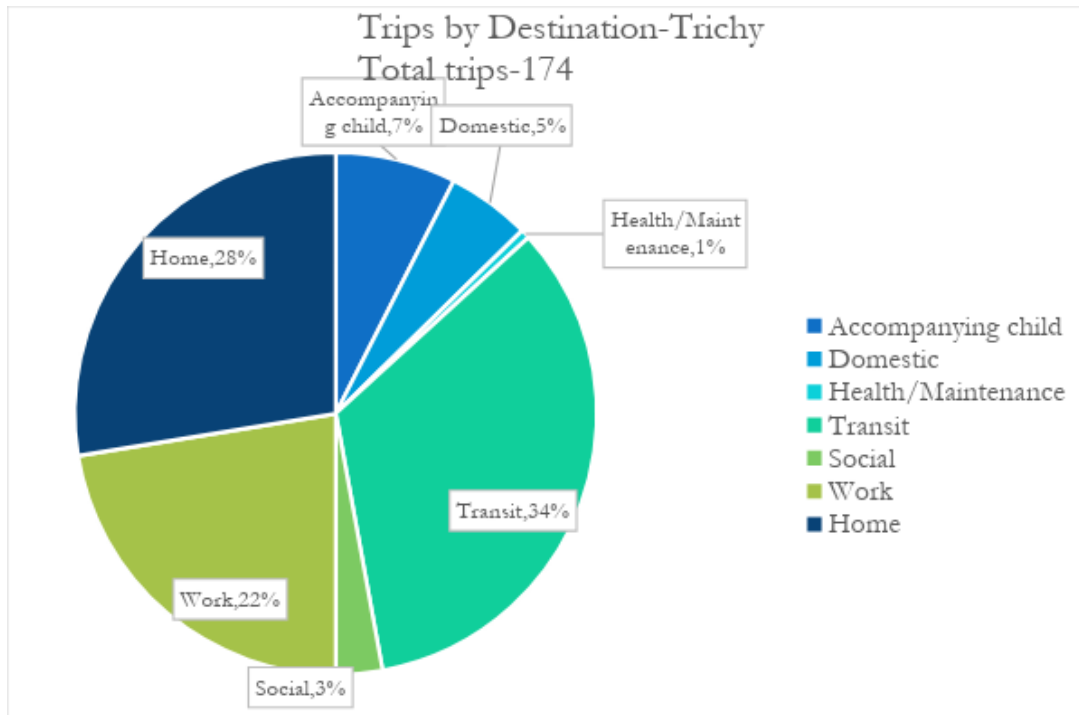


Figure 18: Trips of Trichy respondents according to destination

c. *Inadequate service in some areas (even in peak hours).*

Malini, 48, lives in the locality of KK Nagar in the southernmost part of the city. KK Nagar is in Zone III- Golden Rock and is a relatively new residential area that grew quickly. Malini takes the bus to her workplace, a semi-public government insurance company located in the centre. Malini described her daily bus journeys as follows:

“During morning hours, I wait for the bus for 5 to 10 minutes. In the evenings more than 15 minutes, sometimes even half an hour. In K.K.Nagar area buses are not frequent, so they are always crowded. Sometimes for nearly half an hour buses don't show up. But if we go to Central Bus stand from KK Nagar, then many buses and even shared autos to my office are available. Waiting for the bus is very irritating, I don't like to waste time just waiting. I have too much work pressure at home and at office too.”

Tapti, 47, (number 11 in Table 10) who lives in Woraiyur and works in a semi-public housing loan company in the centre, faces a similar problem of being completely dependent on one private bus to reach work on *time*.

“There's a private bus at 9.40, if I take that I can reach work at 10/10.05. But if I miss that by seconds, I take the government bus which is behind it. This takes 40 minutes to reach. Even if no one is there inside, it keeps stopping on the way and going slowly. But for that small delay of missing my regular bus, I end up spending 15/20 minutes more. I can reach only at 10.15/10.20. I end up late at work.”

d. Discomfort during the travel

When buses are infrequent on some routes, they become overcrowded and there is never a vacant seat. “99% of the time I don’t get a seat in the bus. I keep standin,.” said Malini, an observation made by other bus users in the study as well. The blatant breaking of rules by Trichy’s bus drivers in the form of not stopping at designated bus stops or stopping at unauthorized ones or rushing off before passengers can properly board the vehicle was expressed by respondents. Similar complaints about the bus drivers in Trichy abound on the internet’s consumer complaint forums. Malini, elaborated her experience in this regard as follows: “Another thing is that buses never stop at the bus stop, they just rush past. But when they stop at the traffic signals people board and get down. I too get down in the signal, because of this I have to cross the road at 4 places, which is quite risky at times. While getting down from the bus at the signal, you should have the smartness to crisscross over the vehicles waiting for the traffic lights to change!”

This kind of experience is found more among the private buses who feel less compelled to follow any rules. The Tamil Nadu State Transport Corporation (TNSTC) city buses are perceived as safer but are far slower as they need to stop in all bus stops along the route.

2. Residential location linked to child care support

In Trichy, the respondents who had the longest commutes were characterized by having dependent children taken care of by their mother or both parents. These women who were in effect ‘single’ because their husbands worked in another town. To be able to handle their young children, they lived in the house of their parents or very close to them. Child care needs having been left to the older generation, the women were free to commute for long distance out of the agglomeration, for their work. The following four examples illustrate this.

Anu, 32, working as a sales executive in a call centre for a telecom company, lives outside Trichy agglomeration, in the northwest, called Pettavaithalai. (Figure 19). Trichy is the closest big city for this town. Although she has a fixed duration contract at work and not much security of tenure, this job is still more valuable than anything she can find closer to her own hometown. Trichy is the employment hub for towns like Pettavaithalai. As her husband works in Bangalore, her 7-year-old child is completely looked after by Anu’s mother in whose house the family lives. This constrains her residential location but also enables her to work in a job located 26 kilometres away.



Figure 19: Journey to work of Anu and Sumati

Sumati, 32, working in an insurance company, lives in another town Keeranur, 30 kms south of Trichy's city centre. Both she and her husband come to Trichy city for their work but have different timings. Her mother stays close by in her own house. She picks up her two young children in the afternoon, feeds them dinner and gets them to do homework by the time either Sumati or her husband is back. Like Anu above, Sumati too cannot work without the support of her mother in childcare and hence her residential location is fixed to where her mother lives, which is where her other relatives live. Enduring the long commute of two and a half hours per day, is preferable to not having children taken care of properly.

Another woman whose home location is determined by childcare support is that of Sasi. Sasi also lives in an agglomeration town in the north and works as an English professor in a government college in a town called Musiri, about 35 kilometres from the agglomeration. As her parents live next door, they help manage her 8-year-old daughter. Her husband is semi-unemployed in a real estate business which has erratic income. As a government job, it offers many benefits that are hard to replicate. Staying close to her parents is more valued and the inconvenient bus travel (see below) is an acceptable tradeoff.

“There is no place to sit. Till junction, we have to stand in the buses. There are not many buses that stop here. All the buses that pass through here come jam-packed from the origin to Trichy. If I go up to Tollgate (in south-central Trichy) there is a decent frequency of buses from other towns. But they take a long route to reach junction or Head Post office or Central bus stand. Since there are lots of central government offices, many people work there and so

they have to be picked up. Women find it very difficult as they have to adjust to waiting for the bus and boarding the crowded bus. It is not comfortable for women to stand all the way.

There is a bus which comes from Salem (another district) but that is every half an hour. We'll get delayed for work. ...Autos are very costly and demand 75 to 100 for just 5 kms. We hired a van which was the easiest mode but is very costly- Rs 5000 per month. If there is any less costly transport. The roads that we use are very close to the river belts, it gets worse when there are rains.... The traffic is high and is very accident prone. If there are better bus services, it would be so much easier to commute.”

The five women in the sample commuting from/to Trichy agglomeration to towns outside have poor accessibility due to the distance between home and work, the duration of the commute and the inconvenience of the journey. All are mothers of children under ten they stay with/close to their own parents for childcare support, especially since four of them are ‘single mothers’ as their husbands work in another city. To be sure, staying with their parent(s) this is not a problem for the women or something they want to escape from. On the contrary, the arrangement enhances their freedom to take up work that is located outside the town or to return home late from work. But it stems from a lack of choice. The lack of options for dependable child care anchors them to their parents’ residential locations.

Residential choice models have found that dwelling unit characteristics, locational characteristics (i.e. immediate environment and the neighborhood) accessibility to urban features especially to the workplace and individual factors like lifecycle stage, income and education are chief factors in deciding where to live (Prashker, 2008). The analysis of working mothers in Trichy builds on the literature that individual factors such as child care support through parents is key to the decision of residence location for single working mothers with dependent children.

3. Concentration of employment in Trichy city

Overall in Tamil Nadu, 52% women work in government offices and 48% in private establishments, as per the state’s Annual Area Employment Market report for 2014, Apart from this Tamil Nadu has 30% reservation for women in government jobs, including teaching in government schools. Offices of Income Tax, All India Radio, head Post office, District Magistrate’s office and offices of public-sector companies like Life Insurance and National Insurance are important employment hubs for women. These offices are all located in and around the cantonment area of central Trichy. In the land use map from the 2003 masterplan of Trichy (valid until 2030) shown in Figure 20, government establishments shown in red, are mostly concentrated in central Trichy (except for the red portion in the southeast which is the airport). As we saw in Research question #1, Figure 11, census data shows that the sector which employs maximum women-32%- is education and health. Most educational institutes such as the main colleges of Trichy

(National College, St. Joseph's college, Bishop Hebbar College) and main hospitals are also located in and around the Cantonment area in central Trichy.

On the other hand, in the private sector, the industry which employs maximum women is manufacturing, as per the Annual Area Employment Market Report (2014). Apart from fabrication of machinery and engineering tools, the other kind of manufacturing that is significant in Trichy is that of artificial gem cutting and polishing. This is an artisanal industry employing nearly 15,000 people in 2000 units in and around the city. It has a high proportion of women employees, although exact numbers are not available. Many of the gem cutting units are in the commercial area marked in dark blue right in the centre of the city.

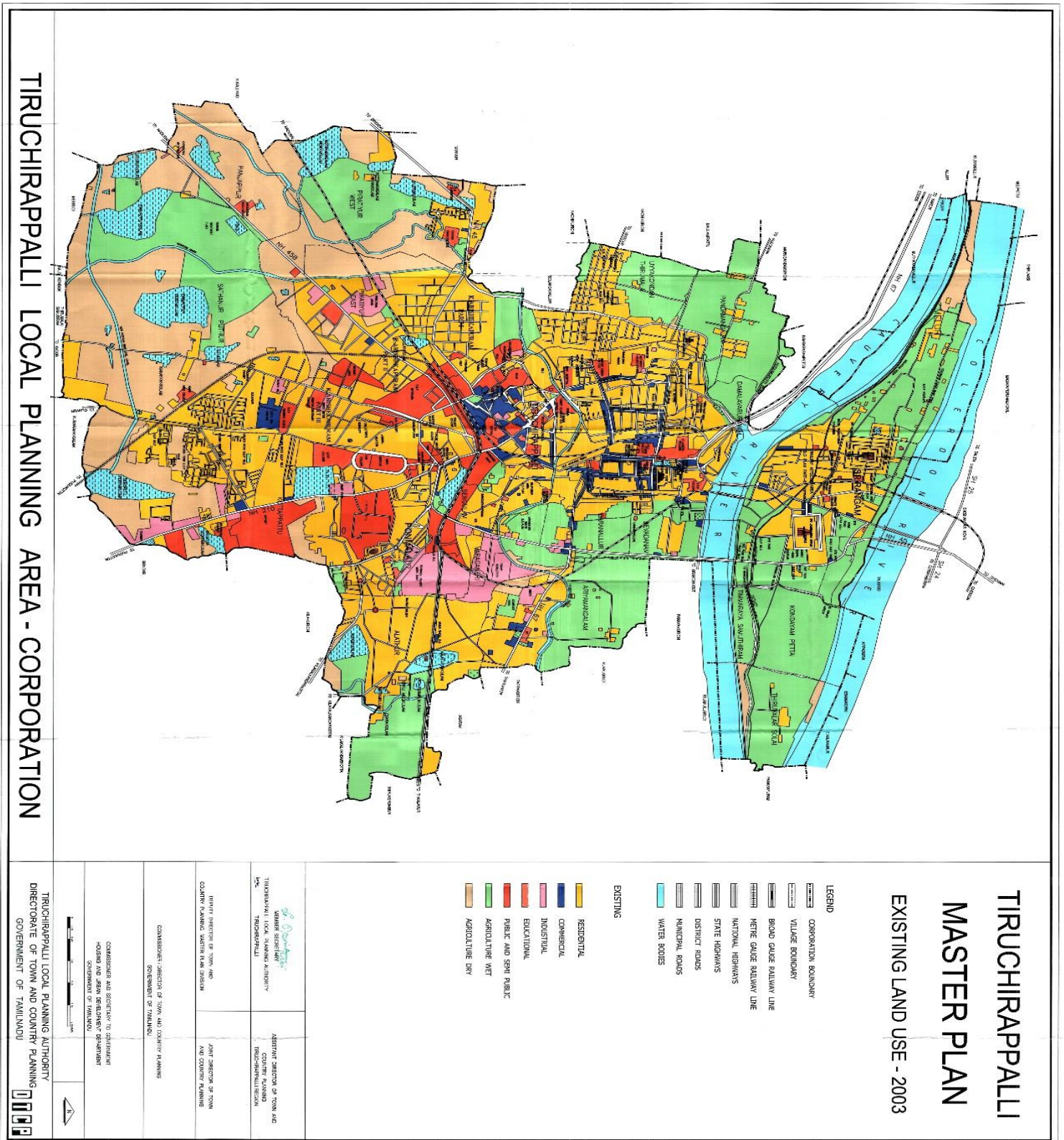


Figure 20: Trichy land use map from Masterplan 2003. Note: ³The red portion in the south east is the Trichy airport.

Therefore, both private and public jobs are spatially concentrated in central Trichy. Figure 21 below shows the plotting of journey to work of all those who travel above average distances i.e. above 8 kilometres. While A

indicates the residence, B indicates the workplace, encircled in red. As is visually evident in the respondent's trajectories, employment opportunities are far from evenly distributed in the agglomeration which compels

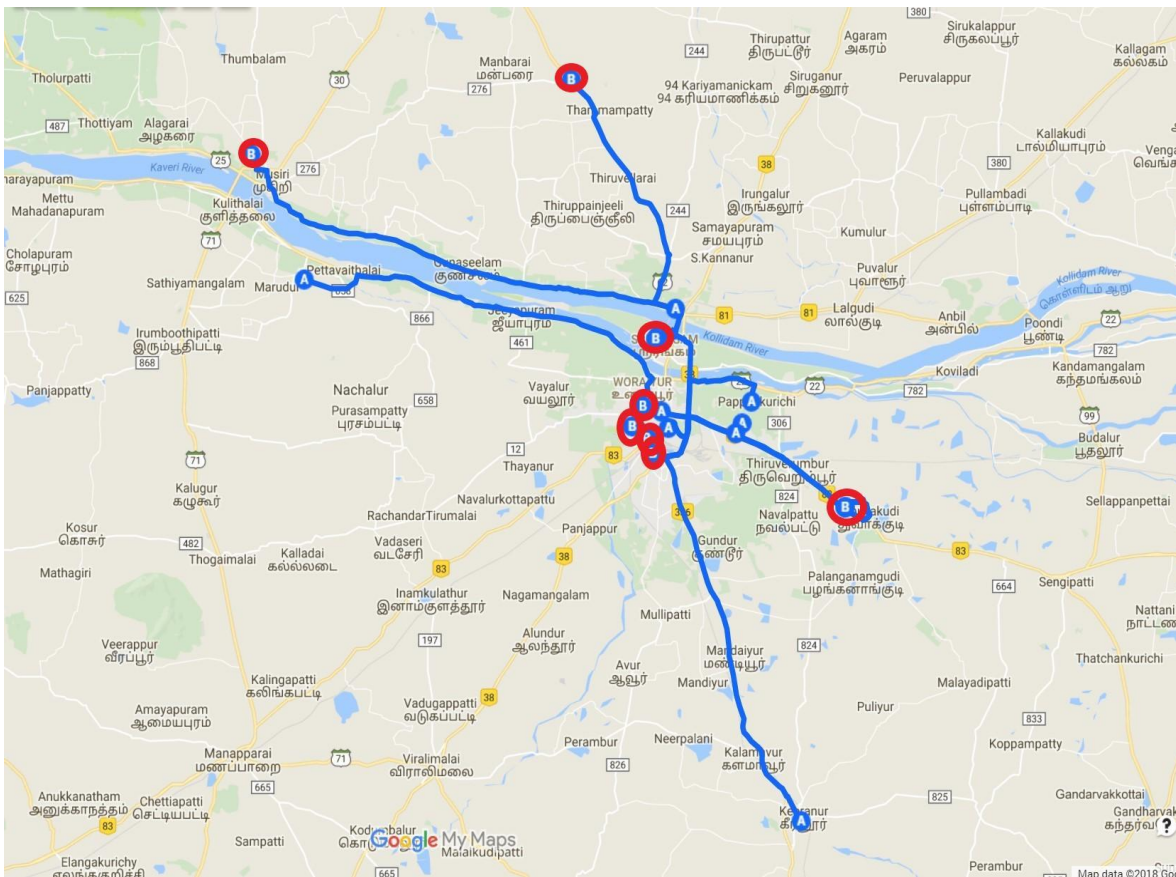


Figure 21: Journeys to work of all respondents travelling > 10 kms. A=residence. B (in red) = Workplaces

women who live away from these main hubs with two choices: find fewer paying jobs close to home or undertake long journeys to work.

The second problem that imbalanced economic development creates is the congestion that is caused by the convergence of people to Trichy daily. This in turn contributes to poor quality of air and overall standard of living. The Trichy editions of leading national newspapers like The Hindu and Times of India, report with alarming frequency, issues about air pollution and solid waste disposal due to overuse of vehicles and overcrowding of transit areas.

4. Compact, mixed land use versus sprawl

In the description of Trichy city in Section A, we saw how Srirangam, the pilgrim town in the north, was undergoing an economic boom due to the rise of religious tourism that changed its socio-economic complexion. Srirangam was a separate municipality until its inclusion into the Trichy municipality's jurisdiction in 1994. Although Trichy mainland is only 25 minutes away by motorized transport, being an island, it has been insular and self-contained. There were nine working mothers in the Trichy sample, who lived in this town. Seven of them stayed in the old part of this town, (orange parts in the centre of Figure 4 of Chapter 6. II. (ii), which is dense, compact and owing to its antiquity, the streets are easy to traverse on

foot. Despite the growing traffic, there is an entrenched culture of using non-motorized transport among the locals. Access to the workplace, to the children's school, to the market and places of leisure were at a walkable distance from each other hence the capability for spatial access for these respondents was very high. Living close to family, friends and the temple gave them immense well-being.

However, this is not so for those who live in the same town but away from the core area. With the increasing demand for homes in the town has led to sprawl and new apartments are being constructed further and further away from the core in recent years, (yellow parts in Figure 9a). Urban sprawl coupled with public transport inefficiencies affects lower income women most. Take the case of Gomathi lives in the periphery of the town, near the Cauvery river (Figure 8). From here, to reach her workplace in the old part of the town, a distance of only four kilometres, takes Gomathi 80 minutes. Her only access is by public bus. The bus travel in itself is only 15 minutes to the central bus terminus of Srirangam. But the delay is caused by a 45-minute wait for the bus, not knowing whether and when it will come. This is especially true in non-peak hours like afternoons. As sprawl increases, it becomes more and more difficult for the transport network to cover the city efficiently, which affects accessibility for women like Gomathi who don't have any alternative transport.

In a study of urban expansion of Trichy and two other cities of similar scale (Gwalior and Solapur)(Anand and Wankhade, 2014) it was found that a common feature of the growth pattern of all these cities was that peri-urban areas were first converted into residential areas, and then post-facto included within urban jurisdiction. In response to the growing demand for property, developers begin developing the periphery of the city. Land use conversion laws do not seem to promote urban expansion, but the absence of firm prohibitive mechanisms means that urban growth is made possible. Agricultural land is gradually converted to residential use. As the jurisdiction of the local authorities is often limited either to municipal boundaries or sometimes to a larger planning area, which often does not include the surrounding rural or agricultural parts, they do not have much control on the development happening outside their municipal boundary. Once an area was 'urbanized' i.e., once there was sufficient built up area, the municipal boundaries were subsequently expanded to include them. This explains the high urban growth as of 2014 (shown in yellow) in the peripheral suburbs of Trichy as shown in the satellite image of Figure 4, resulting in urban sprawl and consequently, increased commuting distances.

Research Question 4a: How does the capability for mobility and spatial access affect other capabilities?

1. Capability for Paid Work

In Trichy, several working mothers travelled to and from Trichy city to neighbouring towns by buses, as we saw in the previous section addressing Research Question 3. For each of these women, the jobs were valuable because they were well paying, mostly government jobs with long term security. Mobility provided by the transport network of the city enabled women to access such far away jobs. Trichy's public transport enhanced women's capability for mobility which in turn was instrumental in expanding their capability for paid work. Commendably, working mothers in the sample returned home using public transport even after 10 p.m. stopping mid-way at the vegetable bazaar in the city centre to buy groceries. This level of comfort of women to occupy public spaces late in the evening is not easy to find in Indian cities. At the same time, the poor quality of the journey by public transport in terms of long waiting, poor connections, discomfort and lack of information about bus arrivals, diminished their accessibility to their jobs.

2. Capability for Social Networks

Respondents who were residents of Srirangam had the most active social networks. Those living in the dense, compact old part of the town, which is the centre surrounding the temple, had relatives (other siblings, brother/sisters in law) living close by. Interactions were frequent, almost on a daily basis. For women living here, commuting was minimal. Their mobility in terms of time spent or distance traveled was low, but accessibility was high. This combination enhanced their well-being as it gave them time to pursue activities for their own pleasure, such as learning music, visiting the temple or taking walks with female companions (see next para). Working in jobs which requires longer commutes would disturb the work-life balance that they have established. Importance given to disposable time for leisure activities with extended family was a reason to stay within the same town, even if better paying jobs were available in Trichy city.

On the other hand, women who had very long commutes and no time in the evenings after work, fulfilled their need for socializing through social activities in the office or on weekends with relatives. Figure 18 shows two women who live outside Trichy but come to the city centre every day. Sumitra lives in a small town Keeranur, in the neighboring district of Pudukottai. Despite a 30 kilometre commute one way on weekdays, Sumitra's weekends allowed her considerable social interaction because of the presence of her brothers, sisters in law and their families in the same small town. Apart from child care support offered by parents, this sense of well-being derived from social networks, especially from female companionship, becomes a strong reason not to live close to the workplace despite the long commute.

Among all the respondents, Anu had the least time at home and maximum time outside, owing to her three hour per day commute. (Figure 18) Fortunately, the office itself became a place to build social networks through monthly outings to the cinema with colleagues or spending lunchtime together.

For others, religious affiliations provided the only social network, as in the case of Jhansi in the following section.

3. Capability for Leisure/Social networks and Capability for Religion

In a paper titled “The south Indian temple: authority, honour and redistribution” Appadurai lucidly explains the immense importance of the south Indian temple within south Indian society. (Appadurai and Breckenridge, 1976). So central to south Indian life is the temple that trips to local temples are weaved into daily mobility patterns. Though not mandated by religion, it is a cultural practice facilitated by the high density of temples in southern towns like Trichy.

Temples are also venues for socialization especially for those living inside temple towns like Srirangam. The calendric cultural events that are held and the public rituals and ceremonies conducted for the deities are almost always attended by local residents. Here, women who otherwise may not get the time to visit other female friends catch up with each other. Temples thus become venues for social interactions. Families also consider temple trips as valid leisure outings. “If it is a special occasion, then as a family we go to a temple or maybe a restaurant,” says Vasanthi, mentioning both venues together. During weekends, Padma, her husband and two children go by car to various temples in and around Trichy. When they go to the Rock fort temple in the old part of Trichy where parking is difficult, they take both the two wheelers that they have, with the children sitting pillion behind each parent. In Trichy, visits to temples are hence as much of a leisure alternative as any of the modern-day staples of cinema, shopping mall or restaurant. There is considerable overlap between the capability for religion and the capability for leisure, which is why they are grouped together in this section.

While diurnal temple visits have been the common practice in southern towns, within the sample, there was only one woman, Vidya, who had the temporal flexibility to go to the temple every day. She was able to do that as she lived in the town of Srirangam, the pilgrim centre contained within the agglomeration of Trichy. The fact that she lived at a five-minute walking distance from the temple complex, worked at an office that was at walking distance from home and was back home by 5.30 p.m., allowed her the temporal and spatial access to the temple twice a day. Along with her sisters in law, she took a brisk 20-minute morning walk around the temple complex for the explicit purpose of physical exercise. Then in the evening, they visited the shrines inside the temple with a religious objective. However, walking in the spacious corridors and open arenas inside the complex, while going from one shrine to another, also served the purpose of physical exercise. As a result, using the space of the temple, Vidya was able to combine a religious activity, a fitness routine and bonding with female companions, thereby immensely enhancing her capabilities to be and do many things and thereby her overall well-being.

Other women who had less access to temples due to personal, temporal or spatial constraints regretted their inability to visit temples more often.

Mekhala desired to do a special pilgrimage of 108 holy shrines of the Hindu deity Ganesha but was impeded by a personal constraint. She had suffered an accident while driving her two-wheeler to work which restricted her mobility and had been medically advised against too much walking. On the other hand, Hema did not have easy spatial access to the city's many temples as she lived in a relatively new residential area in western Trichy called Vayalur (Figure 14). It was out of the municipal corporation's limits and bus facilities were not as developed as in the main city. Hema was constrained as she possessed no personal transport, though her husband had a car. Autos and buses were not easily available in her locality on the periphery of the city.

“The fact that am not able to go to temple irks me. Am not able to go because from our area everything is far away. You have to come to the main road first to get transport... It takes a long time. Because of lack of time I am not able to visit ancient temples like Srirangam.”

Temples in the south are closed for certain hours in the afternoon and each temple has its own closing and opening hours. Inability to match her temporal availability with the temple timings prevents Narmada, a manager in a government insurance company, from visiting the Ayyappan temple in central Trichy which she has always wanted to.

Outings to temples that are located in other towns are planned in advance as they demand higher monetary and time commitment. Sometimes the desired religious destination is located deep in the hinterland the access to which may need interchanges and travel in different modes of transport. Planned trips to temples outside the city are not individual decisions of women. Consent of the husband and other accompanying family members is required as the woman seldom goes on such a trip alone. For lower income women, such as the respondents who wait tables in a restaurant, this is an annual activity. Some like Amba and Kamakshi are not from Trichy but from neighboring districts like Dindugal. They visit the native village of either the woman or her husband, travelling with the whole family by train. Here they meet their extended family and offer prayers in the local temple, which hosts their 'family deity' worshipped by their ancestors. These visits are timed with an annual religious spectacle, that each temple has. The 'capability for religion' here feeds the 'capability to nurture relationships', as through this trip the women meet siblings and aunts and uncles whom they are unable to meet otherwise. When these annual vacations are to the woman's natal family it particularly enhances her well-being, as in Indian society a woman's natal ties are considerably loosened following marriage.

Leisure was also curtailed not only because of the respondent's own schedule but also that of her partner's. Vimala, who works as a packer of takeaway food in a restaurant lives in Srirangam. Her husband, a helper in a doctor's clinic, could never get leave from work. Hence the family had not gone on vacation for twenty years, although it was her desire to do so.

“Would like to go out with family. But cannot. Husband doesn’t agree when I am ready. He has leave issues. He doesn’t even want to come. It’s 20 years since we went out somewhere for a few days. He is not interested in cinema. Temples we go to...but he doesn’t get leave, too many patients come...so doctor does not give leave.”

The maximum the family does is visit the ancestral village once in a while where all the other relatives gather. As we saw in Jalandhar too, working mothers’ leisure was entangled with the time commitments of others in the family, apart from their own.

i. Capability for Religion tightening temporal constraints?

There are 83.7% Hindus, 9% Christians and 7% Muslims in Trichy district. Trichy has several churches set up by early Jesuits. Perhaps the most ardent believers in the entire study were two Christian women in Trichy.

Liza, in her mid-forties is a clerk (junior employee) in Trichy’s municipal corporation. Every morning she goes with her husband to church at 6.a.m. The church is about a kilometre away and they go by two-wheeler. They spend more than 30 minutes there and return at 6.45. Liza then plunges into a hectic routine of serving breakfast to her teenaged children, getting herself ready and leaving along with her husband as she depends on his two-wheeler to reach office every day.

“I am devoted to God,” she says and is clear that her status as a devotee of God is the ‘being’ that describes her best. She has an altar at home with a picture of Jesus Christ and lights a lamp every day. She has also written a book of poems in praise of the Lord. Usually, she says, the morning routine is so hurried that she does not even have time for breakfast, and this has caused her a stomach acidity problem. Despite this, the 45 minutes spent in church (including travel time) is never compromised. She spoke of it as a mandatory activity of her day.

Liza’s adherence to religious practices is nevertheless much lesser than Jhansi’s.

Jhansi, 49 is a cleaner in a government office in Central Trichy. Jhansi, her husband and two adult daughters have busy weekends spent in religious activities. On Saturdays, apart from other household work, Jhansi also has to get “white and white attire” that has to be worn to church the following morning ready for the whole family. On all Sunday mornings, the family goes to the Pentecostal church in the eastern, low income locality of Kattur where they live.

“On Sundays, we leave at 8 and pray in the church till 12. The children also join for prayer activities. After that, we take some rest. Then we do the household work. Children wash their own clothes. In the evening, again at 6 PM, we have prayers at home or in any of the other households.”

In the Sunday evening prayers, a group of about forty people of the same faith gather by turns in a different home each week. Though prayers begin at 6 p.m. Jhansi and her family leave at 4.30 p.m. from their house to be able to reach on time. The prayers finish at 8 p.m.

That is a total of 8.5 hours on Sundays spent on religious activity including the time taken to travel to different venues. I ask Jhansi if the young girls who are in their early twenties consent easily to such a strict schedule on a holiday.

“Children also join prayers otherwise they are scared that pastor will scold them. The pastor says that they should come for prayers to other houses else no one will visit our house when it is our turn.”

Jhansi and her family indulge in no other form of social activity such as cinema or visiting relatives because the only days where there is a possibility to do so are occupied as described above.

“We don’t go to any relatives’ house. We have literally forgotten relatives. Relatives go to a different church. We go to a different one. So, everyone’s work is so hectic that it keeps us completely occupied.”

On weekdays Jhansi admits that she reaches home exhausted at 7 p.m. after a ride in a crowded bus followed by a 15-minute walk from the bus stand to her home. Yet, prayers are not compromised, and the family gets together in front of the altar every evening after she returns.

It does appear that in Jhansi’s case the Capability for Religion interferes with and diminishes the ‘capability for leisure’ and the ‘capability for social networks’. Jhansi has a constrained life as she is the main income earner in the household while her husband who paints walls, is only able to earn intermittently. The daughters though in their early twenties do not keep good health and Jhansi was worried about how she was going to get them married and “settled down”. Lack of good water supply in her neighborhood add to her day to day difficulties. In this scenario, it is possible that the church and congregation contribute to a sense of community and mental well-being through a renewal of hope. The tradeoff of one capability for another is difficult to make a value judgement about. Hence the question of whether Jhansi’s seemingly excessive indulgence in the capability for Religion interferes with her capability to pursue other leisure and social opportunities remains counterfactual, which is a limitation of the Capability Approach as discussed earlier.

1. Capability for Health and Fitness

Hema, in the western suburb of Vayalur, (Figure 14) goes with her husband by a two-wheeler to the main road, close to one of Trichy’s well-known farmer’s markets. Here, they park the vehicle at 5.20.a.m. and walk up to 6.20a.m. Then, they cross over to the market, buy fresh vegetables and return home by 6.50 a.m.in time to enable their daughter to take the school van. Likewise, Sajila in the eastern suburb of Kattur in the same city does yoga for an hour and is back home at 6.30 to send the children to school. Under ‘capability for religion’ we saw how women used the opportunity to walk around the temple for physical well-being and the opportunity to go to church for spiritual health.

Like in Jalandhar, what is noteworthy is that all the women in Trichy who had the capability for health and fitness were those who commuted short distances within the city. On the other hand, the lack of time to

pursue fitness was the biggest regret among the women. 'Being healthy and fit' was the most desired but unfulfilled functioning as revealed through the selection of cards.

Health is also compromised by the fact that women perform strenuous physical work at home. In Trichy one of the respondents had to fill buckets of water and carry it up two floors every evening because their home did not get running water, a common problem in water-scarce Tamil Nadu. Evidence suggests that gender-inequitable time burdens resulting from service deficits greatly constrain women's ability to benefit from urban prosperity (Chant, 2011). Where dwellings lack domestic mains-supplied water, it is typically the women of the house who have to collect it from public standpipes, wells, boreholes, rivers or storage drums served by private tankers. At communal sources, women may also have to compete with one another, compounding the stress and conflict associated with routine chores (Bapat and Aggarwal, 2003).

Research Question 4b: What are the constraints to achieving capabilities required for well-being?

Table 13: Potential functionings as desired in Trichy

Functionings desired but not achieved	Mobility	Domestic Work and Child Care	Paid Work and Financial Independence	Leisure and Social Networks, Religion	Health, Physical Fitness	Nurturing Relationships	Long term financial security	Row Total	Number of times constraint was mentioned (%)
Constraints									
Time	6		1	7	14	2		30	73%
Personal	1			1		1		3	7%
Family	1						1	1	2%
Mobility								0	0%
External				1	1			2	5%
Physical Energy								0	0%
Finances	1			4			9	5	12%
<i>Column Total</i>	9	0	1	13	15	3	10	41	100%

In Trichy, there were only 41 functionings desired but not attained by the respondents. As Table 12 shows, the capability for pursuing health and physical fitness was cited most often by the respondents as something they longed to do but could not due to lack of time, closely followed by the capability for leisure. The biggest constraint towards pursuing the activities associated with health and leisure was the lack of time. Lack of money was the second most frequently mentioned barrier.

2. Time as a constraint

As time has been cited as the biggest constraint to achieving enhance capabilities that could improve well-being in the Trichy sample, the usage of time per day has been de-constructed. As explained in the case of Jalandhar we consider a 15-hour day. Once again, it is found that 64% of a working mother’s time in Trichy is spent out of the house and 36% inside the house. Of the time spent outside, 9%, (as against 8% in Jalandhar) is spent on commuting to and from work. The larger area of Trichy agglomeration, the greater use of public transport in Trichy which results in longer travel duration could both be implicated for the greater quantum of time women spend outside the house.

Table 14: Time usage (out of 15 hours)

Table 14: Time usage (out of 15 hours)					
	Components of Time spent out of the house				
Percentage of time spent out of the house (out of 15 hours)	Journey Time in hrs.	Time spent at work	Non-work travel in hours	Time spent on non-work activities outside the house	Percentage of time spent inside the house
64% (9.55)	9% (0.88)	82% (7.8)	5% (0.44)	4% (0.89)	36% (5.45)

In the following section, we get a glimpse of how the nearly 40% of the time that Trichy’s working mothers spend at home is utilized, the responsibilities they shoulder in the domestic sphere and the impact of that on the amount of free time they have.

i. Time at home

Like in Jalandhar, husbands were largely absent from the sharing of domestic tasks except in minimal ways. Women bore the household tasks almost single-handedly, helped by mothers and mother in laws living with them. As Malini, 47, a respondent in Trichy who works as a manager in an insurance company put it: “**There are three shifts. One is before leaving for work, one is at work and the other is after reaching home.**”

This unequal shouldering of tasks can be best seen in some illustrations of morning routines of Trichy’s respondents. Mornings are a hectic time for working mothers everywhere. Yet, compared to mothers in Jalandhar, in Trichy, mandatory tasks performed by women before they left for work were amplified. Two reasons can be implicated for this- **a) Fewer respondents lived in joint families than in Jalandhar and hence had fewer helping hands. b) Schools in Trichy end post lunch at 3.30 or 4p.m.** This implies that a packed lunch has to be given to children as well, apart from the woman herself and her husband. Examples from the Trichy sample below show how the pre-work routine can be punishing for working mothers.

Satya, a temporary worker for the last ten years in the Trichy Municipality has several **dependents in the house and no means of sharing the** tasks. Apart from her own two children aged 7 and 3, she had at home, two nephews aged 15 and 12- who lost their mother the previous year. In addition, her mother in law who stays with her is a cancer patient. Satya’s morning routine is given in Table 5 and Box 1 gives her own description of her pre-work activities.”

Table 15: Satya's morning schedule of mandatory activities

Activity	Start Time	End Time	Duration
Wake up, wash etc.	04:30	05:00	00:30
Clean kitchen	05:00	05:30	00:30
Sprinkle water outside the house for kolam(traditional design at entrance)	05:30	06:00	00:30
Go to buy milk	06:00	06:10	00:10
Return home; start kolam	06:10	06:40	00:30
Start cooking	06:40	07:00	00:20
Wake up children	07:00	07:00	00:00
Help children get ready, continue to cook breakfast and lunch. Serve breakfast.	07:00	08:30	01:30
Accompany children to gate where van comes, husband also leaves	08:30	08:35	00:05
Wash dishes	08:35	08:50	00:15
Start getting herself ready	08:50	09:15	00:25
Leave house for work with younger child aged 3	09:15	09:15	00:00

Box 1 : Satya's description of her mornings

"I wake up at 4.30 a.m. First, I clean the kitchen, I put the clothes in the washing machine, and then go and buy milk from the shop. I return at 6.15 and sprinkle water outside the house to clean the area for drawing kolam. At 6.30 am I start cooking and finish by 8.30 a.m. Lunch, tiffin, morning breakfast, everything, then I wash the vessels too. I go down to drop the kids as the school bus comes and picks them up from the gate. I freshen up myself and start by 9.15 to drop my younger child to my mother's house.

When asked if there is any help for her to perform this plethora of mandatory activities in the mornings, she answers: "My husband has to leave sharp at 8.30.a.m. He helps my 3-year old to wear her clothes and eat her breakfast."

Women's shouldering of too many responsibilities sometimes left them with no time to look after their own health, resulting in physical stress and exhaustion as in two examples below.

Example 1: Vasanthi, a clerk in a government office in Trichy lives with her husband and two children aged 15 and 12. She is up at 4.30 a.m. to get breakfast and lunch ready for the children who leave at 7.30 p.m. and then for her husband and herself. In the evenings, by the time dinner is wound up, the kitchen cleaned, and she is able to go to bed it is 11.p.m. Her exhausting routine leaves her desiring nothing more than a good night's sleep.

“The only thing I want to do is sleep because I never get enough of it! On weekends I get up and do small household tasks and again goes back to sleep. But anyway, I have to be up at 8.30 a.m. to give everyone breakfast. I feel a general lack of rest. But my kids balance it out. They are very loving. If I am tired, they help out.”

Example 2: Eliza is also in a junior position in a government office in Trichy. She is a devout Christian who gets up at 5a.m., makes tea, keeps the rice in the cooker and goes to church with her husband. When she comes back at 6.30 a.m., she wakes up her daughter. In parallel, she cooks her daughter's breakfast, serves her and keeps her packed lunch ready. It's a hectic time in the household because as soon as the daughter leaves for school, the son who goes to University is ready and has to be served breakfast and packed lunch. At 9.45 a.m. both Eliza and her husband leave the house together, as her husband drives her down to her office. In all the cooking and packing of the morning, Eliza never gets time to have even a cup of coffee for herself.

“I come and have my coffee here in office. Because of not eating for so many hours, I have developed stomach acidity.”

In lower income households, the division of labor is even more unequally tilted against the woman. However, the non-participation of the husbands is not because of a pre-conceived notion of gender roles. Rather, it is because the husbands worked in physically tiring jobs like casual construction labor. The women themselves recognize that the husbands are fatigued and do not expect or even want that they do work at home after a hard day. Kamakshi, a waitress in Srirangam, is condoning about her husband's dissociation with household work. He works as a laborer who gets work for about two weeks in the month to break iron rods manually. He earns Rs.500 a day, of which he spends Rs.100 on alcohol.

“He breaks iron in the hot sun every day. When he comes home, he sits quietly drinking. He doesn't trouble anyone. Doesn't create a scene or get abusive. Just has dinner and goes to sleep.”

Amba's husband has a similar job. “He's already doing a lot, why make him do more,” she says when asked if her husband helps her at home.

Tamil Nadu has been a water scarce for many decades. Running water in taps is not uniformly available and is especially absent in slums and low income areas. Where dwellings lack domestic mains-supplied water, it is typically the women of the house who have to collect it from public standpipes, wells, boreholes, rivers or storage drums served by private tankers. One of the respondents Jhansi, who lives in the low income

area of Kattur in the extreme east of Trichy (See Figure 14) lives on the second floor of a two storied building. Every evening after she returns home from her job as an 'office help' in a government office in central Trichy, she has fill buckets of water from a private water tank that arrives in the area. As there is no elevator, she carries a few heavy buckets up to her home. This is a routine evening chore, in which she is occasionally helped by her husband, who is a casual labourer.

Padma, a physiotherapist has her clinic at home, while her husband is employed with a government radio station. She drops her son, aged 12, to school on her motorized two-wheeler in the mornings, picks him up in the afternoon and again takes him for music class in the evening and fetches him back while chaining shopping trips to these escorting ones. She has resisted moving the clinic elsewhere in order to be able to manage both home and work, though it would be professionally profitable to do so. Her easy availability at home makes it obvious that she will do the escorting duties and other household errands.

In September 1989, the reputed English journal of India, 'India Today', carried an article about how middle class women had taken to two wheelers and enjoying a new found freedom (Devadas, 1989) The article ends with a woman journalist expressing her skepticism about the freedom gained by women who have started riding two wheelers. "It's independence, but with an added burden," she says. "Shopping or taking the children to school was essentially a male role. This has made the men lazier." The point the woman made thirty years ago, is still valid in case of working mothers like Padma whose high capability for mobility on the two wheeler results in their doing more household related trips.

Conclusion

In Trichy the figure of 'No Travel' of 26% is much below the average in urban India/similar districts, which is 35/37%. Similarly, the number of women undertaking journeys to work over 20 kilometres is also above the national average. Both of these indicators show that women in Trichy are more mobile than in many other Indian districts and hence more capable of working outside the home. The higher than average female Work Participation Rate in Trichy is another evidence of this fact. More women also use public transport in Trichy (40%) than the national average of 17%.

Unlike in Jalandhar, all respondents had the capability for mobility. This was enabled by the established tradition of women travelling in buses in Tamil Nadu and by a more liberal attitude towards women working outside and being seen in public places even in the late evenings.

Although Trichy's long serving bus system, allowed desired levels of mobility, spatial accessibility was low owing to inefficiencies in the bus system. These related to discomfort in the journey, lack of information about bus arrivals leading to long waiting at bus stops and poor connectivity to some places in the periphery of the agglomeration. In outlying areas of Trichy city which are outcomes of urban sprawl, this lack of connection was more keenly felt.

Accessibility depended on residential location, which for some was anchored to their parents' homes for child care support. It is worth noting that in Trichy in nearly one-third of the sample, it is the *woman's parents* who were helping with child care and enabling her to go outside and work. The involvement of the maternal home in the married daughter's life is significant, given that India is a tradition bound patriarchal society where daughters are expected to minimize their connections with the natal home and devote themselves to the marital home. Admittedly, mostly it is because the husbands are working outside Trichy and the in laws are also living in a different town. Yet, in similar cases in Jalandhar, the woman lives wherever the in-laws are and seeks their support in childcare rather than moving into her own maternal home. This difference between the northern and southern city in this study reflects the findings of the India Human Development Survey, (IHDS, 2010) which observed that married women's natal ties vary widely across regions. The IHDS's survey of more than 40,000 families in 2005 found that in urban areas (non-metro cities) connections to the natal family were much higher for married women in the south than for those in the north, attesting to the south's more liberal outlook towards women. The implication of this difference in social norms is on the journey to work. The trip length of working mothers in Trichy who have young children depends on where their parental home is, while in Jalandhar, in corresponding cases, it depends on where their in-laws live.

In both cases, however, the working woman's residential location is fixed to the child support available through the older generation. Some working mothers were able to travel to jobs beyond 20 or 30 kilometres one way, knowing that the children were looked after at home and there is no compulsion return by a certain hour, like it would be in a creche. This enhanced the working mother's capability for paid work and her capability for accessibility as she is free to take up jobs based on other criteria and not only commuting distance and time.

For those living outside the agglomeration and coming to central Trichy for work, accessibility was poor, indicating the need for more geographical dispersion of employment opportunities. Accessibility was highest for women living as well as working inside the compact, dense walkable island town of Srirangam. Their short commutes left them enough time to pursue well-being through leisure, religious and social activities. Increasing sprawl and urban growth, however, threatened this way of life in the town.

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CHAPTER 6: GRENOBLE

This chapter has three sections. Section A, provides an overview of the urban agglomeration of Grenoble, its location, urban growth in recent decades and transport options. In Section B, working women of Grenoble and their mobility patterns are presented on the basis of existing secondary data. In Section C, the characteristics of the sample of women is shown and the next three research questions are addressed based on the sample's responses.

SECTION A

I. Overview of the Metropole

Grenoble is a city situated in eastern France in the department of Isère in the region of Auvergne-Rhône-Alpes. It is a commune of 18.1 sq. kilometres and a population of 1,63, 625 people. This commune sits in the centre of an urban agglomeration called Grenoble Alpes Metropole with a population of 4,51,752 inhabitants. Grenoble is the largest among them and the centre for employment for people in the surrounding communes. This is the third biggest agglomeration of the region after Lyon and Saint Etienne.



Figure 1 : Location of Grenoble in France.

Source: Ville de Grenoble

Grenoble is situated in a valley surrounded by three mountain ranges that form part of the French Alps-Vercors, Belledonne and Chartreuse. The average altitude is 402 metres above sea level. There are two rivers which flank Grenoble. Bordering the city on the north is the river Isère, which eventually joins the Rhone river (hence the region Rhone-Alpes) and on the west is the river Drac, a tributary of the Isère. The imposing presence of the mountains is an inescapable feature of life in Grenoble. In the summers they beckon trekkers and hikers while in the winters the many ski stations around attract winter sport lovers. Grenoble, was the capital of the Winter Olympics in 1962 for which event, several changes in the built environment were undertaken at that time. Lyon, which is one of the big five cities of France, is 106 kilometres to the north west and is the closest international airport. Grenoble city is also the central point of the agglomeration for

connections to France’s other regions. The French rail network connects Grenoble to Paris via the high speed TGV and to all important cities in the country

Until 2013, the urban agglomeration of Grenoble was called Communate d’agglomeration de Grenoble and consisted of 27 communes . In 2015, the Grenoble Alpes Metropole (Figure 2) was created encompassing 49 communes covering an area of 541 sq. kms. The increase in area gave it the critical size required to be called a metropole. For this study, the term “metropole” and “agglomeration” are used interchangeably. Also, unless specified, in this chapter “Grenoble” refers to the entire metropole, not only the commune of Grenoble. The métropole represents 7% of the regional population and 36% of that of the Isère department.

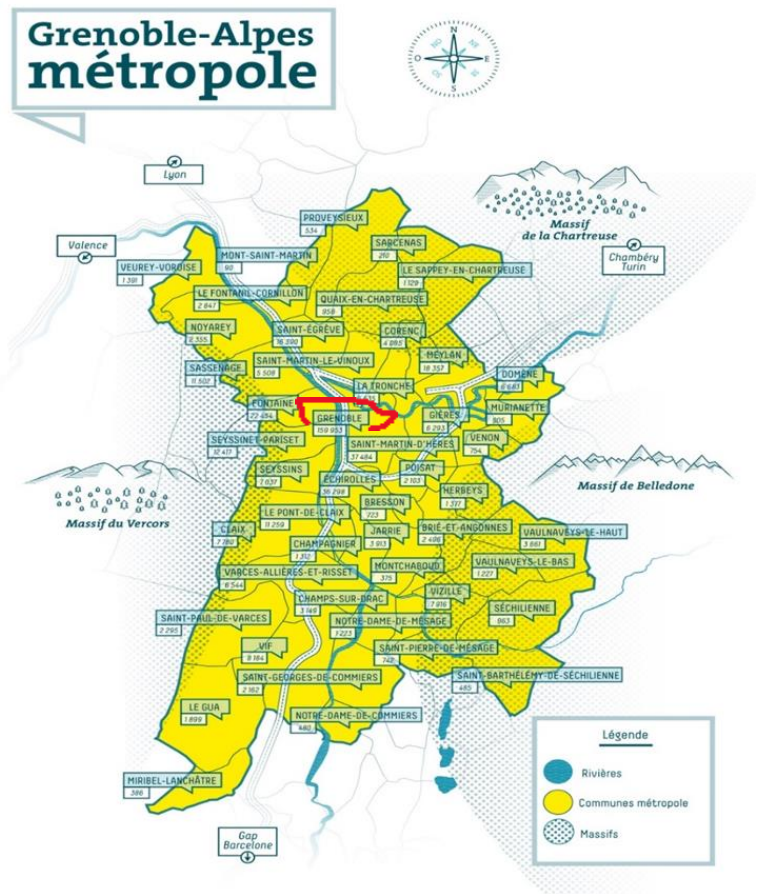


Figure 2: Map of Grenoble Alpes Metropole. Source: www.grenoble.fr. Co-ordinates of Grenoble : latitude nord 45° 11' 10" et longitude est 5° 44' 3".

The historical association of the University Joseph Fourier with renowned French scientists has been a major contributing factor to the preeminence of the University of Grenoble. Being a University town, a considerable population of the city is young. Thirty- four percent are under the age of 25, and students make up almost 13% of the working-age population. The density of population in the metropole is 828 .1 people per square kilometre. The Metropole is at present a vibrant economic centre with several scientific and technological companies establishing themselves in and around the city. This has earned it the name “Silicon Valley of France”, an image that successive mayors have sought to strengthen.

1. The ‘Silicon Valley of France’

Since the 1950s and 60s there has been a concerted effort to develop Grenoble into a scientific and technological innovation centre. Several local and national factors converged to achieve this objective. The setting up of CENG-(Centre d’Etudes Nucleaire Grenoble, now CEA) in 1956, through the initiative of the 1970 Nobel Prize Winner in physics, Louis Néel, a Grenoble inhabitant, was an important milestone. Between 1960-1990, Grenoble had produced three Nobel Prize winners in the sciences (including Néel).

Hubert Dubedout, dynamic mayor of Grenoble between 1965-1983, was one of the early scientists recruited by Néel into the erstwhile CENG. The link between university-industry-municipality formed a strong lobby to set up courses and technical laboratories in Grenoble, on municipal and private financing. This mode of operation is in the heart of the Grenoble system of scientific development. Engineers involved in teaching and teachers seeking answers to specific industry issues in various sectors: electrical engineering, stationery hydraulics, electrochemistry, metallurgy (Hollard, 2014). As Gilles Novarina comments in his book *“De l’urbain a la ville”* the scientific and technological milieu in itself can be seen as a veritable actor in the economic development of Grenoble) of Grenoble since the early 1960s. (Novarina, 1993).

Post the 1960s, efforts to make it the scientific centre of not just France but of Europe were intensified. Grenoble is one of 6 European cities housing the European Molecular Biology laboratory, which was established here in 1974. Located close by is the European Synchrotron Facility, a joint research facility of 22 countries costing a 100 million euros was inaugurated in 1994 in the Polygon Scientifique Area (Sector 1 of Figure 6). The Institut Paul–Langevin (IPL), one of the world centres for research using neutrons, was set up in 1974. Grenoble also has large laboratories related to space and to the understanding and observation of the universe such as the Institut de radioastronomie millimétrique (1979), the Laboratoire de physique subatomique et de cosmologie de Grenoble,(1967).

The momentum of setting up both public funded and private laboratories to further scientific research continues in the 21st century. The Institut des sciences de la Terre (part of the Observatoire des Sciences de l’Univers de Grenoble) was established in 2011. Minatec, a centre for innovation in micro- and nano-technology was inaugurated in 2006. Institut de Planétologie et d’Astrophysique was created merging two older laboratories in 2011. Biotechnology and research on new energy alternatives are the newer sectors which have arisen in the Grenoble economy in the 21st century.

2. Urban Growth

To understand the character of the different communes around Grenoble we step back a little into the historical evolution of the city and how the repercussions of this continue to affect the socio-economic landscape of the agglomeration. In the three decades of the post war period, (1945-1975) that are considered “Trente Glorieuse” (thirty glorious years) for France, Grenoble showed vigorous growth demographically and economically, reaping the benefits of a market driven economy. The Grand Boulevards were inaugurated in 1938 – Boulevard Maréchal Joffre, Maréchal Foch, and Joseph Vallier.

These arterial roads running from east to west for a distance of 2.3 kilometres enabled the setting up of many enterprises along the boulevards and encouraged the use of the automobile, radically transforming mobility in the city. As Grenoble became an economic magnet of the region, the city began to attract people from nearby rural areas and other French provinces. More and more communes gradually joined in the urban agglomeration of Grenoble.

In the census of 1954, the term “agglomeration grenobloise” referred to 7 communes and in 1962 to 13 communes. Owing to these reasons, demographically the population in Grenoble city rose from approximately 102,161 in 1946 to 161,616 in 1968.

Grenoble’s relationship with its neighbouring communes has not always been smooth through its years of expansion and even later. As each commune has a separate elected mayor but is also part of a loose federation of communes in a territory, it had to protect its interests while co-operating with the commune of Grenoble for its own economic advancement.

Perhaps the most detailed study of the evolution of Grenoble right up to 1965 has been done by Jean-Christophe Parent in his book of 1982 “*Grenoble: deux siècles de urbanization*”. Parent explains that the sharp differences between the northern and southern areas of the agglomeration has its roots in the historical growth of the city. Figure 4 shows industrialization in Grenoble in the second half of the 20th century between 1945-1960. Evidently, a sharp work-residential divide was created by pushing industries to the phases of

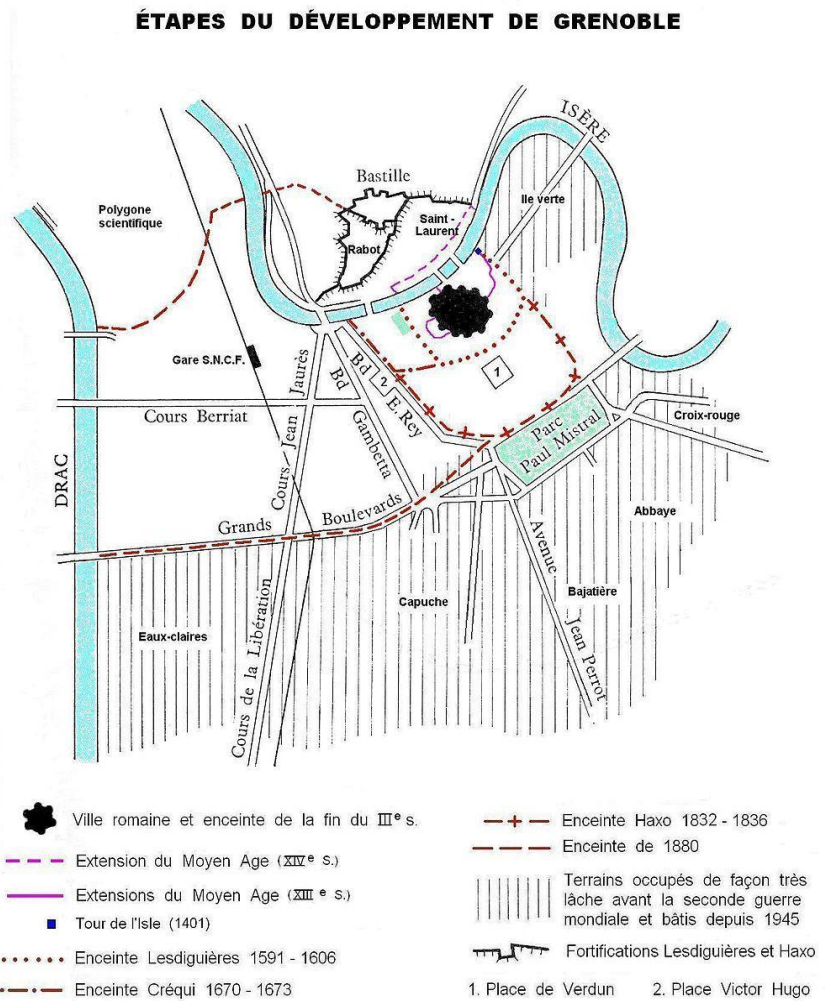


Figure 3 : Spatial expansion of Grenoble in different history. Source: (Parent,1982)

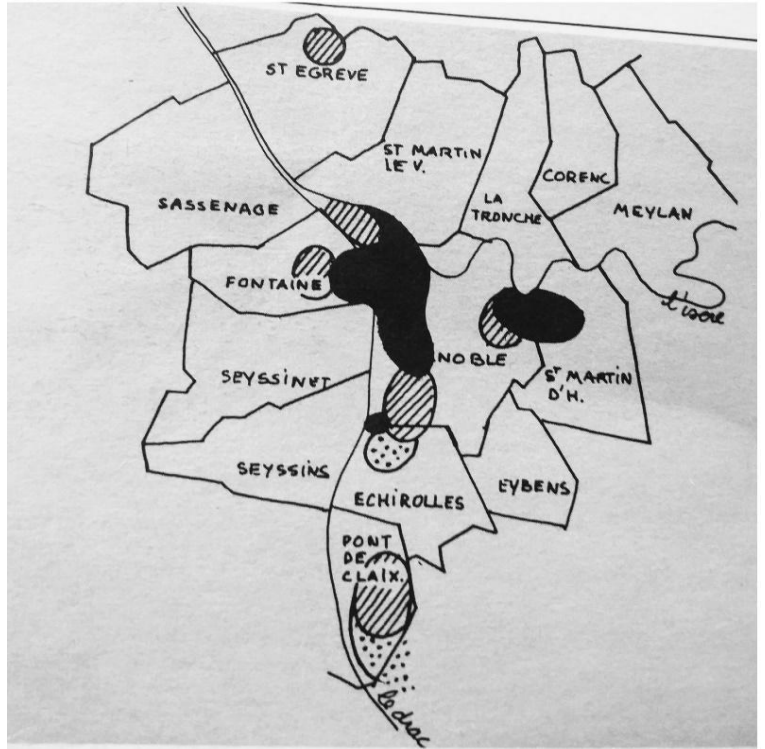
south -Eybens, Poisat, Echirolles- in the 1950s and 60s while keeping the northern communes -La Tronche, Meylan, Corenc-residential.

This was further accentuated by the introduction of social housing in these industrialized neighbourhoods during those years. Certain quartiers were deemed “unhealthy” and in need of renovation. Over the years, the industrial communes acquired the maximum number of immigrants who were blue collared workers in the industries, while the residential communes of the north acquired a middle class population (Parent, 1992).

Figure 4 (right): Spread of industrialization over the decades from 1945-1960. Source: (Parent, 1992)

- Industries in 1945
- ⋯ Industries in the 1950s
- ⋯ Industries in the 1960s

This renewal of old areas resulted in the property prices and rent escalating, driving away populations from the city centre to the periphery. This phenomenon, however, was not specific to Grenoble but was prevalent throughout France in that epoch.



3. Socio-economic differences within the Metropole

The Metropole is far from homogeneous with respect to economic as well as social indices of wellbeing. Despite the rapid economic development, well-educated population and presence of a strong intellectual cadre in the workforce, there are 40,000 households which are below the minimum income threshold. (Bernert and Gilbert, 2015). As in all cities, these situations are not evenly distributed across the territory and tend to be concentrated in certain municipalities and neighborhoods, not always the ones with social housing or those targeted by the city's policy as those needing improvement. INSEE's Rhone Alpes team (Bernet and Gilbert, 2015) studied “monetary precariousness” in the metropole based on the

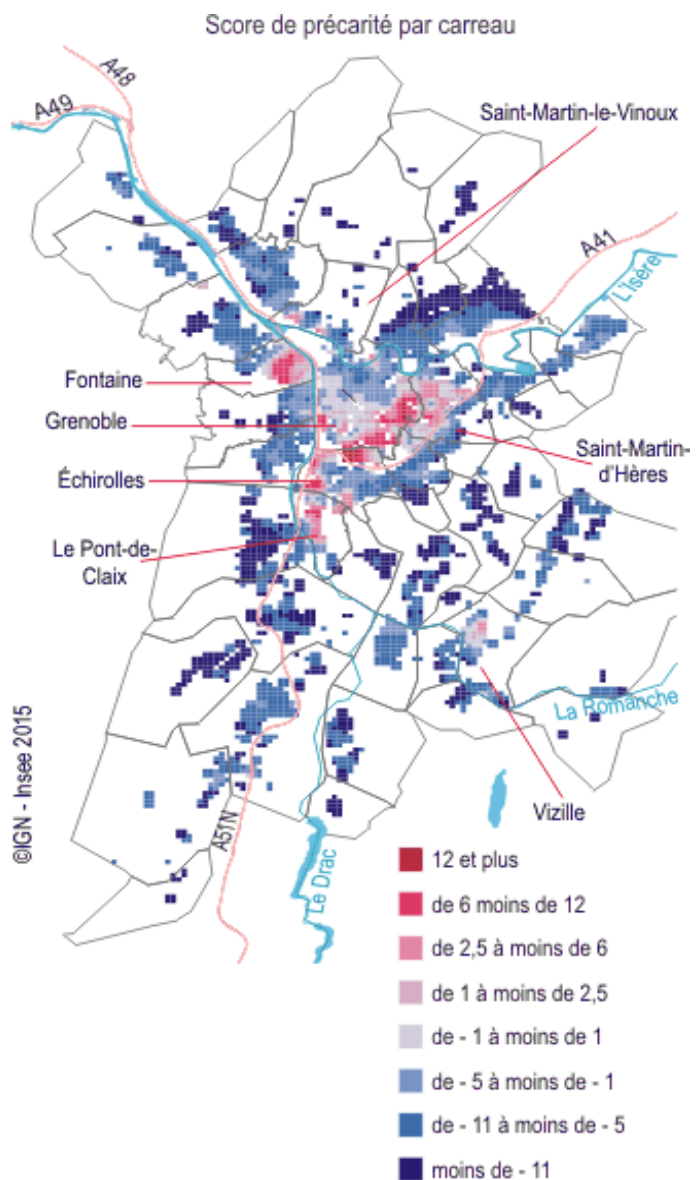


Figure 5 (right) : Economic precariousness score per commune in the Metropole. Source: INSEE

economic condition of the household (less than 982 euros/month, minimum CAF allocation and 50% of income coming from social aid).

As shown in Figure 5, it was found that households in precarious situations are more numerous in the south of the agglomeration. Grenoble commune itself is not removed from this situation. Half of the metropole's minimum welfare recipients and 50% of households below the minimum income limit, reside in Grenoble alongside highly paid executives and a prosperous middle class. The commune of Corenc in the north east is among the richest in the region, with a median annual income per household of over 36,000 euros.

This clearly distinguishes it from Échirolles in the south, the least rich commune of the agglomeration, which has a median income of around 17,000 euros. Fontaine which is the most populated also has the highest unemployment. Echirolles also has the highest amount of social housing-35%. The southern arc of Point de Claix, Eybens and Saint Martin d'Herès also have more social housing than the average in Grenoble city. The introduction of social housing in the industrialized areas during the 1950s and '60s have left their mark in these places in the form of grand buildings with no individuality. To this day, the visual difference persists between these and the residential communes on the right bank of the Isère (i.e. north of the agglomeration), like La Tronche, Corenc and Saint Martin le Vinoux. These communes have mainly independent houses and much less immigrant population, displaying middle class's accession to property and of social homogeneity.

The property market reflects these variations as seen in Table 1 below. The prices in the communes in the upmarket suburbs are higher, possibly because there are more independent houses there sought after by the richer, older population, who might also be seeking homogeneity in their social surroundings. The rates reflect the image that certain neighbourhoods must bear, either because of historical reasons or urban precarity that exists there today.

Table 1: Comparison of property prices among communes in the metropole.	
Source : www.meilleuragents.com	
Sector/Commune	Price range per m² in euros
Seyssins	2739-2895
Seyssinet-Pariset	2200-2274
Saint Egreve	2199-2579
Grenoble	2100-2800
Sassenage	2100-2700
Meylan	2100-2700
La Tronche	2100-2700
Eybens	2100-2700
Saint Martin d'Heres	1919-2026
Fontaine	1515-1757
Echirolles	1352-2027

II. Grenoble City

Within the Grenoble Alpes Metropole, the commune of Grenoble, in the middle of the agglomeration has been further divided by the local administration into six sectors as shown in Figure 6 below. The *quartiers* (localities) in each sector are listed in the accompanying table. As the indices in Table 1 show, there is a stark difference in socio-economic levels of the populations residing in the northern sectors of 1 and 2 and those residing in the southern sectors of 3, 5 and 6 . The north-south divide within the commune is marked by the Grand Boulevards on the east-west axis cutting through the centre of the city (see Figure 3) .

Table 2 shows that the repercussions of these trends in urbanization are still seen in the sectors of Grenoble adjoining the respective communes. The proportion of blue collared labourers is the highest in sector 5, 6 and 3 while the number of white collared workers is the least. The differences between the sectors is visible in the number of people living in state provided social housing and those earning below the minimum level of income

There are, however, pockets of Grenoble's centre which show far more social diversity with households living alongside single people, students, young workers, poor workers and isolated elderly people (Bernet and Gilbert, 2015). Quartier Saint Bruno, closer to the commune of Fontaine, would be one such area as also parts close to the Notre Dame in the centre. Similarly, one of the localities in sector 3- Quartier Mistral shows high urban precariousness and is plagued by issues of drugs, car burning, burglary and other crimes as reported by residents in local newspapers and online magazines. Hence it would not be correct to say

that all of sectors 1, 2 and 4 are economically prosperous and educated while all of 5, 6 and 3 are not. There is indeed heterogeneity in all sectors, but less so in the south.

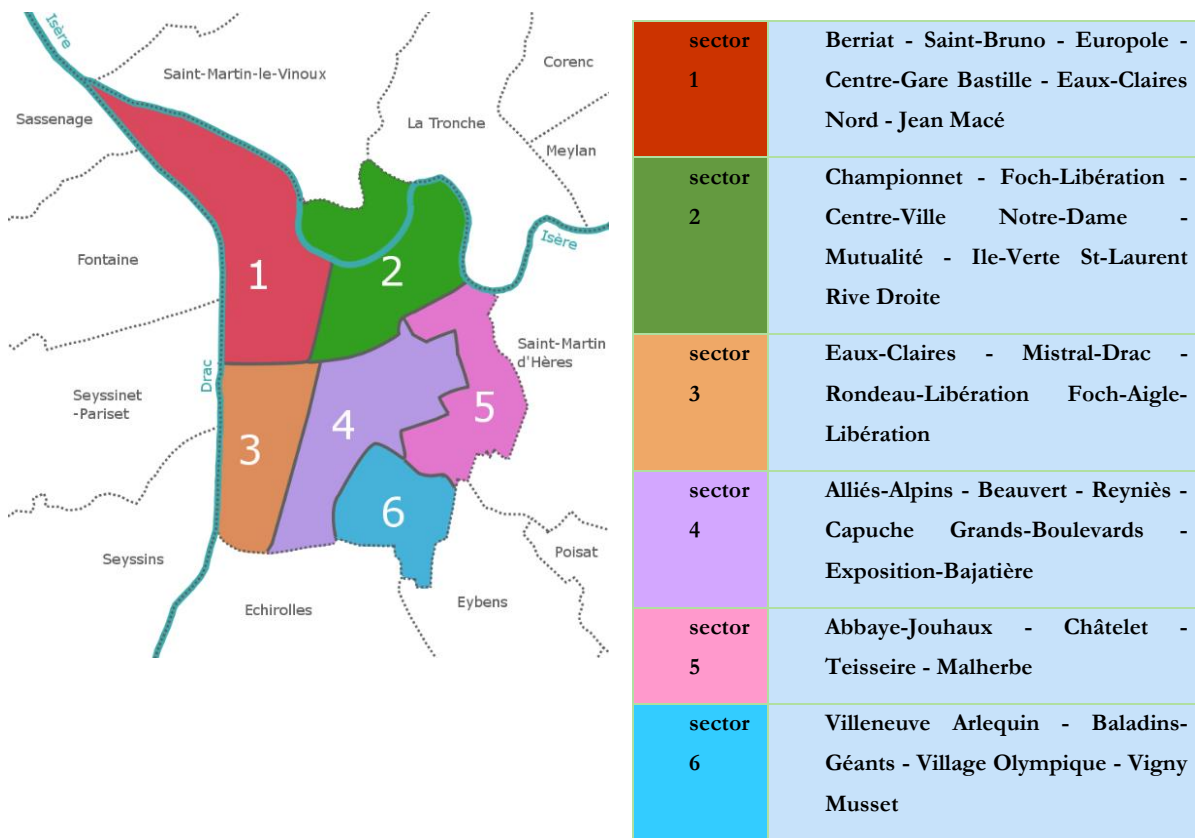


Figure 6: Six sectors of Grenoble. Source: Wikimedia, under Creative Commons license

Table 2 : Comparison Of Sectors In Grenoble			Sector 1	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6
All figures in percentages Source: INSEE/CAF/CG via fiche des secteurs de Grenoble.								
	Median annual income per unit (in euros)		19800	22700	17900	19700	14500	12600
1	Family	Families with children below 25 years	17	19	26	23	32	39
2	Economic	Population below 65 years earning below the minimum income(982 euros/person)	14	14	19	16	30	36
3	Education	Received a University degree	93	78	69	88	68	68
4	Housing	Number of households living in social housing	8	10	13	7	39	42
5	Employment	Number of people between 15-64 years employed as labourers (blue collar jobs)	31	26	45	39	51	57
6	Employment	Number of people in white collar jobs (cadres) between 15-64 years	37	44	22	27	18	16
7	Employment	Level of unemployment among 15-64 years	12	11	14	11	19	21

III. Roads and Transport

Mobility in the Metropole

Grenoble Metropole has a well-developed urban transport network. The tramway of Grenoble was one of the earliest to function in France. It now has 5 lines crisscrossing the agglomeration (Annexure 9). The bus-tram network is a seamless intermodal system managed by the public company SMTC. (Syndicat Mixte Des Transports En Commun). The SMTC formulates a planning document called the Plan de Déplacements Urbains (PDU) which aims to anticipate changes in all modes of travel (public transport, bicycle, walking, car, train) The transport network in Grenoble is actively managed according to the PDU by the different organisations involved, although it is still almost completely under the state. A few private bus operators

(Ouibus, Flexibus) have begun operations offering cheaper fares to nearby big cities like Lyon and Geneva, primarily to those heading for the airports. Energy saving travel modes is an important goal of the current PDU released in October 2016.

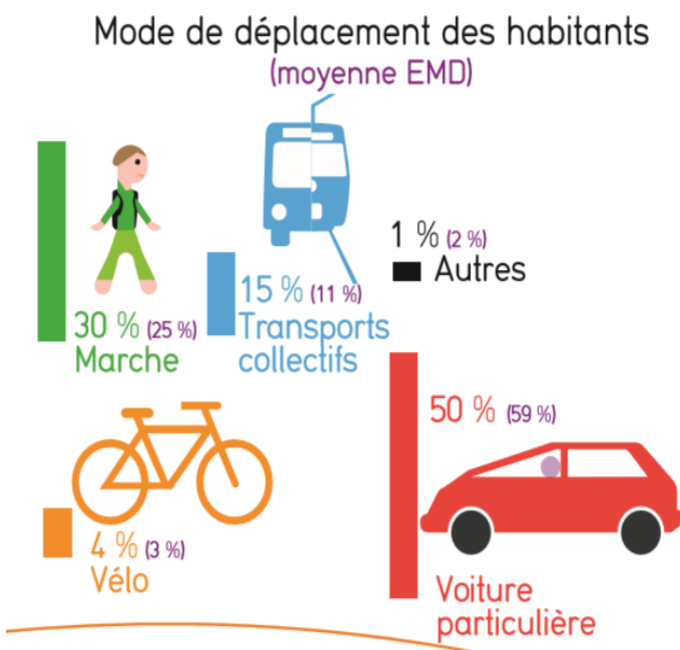
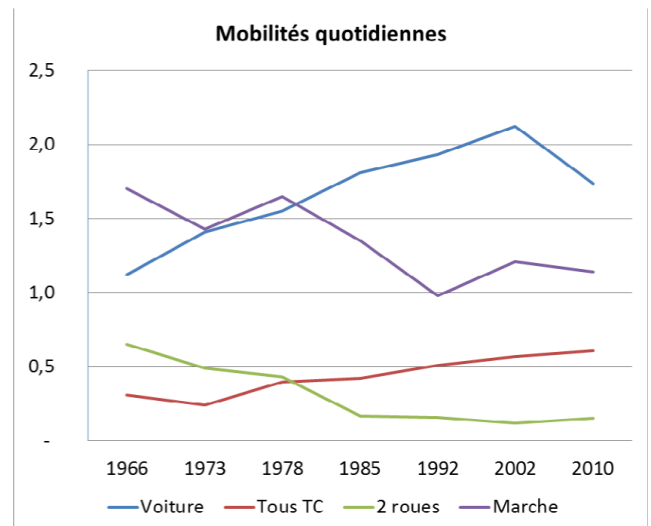


Figure 7(above) : Trends in transport modes. Source: SMTC. Accessed in June 2018.

Figure 8 (right): Modal share of transport Source: CERTU.



The Enquete Menagement Déplacement (EMD) is the French National Household Survey, last conducted in 2010, wherein nearly half the population of the agglomeration were interviewed about their daily mobility habits. Figure 7 shows a snapshot of the modes of transport used by people in the Grenoble agglomeration. According to the EMD, nearly 50% of the cars in Grenoble and 30% of the cars of the inhabitants of the rest of the agglomeration are not used on an average weekday (EMD, 2010). This points to the fact there

are acceptable alternatives to the private car- like the public transport system (used by 15% of the population) , cyclable pathways used by 4% and walkable roads enabling 30% to walk.

In the last EMD, the share of the private car dropped for the first time in 40 years. (Figure 8). The modal share of public transport has been steadily gaining ground since the 1970s. In Grenoble, the authority TAG which is in charge of trams and buses in the agglomeration, has been introducing new lines and extending old one further into the communes, making travel by public transport easier than it used to be. Grenoble has a network of 5 tram lines and 50 bus lines (Annexure 9) enabling approximately 300, 000 trips each day. All the vehicles are accessible for disabled people to push in a wheelchair, which also makes it easy for mothers with strollers to climb in. The effective public transport system could be a reason for the possession of cars being lower than the national average in the Metropole. While the national average for possession of at least one car increased from 80.5% in 2010 to 80.9%, for the Grenoble metropole the corresponding figures decreased from 77.6% to 76.8% for the same period.

The residents who live in the heart of Grenoble -in its hypercentre- (which would be the middle of sectors 1 and 2 in the map shown in Figure 6) make more daily trips than those in other areas-4.4 trips per day per person as against an average of 3.7 trips elsewhere in the agglomeration. This is explained by the easy walkability in the Centreville which still retains cobbled pathways and winding lanes from historic times. Another reason is that there are more leisure options in the Centreville-cafes, restaurants, shopping and cultural activities. The residents here show the lowest use of the private car as compared to others in the agglomeration. In the south of the metropole, the car is used 3 times more by a person per day than in the Centreville. In fact, 35% of the residents in the rest of the agglomeration have more than two cars while only 12% of those in Grenoble do so.

This could be because of a higher eco-consciousness among residents in the city or because these areas are not as well connected with Grenoble as the public transport authorities claim and for suburban residents, the car indeed remains the only viable option for many daily trips.

IV. Endnote

The noted geographer Raoul Blanchard in his work “Grenoble – Étude de géographie urbaine” (Blanchard,1912) wondered how a city surrounded by mountains and remote from major production and consumption centres could overcome its challenges. It could be attributed to a certain “*l'esprit des lieux*”, the tenaciousness of the people to tame the natural elements, the ingenuity of local business leaders, (Ambrosino and Bonin, 2016) and the adaptability of the citizens to the demands of changing times. Grenoble, has always been a “laboratory of experimentation” according to some analysts whether in forging economic growth through scientific innovation, pioneering new ways of thinking in urban transport or sustainable living, or even in local democracy, like electing a mayor from the Green party after overthrowing the Socialists. (Ambrosino and Novarina, 2015).

Romain Lajarge calls Grenoble is a city that is both contrasting and contradictory. It is simultaneously a city with a promising and progressive future that stems from the knowledge economy , a harbinger of grand scientific discoveries but constrained by a lack of social cohesion. (Lajarge, 2013). Citing several instances of public displays of anger and protest in Grenoble since 2010, he goes to the extent of saying that Grenoble also has a dark face , opposite of the brilliant one as a technopolis. “*Le World Trade Centre du quartier de la gare, la presqu’île scientifique et le Synchrotron, Minatec, Clinatech et le Giant, HP et ST Microelectronics ne peuvent résumer ce qu’est Grenoble.*” (The presence of the hi-tech companies do not summarize what Grenoble is.)

In its transition to becoming a metropole, from a second-tier French city, Grenoble’s present challenge is to carry along an increasingly heterogeneous society. The practice of territorial planning mobilizes a growing number of actors with different points of view. However, the different groups of actors do not have the same power, legitimacy of expression, levels of recognition, nor the same skills to equally defend their interests. (Douay, 2013). Participatory planning processes can address this by creating platforms for allowing the articulation of different actors and give legitimacy to the views of marginalized sections of the agglomeration’s fragmented society. One example of a French city’s adoption of metropolitan policies is Marseilles which also faced the difficulty of creating a workable forum for discussion on a metropolitan scale (Douay, 2009, 2010).

⁸ SECTION B

Research Question 1: What are the mobility characteristics of working women in Grenoble?

1. Working Women in Grenoble

Women’s education levels are almost the same as men in the Grenoble metropole. The number of adults who have received a baccalaureate (high school leaving exam) and for those who have a University degree is the same for both genders. Women slightly outnumber men in the active workforce between 15-65 years of age. There are 33,869 women as opposed to 32,460 men in the total working population of 66,338 people (INSEE.c, 2014). In the age group of 25-49 years¹ which coincides with more household and childcare responsibilities, there are 20,209 men and 19642 women – nearly the same. The percentage of unemployed is a little higher for women in this age group at 13.7% against 12.7% for men. In the economic slowdown that has been happening at varying rates since 2008, women, however, have been less affected. The unemployment rate for women has reduced from 17% in 1999 to 13% in 2014, while that of men has remained at 14% after a dip in 2009.

⁸ INSEE considers the upper age limit to be 54 for some parametres and 50 for others.

The difference is seen in the type of employment of this age band. While only 6.1% of men in the “householder” age band work part-time, a huge 33.3% of women in the same age band are part-time workers (INSEE. b, 2014). This indicates, like everywhere else, in Grenoble, women are working fewer hours to be able to shoulder more household responsibilities. Another difference in the type of work is seen in the fact that more women are working as public functionaries in a salaried post on a permanent contract -74.6% as against men at 71.6%. More men are independently employed and also as employers (12.4%) as compared to women (7.9%). This could be indicative of women’s preference for “safe”, secure salaried jobs rather than those which involve more uncertainty. The difference in salaries between men and women of the age group 25-50 is as high as 15.9% according to the Global Gender Gap report of 2016.. Contributing to this is the fact that many working mothers in France choose to work for 80% of the time or take Wednesdays off to coincide with the half day of children in French primary schools, taking a pay cut in the process.

Table 3 : Proportion of women in different sectors of the economy Source: Author using data from INSEEa. 2014.		
	Men	Women
Agriculture, sylviculture et pêche (Agriculture, sericulture, fishing)	70	30
Industrie manufacturière, industries extractives et autres (Industrial Manufacturing etc.)	74	26
Construction	88	12
Commerce, transports et services divers (Commerce,transport etc.)	66	44
Administration publique, enseignement, santé humaine et action sociale. (Public admin, teaching, health, social sector)	33	67

Table 3 shows the distribution of sectors in the economy that the working men and working women are employed in. There is an over representation of women in public administration, teaching, health and social service which are typically feminized sectors. Conversely, they are underrepresented in the manufacturing industry and construction, traditionally male preserves.

Table 4 : Distribution of men and women in different types of jobs. Source: INSEE a. 2014.		
	Men	Women
Hébergement médico-social et social et action sociale sans hébergement (Social sector)	2	11
Activités pour la santé humaine (Health)	4	11
Enseignement (Education)	6	12
Administration publique (Public Administration)	9	12
Commerce; réparation d'automobiles et de motocycles (Commerce ; Repairing automobiles/motorcycles)	12	11
Total	33	57

Table 4 shows how women’s employment is less diffused over occupations than male employment. More than half of the female workforce (57%) in the metropole is employed in five occupations while for men, on the other hand, a little more than 60% is employed across 10 occupations. (not shown here) (INSEE.a, 2014). This could indicate higher employability of men compared to women. The sectors where women and men are concentrated are very different. Even in the last category above, “commerce réparation d'automobiles et de motocycles” (Trade, repairing of automobiles and motorcycles) , the seemingly similar percentages hide the fact that women are more employed in “commerce” i.e. as retail sales girls while more men are involved in the traditionally “macho” jobs of automobile repair. Occupational segregation in the Metropole for both genders is thereby evident from the above data.

2. How do women move in the metropole?

In Grenoble city, among the population aged 25-49 years, there is a difference in the number of women possessing a driving license- 80% as opposed to 88% for men (EMD, 2010). This number increases to 88% for women in the rest of the agglomeration, outside Grenoble and 95% for men. The reason for this could be more walkability and better accessibility to places for residents of Grenoble city, which makes owning a car a matter of choice and not a necessity. While a majority of women hold a driving license, women in Grenoble are also more enthusiastic users of public transport than men. In the same age group, more women use public transport every day (12.5%-bus and 10%-tram) while among men, 8.5% use the bus on a daily basis and 6.5% the tram. This is a feature that is common to the women’s mobility in the Indian cities studied. Modes of transport used by women in Grenoble Metropole , for daily mobility (not only for work trips) according to the EMD of 2010 are as follows:

Mode	Usage by women in %
Private car	58.3
Public Transport	12.2
On foot	27.3
Cycle	1.7
Others	0.5

SECTION C

I. Sample Characteristics

As in the case of Jalandhar and Trichy, the characteristics of the respondents along the dimensions of daily trajectories, family structure, type of employment, socio-economic class and residential location are presented below.

Age of children			Marital status ⁺		Total
At least one child below 10	At least one child between 10-18	All children above 18	Married	Single	
25	3	3	21	10	31

City ↔	15
City ↔ Agglomeration town	10
City ↔ Outside agglomeration	2
One agglomeration town ↔ another agglomeration town	4
Total	31

⁺Married here also refers to those who are living with a partner but not married. Single refers to both divorced and widowed.

Socio economic class of respondents

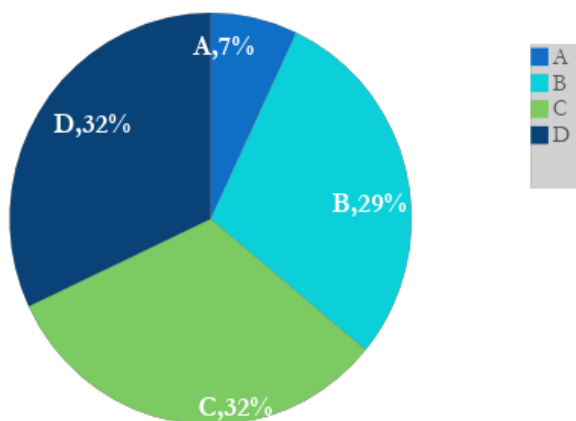
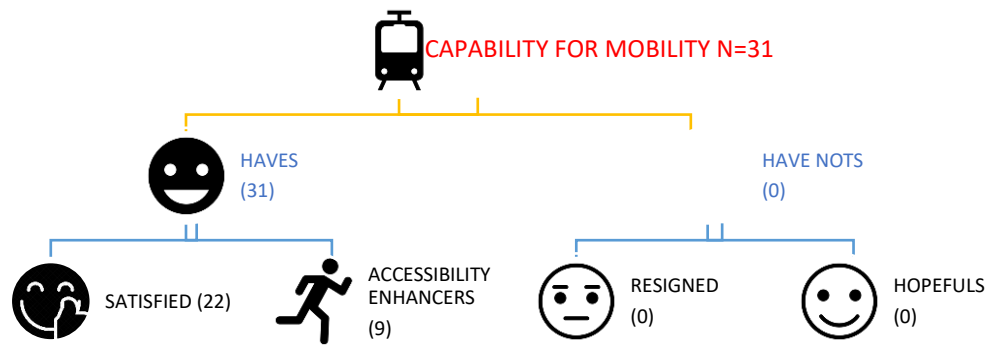


Figure 9 : Socio economic classification of Grenoble respondents as per classification described in Annexure 8

Research Question 2 : What is the extent of the Capability for Mobility among urban working mothers and what factors influence this capability?

Achieved Functionings



Potential Functionings

Figure 11: Classification of the Grenoble sample according to the possession of Capability for Mobility

Like in Trichy, in Grenoble too all 31 respondents were able to travel where they want independently using public or private transport, making all of them ‘Mobility Haves’ and zero people under ‘Mobility Have Nots.’ . Thus, all the working mothers interviewed had the capability for mobility aided by a good public transport network, walkable streets and cycling paths as can be expected in a developed economy of western Europe. Within that, 22 are deemed satisfied as they did not seek any improvement in their mobility while 9 wanted access to other places in the city which they currently lacked, due to reasons discussed further ahead in the chapter.

Research Question 3: Do women who have mobility in Grenoble also have the capability for spatial access?

I. Evaluating Accessibility using the Alkire-Foster counting methodology

Using the same methodology described for Jalandhar and Trichy in Chapter 2 (Section D, Research Question 3 .1.), we measure individual accessibility for each of Grenoble’s respondents, as shown in Table 9 on the following page. The only difference in the calculation of the Accessibility Deprivation Score between the Indian cities and Grenoble is the following:

For the Indian sample, we measured accessibility of those respondents who had mobility but expressly aspired for a better transport option to be able to reach places more easily. In Grenoble, this subset of respondents did not exist. Except for two women who did not have cars and desired them, the rest had no desire to change their existing mode of transport. Hence we measured accessibility for all 31 respondents, based on their mobility data.

It is useful to dwell on this difference a little more.

This is consistent with the argument in Chapter 2, Section D. 1 (Computing an Accessibility Deprivation Score) which says that only the “Mobility Haves” have any degree of accessibility. Having mobility is a necessary pre condition to having Mobility. In Jalandhar, there were some respondents who did not have any mobility at all i.e. the “Mobility Have Nots”, so by definition they do not qualify for an evaluation of accessibility. Among those who have some degree of mobility, some have a good level of accessibility and did not express the need for better accessibility (either in terms of comfort, speed, time taken etc.) . They were the “Satisfied”. The remaining who have expressed dissatisfaction with their accessibility levels and have a need for a better mode of transport through the Game of Cards (“The Enhancers”) were chosen for an inter personal evaluation of accessibility using the Alkire-Foster method.

In Trichy, there were no “Mobility Have Nots”. Hence everyone had accessibility of varying degrees. Again, those who expressed their need for better accessibility (The Enhancers) were chosen for an interpersonal comparison of accessibility.

In Grenoble, there were only two people who do not have cars because they could not afford it, said they would like to possess a car. (It is to be noted, that there were other women who did not want cars for other reasons -to go green etc., but that is a matter of exercising choice.) Hence if we only take these two women for an interpersonal comparison, it would be too small and not give us any valuable information. Hence we take the entire sample, which in Grenoble are not only “Mobility Haves” but also “Satisfied” in terms of Accessibility. Yet, it is insightful to see how the accessibility differs within the sample for various reasons outlined in the following section-Section II, Factors affecting Accessibility.

The average accessibility deprivation score of the Grenoble sample is 1.2. Although a direct comparison with Jalandhar and Trichy’s respondents is not completely valid because of the differences in context, it is still indicative that Jalandhar’s accessibility is 1.3 and Trichy’s 1.7.

Table 9: Accessibility Deprivation of Grenoble respondents

1 Mode	2 Name	3 Time spent on all travel	4 Score	5 Number of trips within the journey	6 Score	7 Distance to transit stop	8 Score	9 Discomfort about the trip	10 Journey Quality score	11 Score	12 Accessibility deprivation
Non Motorized	Fatima	90	1	8	1	NA		Having to walk for 30 minutes due to no car	1	1	3
Pvt Transport	Lisa	106	1	10	1	NA		Long walk from parking	1	1	3
Pub Transport	Ayesha	86	1	10	1	1	1	No remark	0	0	3
Non Motorized	Alice	89	1	11	1	NA		No remark	0	0	2
Non Motorized	Olivia	65	1	7	1	NA		No remark	0	0	2
Pvt Transport	Fanny	75	1	8	0	NA		No remark	0	0	1
Pvt Transport	Helene	125	0	10	1	NA		No remark		0	1
Pvt Transport	Suzanne	125	0	13	1	NA		No remark		0	1
Pub Transport	Hiroka	66	1	11	1	1	1	No remark	0	0	3
Pub Transport	Clemence	50	0	8	1	1	1	No remark	0	0	2
Pvt Transport	Celine	65	1	5	0	NA		No remark	0	0	1
Non Motorized	Camille	40	0	8	1	NA		No remark	0	0	1
Pub Transport	Daphne	90	1	6	0	1	1	No remark	0	0	2
Non Motorized	Inaya	35	0	8	1	NA		No remark	0	0	1
Pub Transport	Julie	57	0	7	1	1	1	No remark	0	0	2
Pvt Transport	Marie	25	0	2	0	NA		Not able to go to Grenoble in the evenings	1	1	1
Non Motorized	Margot	160	1	3	0	NA		No remark	0		1
Non Motorized	Myriam	50	0	4	0	NA		Not having a car	1	1	1
Pvt Transport	Paula	42	0	4	0	NA		Evening traffic between Domene and Grenoble	1	1	1
Pvt Transport	Sophia	90	1	6	0	NA		No remark	0		1
Pvt Transport	Sarah	60	0	6	0	NA		Morning traffic in Meylan making her late	1	1	1
Pub Transport	Yasmine	75	1	5	0	1	1	No remark	0	0	2
Non Motorized	Laura	30	0	4	0	NA		No remark	0	0	0
Pvt Transport	Bernadette	30	0	2	0	NA		No remark	0	0	0
Non Motorized	Chloe	55	0	6	0	NA		No remark	0	0	0
Non Motorized	Jamila	30	0	4	0	NA		No remark	0	0	0
Non Motorized	Megan	21	0	5	0	NA		No remark	0	0	0
Pvt Transport	Naomi	55	0	6	0	NA		No remark	0	0	0
Pvt Transport	Nataliya	55	0	5	0	NA		No remark	0	0	0
Non Motorized	Charlotte	55	0	5	0	NA		No remark	0	0	0
Pub Transport	Victoria	35	0	6	0	1	1	No remark	0	0	1
	Average	63.50		6.55					0.21		1.2

Table 10 : Summary of accessibility constraints			
	Personal Conversion Factors	Social Conversion Factors	Environmental Conversion Factors
Lise, Fabienne Hélène, Sylvie -Executives in private companies -Assistant domicile (home nurses)	Inhibitors: Temporal exigencies of school escorting/ nature of the job		Inhibitors: Compelled to use private car as public transport cannot be relied upon for jobs with strict timings
Fatima Salesgirl in supermarket	Inhibitors: Single mother. Has no car;. Does not spend on public transport , if she can walk. Needs to walk for all her errands.		Enablers: Walking infrastructure is well developed. Green parks in all neighborhoods.
Olivia Shop owner in Villeneuve	Inhibitors: Three children below 10; husband unemployed	Inhibitors: Not comfortable going out of Villeneuve because of her appearance in a full veil	Inhibitors: Mobility limited to the Villeneuve area which is a low income area with few opportunities.
Ayesha, Alice, Hiroko Various professions- educated, middle class	Inhibitors: Non car users- need to make several children -related trips;		Enablers: Dense, compact neighborhoods with all facilities in close proximity. Schools are normally within a kilometre of the home.

II. Factors affecting accessibility

Based on the analysis in Table 10 above, the following factors could be implicated in inhibiting or enabling spatial accessibility for working mothers of the Grenoble sample.

1. Policies which exacerbate the north-south divide (inhibitor)

We saw earlier in the chapter in Section A, the historical reasons for the distribution of population into middle classes largely in the north and working classes in the south of Grenoble. This, as explained in the earlier section, had its roots in the spread of industrialization. Owing to the manner in which the city grew historically, the residential communes of the northern part of the agglomeration developed only tertiary activities of the service sector and the proportion of labourers in their population kept falling reaching often reaching even lower than 20%. This trend has continued in recent years in the development of the IT

industry in Grenoble's march towards becoming a technological powerhouse of France and indeed of Europe.

A majority of the public institutions of research or private technology companies or laboratories are located in the north of Grenoble in the Presqu'île area and this concentration extends in the north east to the communes of Meylan and Crolles. The number of entities in these sectors (Electronics, software, energy, chemicals and Medtech) is distinctly lesser in the southern part of the agglomeration. The map in Figure 12 plots over 60 organisations belonging to the IT sector, which shows this skew. In recent years the administration is creating spatial clusters or "pôle de compétitivité" of institutes and organisations involved in science and technology to enable networking and exchanges. For example, the GIANT (Grenoble Innovation for Advanced New Technologies) brings together two institutes of fundamental research (CEA, CNRS) three European facilities (Synchrotron, EMBL and Institut Laue-Langevin) and institutes of higher education (Université Joseph Fourier, Grenoble INP and Grenoble School of Management) while partnering with 30 private companies in the agglomeration. GIANT, as well as other such clusters such as Minatec (software) and Tennerdid (new energies,) are all located in the area in and around Polygon scientific-in Sector 1. (See Figure 6 in Section A)



- 📍 Electronics
- 📍 IT and software
- 📍 Chemical and Clean tech
- 📍 Research organisations
- 📍 Medical tech
- 📍 Energy
- 📍 Manufacturing companies

Figure 12: Spatial presence of science and technology industry in the Grenoble region.
 Source : Author , using data from Isere department.(Map not to scale)

This spatial concentration accentuates the invisible barrier between the northern and southern communes of the agglomeration because it excludes lower income working women in south Grenoble. This exclusion can happen in two ways:

- i. **Educational** : The kind of companies in Pres'quile or any of the other spatial clusters in the metropole are extremely specialized which are working on high end advanced technology and cutting edge scientific research. The personnel who work there in technical jobs require a high level of educational qualification. While the managerial cadre doubtless requires an engineering degree or a doctorate, even lower end technical jobs require a specialized diploma in a science/engineering discipline. The proportion of people with a university degree is higher in the richer communes and lower in the poorer

communes. The residents of the north are thus more suited to avail of the employment opportunities offered by the tech enterprises, because of their higher likelihood of being better educated and also more aware and up to date about modern industries like IT. The engagement of women in these science/technology organisations, is much lesser than that of men. Although in the metropole, men and women are almost on par as far as acquiring a University degree is concerned, like everywhere else, in France too the number of women in STEM (Science, Technology Engineering and Mathematics) is much lower than men, to begin with. Only 27% of French engineers are women (UNESCO, 2018). Hence the pool of resources to populate the jobs offered by the tech industry itself consists of less women. Within this, the number of women engineers from the poorer localities is likely to be much lesser, given that overall education levels are lesser in low income areas. As discussed in Research Question 4a ahead, for immigrant women, even if they have the required education, cultural barriers in terms of appearance, pose additional challenges.

- b. **Physical access:** Concentration of certain kinds of job opportunities in certain parts of the agglomeration, creates inequality in terms of physical access. This assumes more significance for women than for men as many studies show women's higher sensitivity to distance to workplace. (See Chapter 1 Section .B.3. (a)). Despite the more recent public transport improvements such as the fast and frequent Chrono bus, there are places in the agglomeration from where reaching the tech-zones using public transport is not straightforward. For example, from the south western commune of Sassenage to, say, Crolles lying to the northeast outside the agglomeration, where a large semiconductor company ST Microelectronics is located, it takes 56 minutes by public transport, well above the average of 22 minutes for working women in the agglomeration. Likewise, for a working mother to travel from the southern commune of Seyssin to Polygon Scientifique in sector 1 it would take close to an hour by public transport.

For women in southern districts of the agglomeration, the time taken to reach the technology companies in the northern suburbs may aggravate time constraints and this may deter them to apply for jobs in these places unless they can travel by car. Suburbanization of technical specialization leads to the use of the car to get to these sites, which has important consequences for the environment in a narrow Alpine valley (Ressico, 2013).

2. Residence location (inhibitor)

The southern sectors 5 and 6 (See Figure 6) of Grenoble comprising the areas of Villeneuve, Village Olympique, Vigny Musset and Tessaire are low income areas populated mainly by black Africans or Arabic families from North Africa. The historical factors responsible for this were explained in the earlier part of this chapter about the growth of Grenoble City in Section A. The working mothers in these areas have

limited access to the more upmarket parts of the agglomeration like the city centre or Casserne de Bonne area of sector 2 or northern communes like Meylan and La Tronche, which are considered the posh areas of Grenoble. In the sample, seven respondents lived in sectors 5/6, of which five were single mothers. Although these women had mobility in a literal sense of being able to move anywhere they want in Grenoble, the fact that they spent most of their time in Villeneuve and were hence cut off from other opportunities in the city, diminished their chances of upward social mobility. The barriers they faced were socio-cultural, economic and in a few cases of women who do not have cars, even transport barriers. Those who did live in these parts did so because they did not have a choice- either because of religious choices or financial problems. Hence they in a choiceless situation in terms of residence location, which had a ripple effect on their well-being in various ways as apparent in the following examples.

3. Socio-cultural barriers to accessibility (inhibitors)

Olivia is a white French woman married to a Muslim north African man with whom she has three children. She converted to Islam, at first wearing a small headscarf and eventually in 2012, began to wear the full black hijab. She describes it as a milestone in her spiritual journey, although she was discouraged from donning the hijab by her husband who said it would be difficult to find a job if she did so. Because of her clothing due to her religious affiliation, Olivia rarely goes to the centre-ville where she feels people look at her strangely and unwelcomingly.

“Habille comme ça, je n'étais pas sûre de prendre le tram ici et là avec les enfants, c'est pourquoi nous nous sommes installés dans le sud de Grenoble”

(“Dressed like this, I wasn't confident of going by the tram here and there with the kids, that's why we moved to south Grenoble.”)

The 2004 law banning the headscarf or hijab worn by Muslim women and girls, in French public schools, the 2011 law banning the veil in public places and the EU upholding the ban in March 2017, has brought to the forefront the intersection of gender rights with ethnicity. The ban on the headscarf has resulted in fierce debates (Adrian, 2009, Hancock, 2011) about whether women's freedom to access public places is equally applicable for all French women.

For working women, the consequence has been that those with suitable qualifications, who are unwilling to give up the hijab, have found it very difficult to be employed in large, formal establishments.

“People don't accept veiled women in jobs. It's a pity because I know so many women who are educated with degrees but they cannot work in their own domain,” said Olivia who has a university degree but runs a small clothes shop near her home as she realizes that she is unlikely to be hired by an enterprise.

4. Financial constraints (inhibitors)

Myriam, 42, is a single mother of a 10 year old boy. She is from Cameroon originally and despite being qualified with a legal degree from Grenoble University has been unable to find a job commensurate with her education. She now works two jobs as an assistant in two different schools in Villeneuve.

Her residence is in Malherbe (locality in the east in Figure 12). A few months prior to the interview, she had her chain snatched near her home. But she thinks this could happen anywhere and blames the poor reputation of Villeneuve to the fact that unlike places like Meylan, there is far less police presence in the so called difficult quartiers where she believes even the police are afraid to enter. The police nor anyone else intervened when her chain was snatched and she chased the culprit all the way from Malherbe to Villeneuve.(See Figure 13) .

“À la base, c'est sectorisé!” “Basically, there is a difference in the (treatment of) sectors (by authorities).”

Myriam would like to move to better localities for the sake of her son. But her access to better residential areas is stymied by her financial constraints. She recognized that she has few choices of residential locations, and given her financial restrictions, all of them were in sector 5 and 6.

Inaya, a single mother of three who is a white woman who converted to Islam lives in the borough of Villeneuve, in the midst of a strong North African Muslim community. She works in a bar on the ground floor of the same building where her apartment is. She doesn't like Villeneuve for the way it is neglected by the authorities and relates incidents wherein fire engines do not arrive even after 45 minutes of miscreants burning cars and the overall lack of police presence.

“Moi, ça fait trois ans que j’habite à Villeneuve. Je sens vraiment qu’il y a une ambiance désagréable. Les gens ont pas d’argent. On sent vraiment qu’ils ont des difficultés familiales, je trouve que c’est dur de vivre ici parce qu’ils sont regroupés toutes ces personnes ici. Donc souvent quand on amène les enfants à l’école, il y a beaucoup d’ordure en bas. Ce n’est pas très agréable. C’est tous les jours de voir les ordures. Je comprends que les gens veulent pas venir ici. Ils préfèrent payer plus cher que venir ici. Pourtant que sont appartements sont grands, spacieux, pas cher. Aujourd’hui je suis ici parce que je travaille ici, les enfants ont l’école est juste à côté’, on a tout à disposition. On a un bel appartement. Une fois on ferme la porte on oublie tout ce qui est à l’extérieur. Mais, je ne projette pas m’avenir ici.”

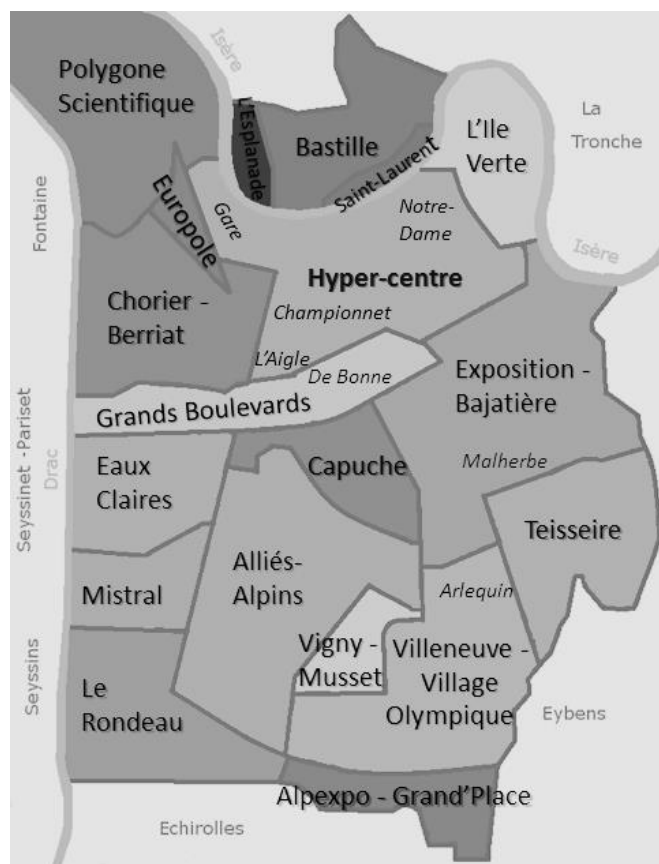


Figure 13(right) : Quartiers of Grenoble commune

(“It’s been three years that I have been living in Villeneuve. I really feel that this ambience is unpleasant. People don’t have money. We can really see that they have family problems. I find that it is difficult to live here because they have collected all such people in this place...Often when I take the kids to school, I see these scum downstairs! Every day to see them...I understand why no one wants to come here. They would rather pay more and live elsewhere. Even though the apartments are large and cheap. Today I’m here because I work here, the kids ‘ school is close by, everything is available. We have a lovely apartment. Once we shut the door, we forget who all are outside. But I don’t see myself living here in the future.”)

Hélène, the home nurse who is a single mother , mentioned in point 1 (Temporal exigencies) , also finds Villeneuve unpleasant because of acts of aggression and too much noise late in the night created by young men. She would like to move to a quieter commune but in social housing as she admits that she cannot afford the rent privately.

In France, social segregation has been an issue that has been debated since about 15 years and over the years some policies to create more diversity have been introduced , such as encouraging a varied mix of students in public schools and mandating 20% of all housing in each quartier to be social housing.

However, some scholars such as Patrick Simon (1995) argue to the contrary that social specialization of space is a characteristic of urban civilization, and experience shows that integration imposed by egalitarian town planning (e.g.: social housing) increases social distance. They point to the social benefits in spatial segregation, such as community solidarity, as reasons not to disrupt the fragile local equilibrium (Patrick, 1995). Conversely, some sociologists (Chamboredon and Lemaire , 1970) have shown that local coexistence

of different groups is not automatically a guarantee of harmony and better "social integration" but can be a source of competition and conflict.

From the point of view of working mothers like Myriam or Inaya or H el ene, who are single, low income earners living in difficult neighbourhoods, there is a desire to move for the sake of giving their children a better environment to grow up in. Though there might be benefits to be had by being in a homogeneous neighbourhood, the potential opportunity to provide better surroundings for their children outweighs these supposed benefits. In fact, for some, there is a constant tension that the ill effects of the environment may influence the child. Myriam does not like anyone complimenting her ten year old son for his looks or calling him "cute" because she is wary of the boy shifting his attention from serious pursuits such as his academics to worrying about his looks. Saving the child from "bad influences" is a constant worry as a single mother in a neighbourhood where unlawful activities are more common. So, accessibility to better residential areas is potentially desired but unattainable because the rents in these areas are unaffordable for these women.

5. Perceptions of 'good' and 'bad' areas (inhibitor)

All the women respondents were asked the question of whether there were certain areas in the city they would avoid for some reason and were also asked their opinion about the security for women in Grenoble. Incredibly, while nothing significant emerged out of the responses to this question in either of the Indian cities (where women's safety is thought to be poor), in Grenoble, the respondents had strong views about what were 'avoidable areas' or 'areas with a bad reputation'. Although this barrier cannot be brought out through the Accessibility Deprivation score methodology since it is a subjective factor which cannot be measured in terms of time or number of trips, this is an important reason which restricts accessibility of women to certain parts of the city. These parts of the city may not be places they need to go to on a daily basis, but there is a mental barrier that has been formed where certain spaces are coded in their mind as 'bad' or 'avoidable'. This mental barrier has created a spatial barrier to these places, making them avoid such areas as far as possible.

The perceptions of the women living in the north and those living in the south were starkly different. The former had the view that many southern localities were unsafe, prone to violent incidents and hence best avoided. Some of the women who lived in the south felt their areas were unfairly labelled while others agreed that they were indeed difficult places to live in but they did not have a choice. Interestingly, while Sarah from Meylan was convinced that Echirolles was very unsafe, Clemence who lived in Echirolles felt her commune was fine and she would be careful about areas that fall before Echirolles while taking Tram A from the centre (i.e. Sectors 5 and 6 of Grenoble commune). There was hence a very apparent 'othering' that was visible in the responses, with each viewing a different part of the city, except theirs as 'bad'. Chloe, 45 once studied in the Village Olympique area but since then has moved away to eastern Grenoble, on the edge of the neighbouring commune of Saint Martin d'Her es. (Figure 12). She worked two jobs and had not

much money, according to her as she had started her own small enterprise of teaching French to foreigners. She has set up her office near Grand Place, where the rents are one of the cheapest in town. But she did not like to come there, except for her work.

“Je ne sais pas ils manqué la sécurité mais je ne sens pas en sécurité. Ils ya des gens que m’regarde dans une manier . (“I don’t know if these areas lack security but I don’t feel secure. The people look at me as if to say “this is our place, you have no business in this part of the town! I don’t feel welcome here.”)

On the other hand, Olivia, from Villeneuve, wearing a hijab thought it was the people in centreville who looked at her strangely if she went there.

Opinions about ‘unsafe places’ in the city were based only on media reports, impressions formed by hearsay. The women themselves almost never ventured to those parts of the city and had never personally experienced any aggression in Grenoble. Lisa, from Meylan has never crossed the south of the Grand Boulevards in several years. She has no reason to go there and neither would she like to. Fanny in Centreville, would like to travel by public transport but not by Line A which she has used a few times and finds it seedy and unpleasant. (Line A is the tram line that goes from the north to the southern end of Grenoble agglomeration-From Fontaine to Echirolles.) Sophia who lives in the hypercentre and has gone to the city’s large auditorium in Alpeexpo in the southernmost part of Grenoble (see Figure) to take her child to a spectacle, but never on any subsequent occasion, said:

“Personnellement, je n'ai jamais eu un problème. Mais c'est vrai qu'ils n'ont pas une bonne réputation. De toute façon, quand j'y vais, ce n'est pas très agréable...Quand on cherchait un appartement, on était allé là -bas... Je le trouve un peu bizarre!"

(“Personally I have never encountered a problem. But it’s true that they (these areas) don’t have a good reputation. Anyway, when I went there for a children’s spectacle , I did not find it very pleasant. I have also been there when we were looking for apartments...I found it a bit bizarre!”)

The higher the income group, higher was the tendency to stigmatize while women who were lower middle class but lived in the centre or in Meylan had a more charitable view of those areas, willing to look beyond the media reports and attributing the supposed lack of safety to complex political and historical factors. Marie, a primary school teacher in Giers, who lives in a less prosperous part of Meylan said :

“Il y a des quartiers plus difficiles que d'autres, c'est sûr. Mais j'aime pas comment dire...stigmatiser. J'ai fréquenté des quartiers, je n'ai jamais été embêtée...Quelqu'un a cassé ma voiture ici à Meylan mais je suis passée des milliers de fois par Villeneuve et rien ne s'est passé! C'est vrai qu'il y a des endroits que l'on craint plus que d'autres - Villeneuve, L'Abbaye, Mistral, Tessière ... Mais, personnellement, je ne me suis jamais senti pas en sécurité »

(“There are areas which are more difficult to than others to pass through, for sure but I don’t want to stigmatize those places. I have frequented these areas but never had any trouble. Once someone broke my car in Meylan but I

have gone through Villeneuve thousand times and nothing has happened! It's true there are some areas one fears more than others-Villeneuve, L'Abbaye, Mistral, Tessiere... But personally I have never felt unsafe.")

Her views were echoed by Bernadette , a single mother of four who had moved a couple of years earlier from the agglomeration to the hypercentre. Women also found access to other areas, even within their localities, difficult in some cases which mad them avoid these places after a certain hour or take precautions. Sarah, 38, a mother of two children in Meylan who works in a notary office said :

« A Meylan, moi je trouve un peu peur donc je ne prends pas le risque en fait. Je pas sortais pas trop soir de nuit...En hiver, quand il fait nuit, je prends ma voiture même si c'est pas très loin mais je préfère prendre ma voiture. Parce que je dois passer dans le des passages que très peu éclairé au milieu du parc je préfère prendre ma voiture même si c'est à côté »

("In Meylan, I feel a little afraid so I don't want to take a risk. I don't go out too late in the evening. In winters when it's dark I take my car because I have to pass by a small street which is not very brightly lit in the middle of a park. I prefer to take my car even if it's just nearby.")

Several women said they would not venture out into the night to Centreville or around Park Paul Mistral (situated in the centre, touching the Grand Boulevards) unless they were in a car or with someone else. The fear was about encountering drunk homeless men who were often found in these places at night.

In a survey of gendered use of parks and natural spaces in the Grenoble agglomeration Sophie Louargant (2015) points out that compared to men, women exhibit a distancing and self-control while practicing sports like running in the city's parks. Women preferred a more collective use of places like parks and felt more comfortable when they were accompanied by others.

Thus, women's access to certain places in the city was restricted owing to their own fears and threat perceptions about those areas. Figure 14 maps some of the voices about opinions on safe areas, based on the women's residential location, where the dots show the respondent's homes.

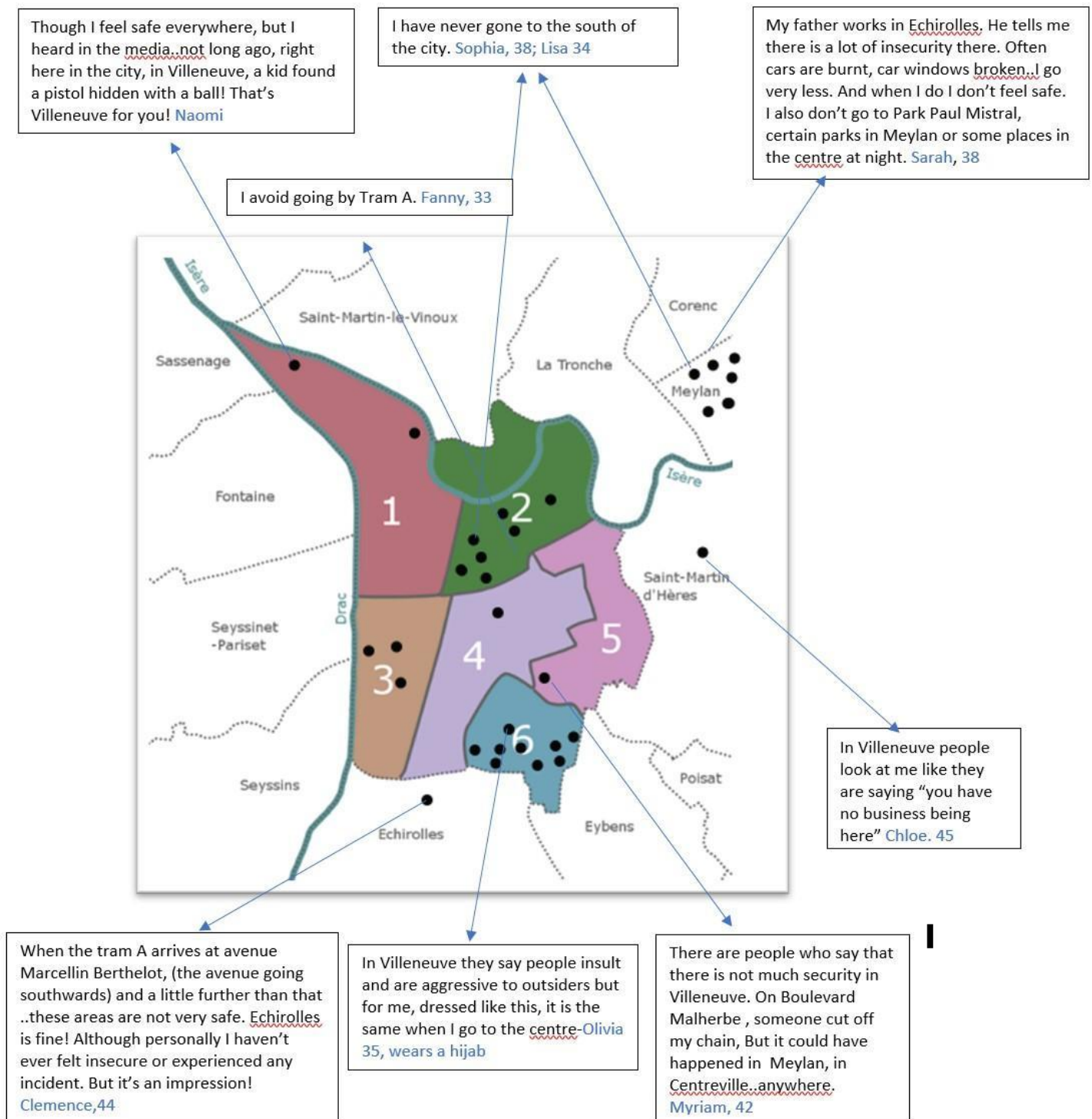


Figure 14: Mapping perceptions of unsafe areas on the basis of residential locations

6. A favourable built environment-mixed land use, cyclable paths, walkability (enabler)

Although women have difficulties in access owing to economic or socio-cultural barriers, the urban built environment of Grenoble enables rather than impedes the capability for mobility and accessibility.

Despite the near-universal escorting duty among mothers in Grenoble, the distance that they traverse is normally within one kilometre. Typically, the time taken to walk from home to school does not exceed ten minutes, as the two examples of Fanny and Naomi below show in Figure 15a and 15b.

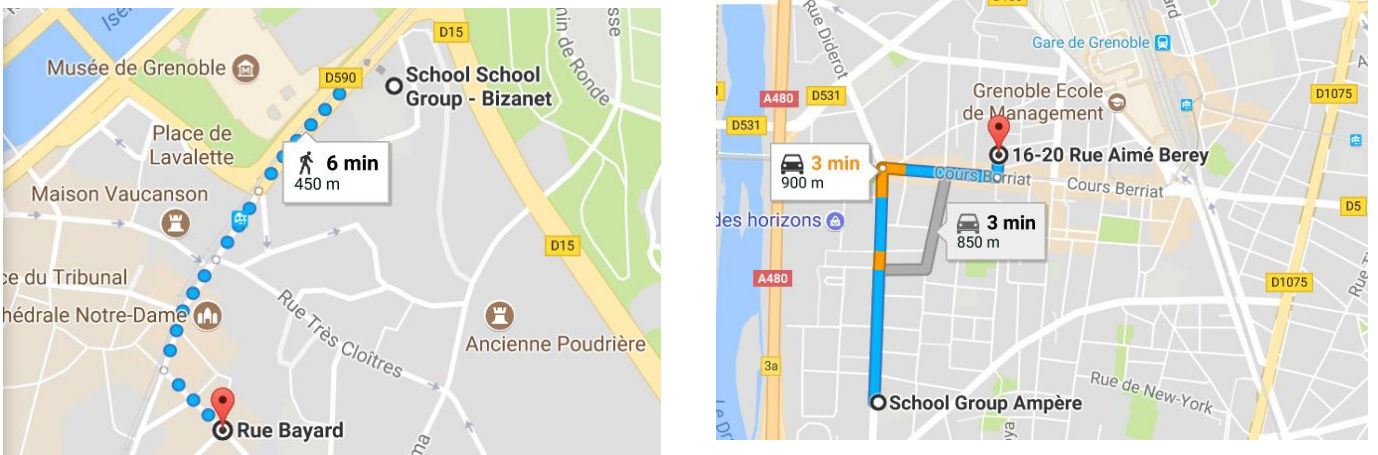


Figure 15: Time and distance from home to school (a)-Fanny (b)-Naomi

According to the French Ministry of Education, in 2012-13, 80% of attend public schools and 20% private schools, which are also regulated by the state. The child is allotted a seat through a centralized system of allocation to the public school nearest to his or her residence. If there are no seats available in the nearest school does the child go to the next closest school. In effect, the child goes no further than the neighborhood or *quartier*. In case of all working mothers of Grenoble interviewed, their children went to the neighborhood public school. Even though the mothers who live in Villeneuve have problems with the security in the area and its ambience, they recognize that everything is accessible on foot- schools, commercial outlets and well maintained facilities like parks and state sponsored recreation centres and libraries for children.

a. Cycling paths

Women who cycle acknowledge that Grenoble is one of the cities that gives importance to facilities for cyclists. While they expressed concerns about safety on the road for cyclists due to other motor vehicles or cycle thefts, they do not have problems with the marking of cycling paths or cycle parking areas. The municipality with a new mayor elected in 2014 from the Green party aims to tripling the modal share of the cycle, creating park and ride facilities, reducing automobile congestion and improving the quality of air. To further this objective, in June 2017, an initiative called Chronovelo was introduced. The project costing 10 million euros involves the creation of a cycling network along 4 axes. It incorporates directional indications and allows in particular to identify, via a color code, road intersections and pedestrian crossings to enhance the safety of cyclists.

b. Walkability

The fact that it is possible to walk through parks and paved streets to reach various destinations maybe an accepted feature of a western European city. But its existence is an enabler of accessibility for those who cannot afford a private car or want to save transport cost. Fatima, a supermarket salesgirl walks from Albert premier Belgique to Village Olympique a little more than 2 kilometres, as does Myriam through sprawling green parks in Villeneuve. Charlotte, a lawyer in centreville deliberately walks to her office, also in the centre, to avoid using the car. The attempts by the government and the European union to promote sustainable transportation by reducing the usage of the car, is possible only if the walking infrastructure is a viable alternative, as it is in Grenoble.

7. Temporal exigencies (inhibitor)

Temporal exigencies made some working mothers completely dependent on the car, even if it was not their choice to do so. These could be either due to

- a. being completely responsible for school escorting
- b. doing a job that was extremely time-bound

a. Temporal exigencies due to school escorting duties

In Grenoble, the journey from work to home for a majority of working mothers was not linear. There were other non-work trips linked to the home-work-home tour making **trip-chaining** as significant a feature in Grenoble, as it was insignificant in the Indian sample. If we consider 187 total trips of the respondents of the previous working day, we see that 'Accompanying a child' formed 20% of all trips, the highest after trips to workplace and the home, and was always chained to the journey to/from work (Figure 16).

This is in line with the data of the French household travel survey Enquete Management Deplacement 2009-10 for the Grenoble region, reveals that 15% of all the trips that women make are escorting trips while only 9% of the trips men make are for the motive of escorting someone (typically children.) Twenty-eight out of 31 mothers had children who were still in school. Out of these, three had children who were able to go to school on their own or with older siblings. The remaining 25 mothers who had young children all performed escorting duties, in varying degrees. Escorting meant that the working mother's schedule was dictated by the school/creche timings and everything else-her professional obligations; social engagements etc. had to be arranged such that she was present at the school/creche at the exact time. Some were forced to use cars only because of this temporal exigency, as illustrated by the following examples:

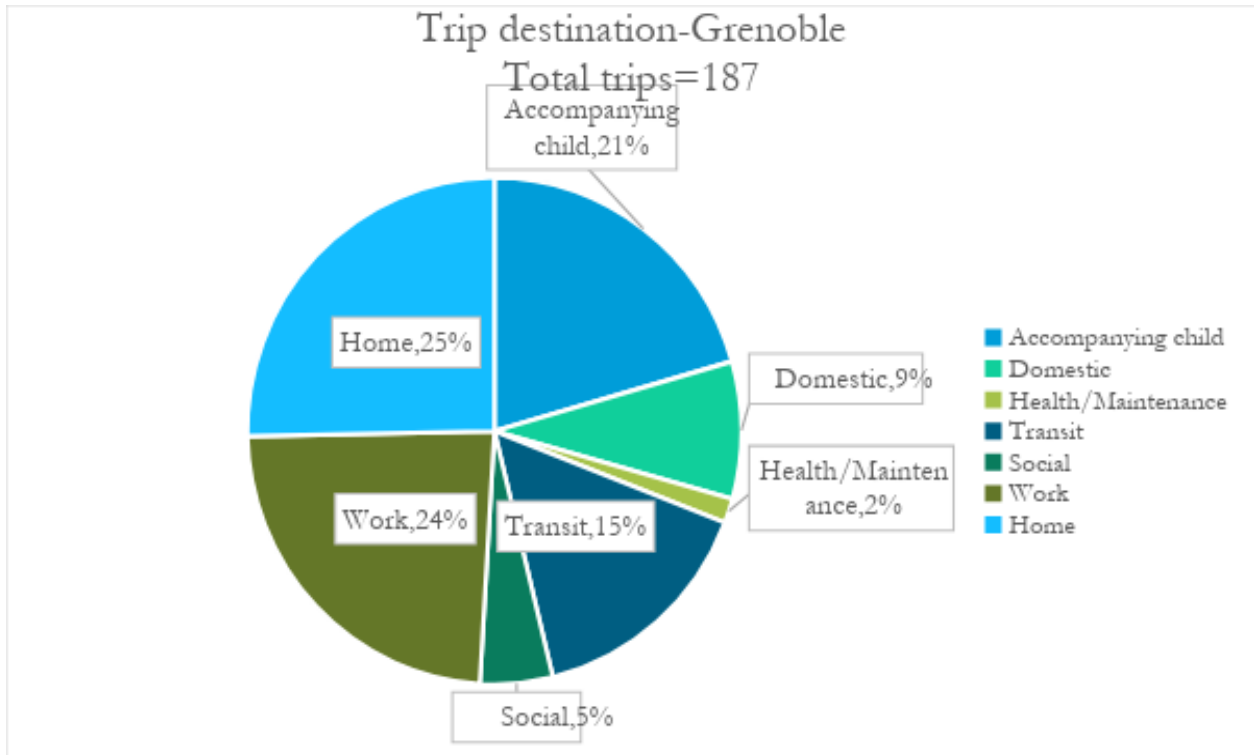


Figure 16 : Purpose of all trips undertaken the previous working day by Grenoble respondents

Lisa was living in Centreville but shifted to Meylan, midway through the school year, so the children continued to study in Centreville. Despite her partner’s office being in the same direction in Fontaine, Lisa has full responsibility of the escorting trip both times. Lisa starts from her home in Meylan to her children’s school in the centre and to her office at the western end of Grenoble in Europole and returns in the evening, making a total of 10 time-bound trips a day as shown below. With public transport she would not be able to do this trip as the connection from Meylan is not direct and requires changing from bus to tram at a mid-point in town. Taking the children along in a rush in the morning and doing interchanges of transport modes would be too stressful and not practical, which compels Lise to use her car. Figure 17 traces her daily journeys while Table 11 gives the schedule, origin, destination and mode used for each of her trips.

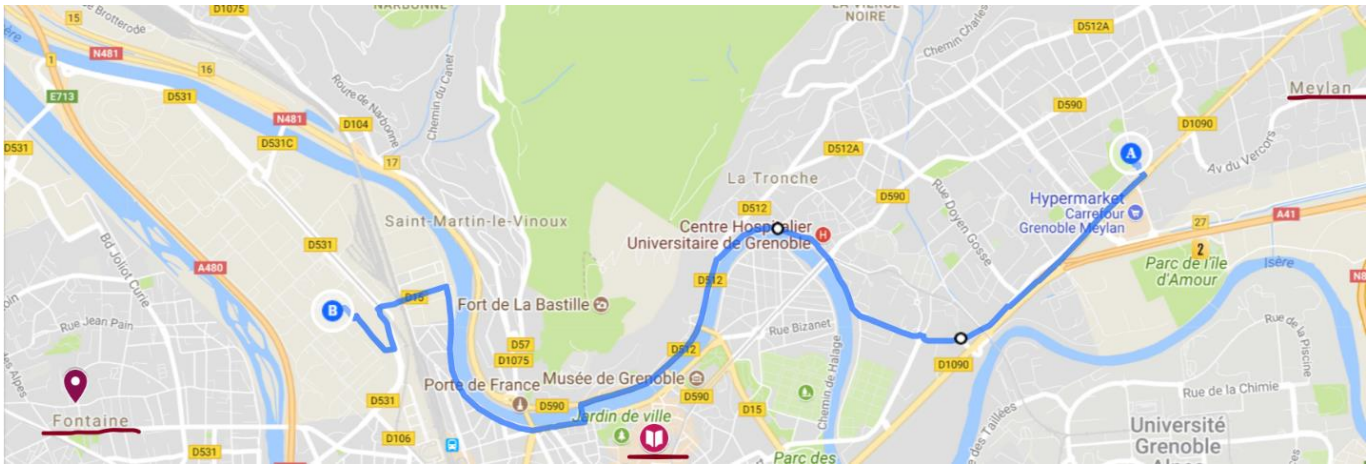



Figure 17: Lisa's daily home-school-office route. A: Lisa's house B: Office parking lot.  School

Table 11: Lisa's everyday schedule of chaining her school escorting trips			
Trip number	Origin	Mode	Destination
1	8.15 home	car	8.35 car parking near school
2	8.35 car parking near school	walk	8.40 school
3	8.50 school	walk	8.53 car parking near school
4	8.53 car parking near school	car	9.10. car parking near office
5	9.10 car parking near office	walk	9.20 office
6	4.45 office	walk	4.55 car parking near office
7	5.00 car parking near office	car	5.15 . car parking near school
8	5.15 car parking near school	walk	5.18 school
9	5.30 school	walk	5.33 car parking near school
10	5.33 car parking near school	car	5.50 home

Fanny, a human resource manager, goes from the hypercentre to the northern commune of Saint Egreve dropping and picking up her two boys aged 4 and 6 to school. Although she uses the tram when she is not on a work trip, she cannot depend on it on a daily basis, with her tight schedule, which requires her to be in office at 9.a.m and back at school in the evening at 5.30 p.m.

“Je vais en voiture car j'ai la contrainte de laisser les enfants à l'école. Les horaires de l'école ont changé et commencent maintenant plus tard qu'avant, alors je gare ma voiture en face de l'école. à stationnement de Musée de Grenoble, laisse les enfants, je la reprends et vais au travail pour y arriver à 9 heures. Je ne peux pas atteindre à 9h si je prends les transports en commun par exemple . Pour respecter l'horaire du travail je dois prendre ma voiture.”

“ I go by car because I have a constraint of leaving the children to school. The school timings have changed and it now starts later than before, so I park my car opposite the school in the Musée de Grenoble parking, leave the kids, take the car again and leave for work so that I can arrive at 9 o'clock. I would not be able to reach at 9h if I took public transport. To respect the work timings, I have to take my car.”)

Another example is of Naomi (number 28 in Table 5) is a researcher working in Hopital Nord, a large public hospital in the neighbouring commune of La Tronche and living near the railway station (Gare de Grenoble in Figure 1b). The children, aged 7 and 5, are dropped to two different schools - école primaire and école maternelle, albeit on the same road. But the timing is crucial because, as is common among French working mothers, Naomi does not work on Wednesday afternoons. French maternelle and primary schools give Wednesday afternoons off for children and working mothers typically also take that time off to coincide their schedules with that of their children. To be able to avail of this facility, Naomi explained that she has to necessarily work for 35-40 hours on the remaining 4.5 days of the week. And she can do that only if she arrives before 8.15. Her hour of exit is fixed by the need to be at the first school at 17h20, so she has to leave work sharp at 17h. During the day, she stays at her workplace so that she can complete the required working hours as well as be on time to pick up the children. This time-table is possible to execute only if she uses her car.

«J'aimais bien utiliser les transports en commun pour plus prendre la voiture mais, pour avoir le temps de poser mes enfants dans l'école à 7.50 et arriver au boulot à 8.15 et pouvoir finir à 17h et rentrer à 17h.30. En tram, c'est pas possible. Je ne peux pas faire mes heures si je devais prendre le tram. Je commence à 8.10, j'avais commencé à 8.30 si j'avais pris le tram.»

(I would have liked to use public transport but to have the time to drop my kids in school at 7.50 and arrive at work at 8.15 and to be able to finish at 5 and return home at 5.30, it's not possible. I cannot stick to the schedule if I take the tram. I start work at 8.10, I would start at 8.30 if I was to take the tram)

Thus, criticism that car usage in France has increased because more women are using cars needs to consider that for many women, it is not a choice but an outcome of their maternal roles and the trips ensuing from that responsibility, which compel them to use cars. Grenoble's tram system links most parts of the agglomeration while on the other hand, those driving to work endure the stress of parking problems and rush hour traffic. It would be easier for women to use the public transport system on the journey to work. But with the school escorting duty, they cannot afford the occasional uncertainty of timings or sudden delays in the tram service due to strikes, protests or technical issues on the tracks.

Accessibility for those mothers who were driven by the need to be spatially present in certain places at certain hours, was only possible through the use of the private car. These women have less capability for spatial access as they are deprived of the choice of going by any other mode of transport.

b. Temporal exigencies due to the nature of the job

The women who made maximum number of trips and traveled the longest distances in terms of kilometres, were two home nurses or '*assistantes maternelles*.' The agencies in which they are employed gave them a daily schedule each morning. The entire day they go from one patient visit to another and are expected to reach exactly on dot for their appointment. The previous working day, Hélène, a home nurse who is a single mother and an immigrant from Congo, made six visits between her home in south Grenoble and the suburbs of Eybens, Echirolles and Saint Martin d'Herès as shown in Figure . The Table shows the strict timings of her job. She said she was able to do this job only because she managed to buy herself a car in 2013.

“J'ai une voiture. C'est pour cela que je me permets d'aller un peu partout. De Eybens jusqu'à Fontaine j'y suis entre 15 et 20 mn quand je prends la rocade, la voie express, en voiture, tandis qu'en bus ça prend une bonne heure. ... Si y a des trams mais avec les correspondances je pense que facilement ça prend une heure, ici y a un bus qui vous emmènerait jusqu'à Chavant et ensuite à Chavant il vous faudra prendre un tram A éventuellement qui vous emmènerait jusqu'à Fontaine ou le C jusqu'à Seyssins et prendre un bus qui vous ramène jusqu'à Fontaine. Mais je les ai fait en bus tous ces trajets-là, avant j'y allais en bus j'avais pas de voiture. Ma voiture je l'ai achetée en 2013. Par ce que là c'était compliqué, tu passes beaucoup de temps dans les transports et enfin de compte ça te fait sortir toute une journée pour pas avoir travaillé beaucoup et la fatigue qui suit avec. C'est compliqué avec ce que je vous explique, de travailler 7 heures sur une journée, quand on rentre on est claqué si on est pas en voiture, tandis qu'en voiture on s'en sort beaucoup mieux.”

“I have a car, it allows me to go everywhere. For example, if I want to go from Eybens to Fontaine, by bus it would take me a good one hour. Yes, there are trams but with the interchanges. I think it would also easily take an hour... From Eybens you go upto Chavant (the mid-point for interchanging trams) and then you have to take Tram A which will take you to Fontaine or take Tram C which will take you to Seyssins and then take a bus that takes you to Fontaine. I have done that earlier when I did not have a car. I bought a car in 2013. It's complicated. You spend a lot of time in transport and you don't end up working much and in addition you also get tired! I work 7 hours a day like I told you, when I return I would be deadbeat if I didn't have a car, with a car it's so much better.”

Suzanne, the other home nurse in the sample made 8 trips from Meylan to the nearby communes like Corenc and La Tronche which are mountainous. She too could not imagine reaching her patients' homes on time if she was to use any other mode of transport, except the car.

Women in jobs which are based on shift timings which fall outside of conventional hours of work, also rely on private transport. One such respondent, Bernadette works in a shift job in a technology company at Crolles, a commune 30 kilometres from Grenoble which falls outside the agglomeration. Sometimes her shift was at 5.30.a.m during which time, public transport was much less frequent. Hence it was easier for her to drive to work. Unlike in Jalandhar, where car driving women were at the top of the mobility hierarchy

and were empowered by their personal vehicle to go wherever they want, in Grenoble, cars were chosen as a mode of transport by women *who would not have been able to deliver their responsibilities without a car*.

Research Question 4a. How does the capability for mobility/spatial accessibility affect other capabilities?

1. Capability for Leisure

1. Access to the mountains

The urban agglomeration of Grenoble has several public swimming pools, tennis courts, areas for athletics practice, ice skating/hockey rinks, outdoor and indoor designated play areas, gymnasiums and fitness facilities. It is almost *de rigueur* in Grenoble for adults to practice some sport as it is a town with a sporting tradition, having been the site of the Winter Olympics in 1968 and owing to its location in the midst of the Alps, close to ski stations and surrounded by trekking trails.

As Grenoble is a valley, the imposing presence of the mountains is ubiquitous, no matter which part of the city one lives in. Most residents have a connection with this natural wealth, choosing to either ski in winters or trek in summers or both. Fatima, the Moroccan immigrant single mother in Village Olympique, has lived in Grenoble for two decades. However, she does not remember the last time she went up to the mountains. She has been to the Bastille a couple of times, (a hilltop which is a tourist spot in the city) and recalls accompanying her son's class to a mountainous place whose name she does not remember. Not having a car, she has never considered going to any of the numerous mountain tourist spots that abound in the Grenoble region.

“J’aimerais aller à la montagne. J’ai jamais l’occasion parce que j’ai pas de voiture et j’ai pas de temps. Il y a beaucoup de choses qui mon empêche...(laughs).”

(I would like to go to the mountains. I have never had the occasion to because I don't have a car and I don't have the time. There are many barriers I face..)

She admits that had she had a car, it would have been much easier to go but is too much work to go by bus and she does not have the time to do that. *“Je suis très active mais juste pour sortir, je suis fainéante. J’aime bien rester à la maison.”* Fatima's daily mobility sheet shows that she returned to work and then made five trips for home/child related work-to the post office, to the supermarket. to register her son for some extra-curricular activities, to pick up her son from school and finally to drop him at her parents' home close by.

Similarly, Myriam originally from Cote d'Ivoire (Ivory Coast), a single mother who lives on the edge of sector 5 and 6, also does not have a car. But transport is not her primary barrier to visiting places outside the agglomeration. Skiing, she says, is not part of her culture, so she would rather save the money for the airfare to visit her home country.

“Si je veux aller skier, je peux y aller, mais je ne veux pas, parce que c’est pas quelque chose qui est partie de ma culture. Chaque vacance on parts en Côte d’Ivoire, en prends le billet d’avion. Du coup je me dis, je ne peux pas payer mil cinq cents euros pour aller au montagne. C’est une priorité ...”

(“If I want to ski, I can. But I don’t want to because it is not something that’s a part of my culture. Every vacation, we leave for Ivory Coast by air. So I tell myself, I don’t want to pay 1500 euros to go to the mountains. It’s a matter of priorities...”)

There are other places she would like to go to, such as Lake Annecy, but cannot due to lack of time from her job as an assistant for handicapped children in two nearby schools.

“Parce que en fait je travaille trop.... j’ai pas trop du temps. Pendant les vacances , oui. Mais pendant les vacances on part pour Cot d’Ivoire.”

(Because, I work a lot. I don’t have the time. During the vacation, ..yes...but during the vacation, we leave for the Ivory Coast.”)

The lack of personal mobility intersecting with low incomes and immigrant statuses preclude these women and their children from enjoying leisure opportunities that are connected to nature. It is yet another example of certain women living in silos in Grenoble, untouched by what are considered routine activities for non-immigrant, middle-class, dual income households.

Another respondent who is in fact middle class and non-immigrant, albeit single is Alice. Living in centre-ville, Alice does not have a car because she believes that Grenoble has sufficient alternate ways to travel. Hence she and her seven year old twins each have a cycle. Nevertheless, her mobility choices restrict her from visiting the mountains because she finds the offer of buses to mountain sites dries up as soon as the ski season is over.

« J’aimerais bien qu’il y a plus de bus pour visiter les montagnes a cote .En fait il y a pas beaucoup. En hiver il y a des trajets des buses pour aller dans les stations des skis...Mais dès que la saison de ski est terminée, il y a plus de bus. il y en a très peu »

(« I would like that there are more buses to visit the mountains nearby. In fact there are not many, In winters there are these routes , these buses for going to the ski stations...But as soon as the ski season finishes, there are no more buses, there are very few. »)

Yet, at least during the ski season when buses are plenty, she takes her daughters for a walk in the mountains, finding the ‘ski du pistes’ too commercial and expensive. There is a difference in the way these three single mothers, all without a personal vehicle, react to the natural surroundings of Grenoble. For Fatima and Myriam, the immigrants in south Grenoble, the mountains are not a priority or something they feel the need to connect to. Alice likes the mountains and accesses them, without letting her lack of car come in the way

of this activity. On the contrary, she avidly uses the public transport available to access ski stations and regrets the paucity of buses in summers. For policymakers, forging a connection of the residents in south Grenoble to the mountains, which are integral to Grenoble life, could be a soft measure of integration. Easier bus connections which begin from Grand Place, a commercial complex in the southern tip of Grenoble, could be one way to offer convenient access.

2. Time constraints

Chloée, a single mother of two children, worked in two jobs- as an instructor in an agency teaching French to foreigners and in her own venture that she had begun recently, offering the same service. She would have liked to visit La Fringe Verte, a forest and park area in the southern commune of Echirolles. But from her house in the east, in the commune of Saint Martin d'Herès, it is about 10 kilometres. Although she has a car, Chloée considers this to be too far and time consuming, although technically she can access the place.

« C'est du temps. J'ai pas le temps effectivement. J'ai pas d'impossibilité parce que j'ai une voiture. »

(“It's the time. Effectively, I don't have time. It's not impossible, because I have a car.”)

This kind of situation, of which there are plenty of examples in this study, resonates with Mei-Po Kwan's seminal paper on gendered mobility (Kwan, 1999). This paper titled “Gender and Individual access to urban opportunities-a study using space-time measures” foregrounded individual accessibility versus conventional accessibility measures that only measure locational proximity. The latter ignore space-time constraints which are especially significant in women's lives. While the park La Fringe Verte, referred to in this example, maybe accessible by car or public transport, as far as this individual working mother is concerned, it remains inaccessible due to her own personal schedules. Accessibility is hence personal to each individual depending on their own daily/weekly time tables. For women, this time table becomes the governing factor of their trajectories and the chief barrier to their capability to access places.

For Celine, Camille and Fanny who are all white, middle class women, the desire to meet friends or pursue other leisure activities of their choice was stymied by their lack of time.

“On n'a pas du temps au même moment-les copines et moi” (Our leisure times do not coincide)-Celine, teacher in a high school.

C'est en fonction de leur temps et du mien. (It's a function of their time and mine)-Camille, urbanist,

« Le temps, la gestion des enfants peut être. Il faut trouver toujours un système de garde (comme je fais les lundi quand j'ai les cours de yoga) Ma contrainte principale est au niveau du temps pour moi et mes horaires sont très cadrés par les enfants...organiser un peu du temps est une fonction de ça.

(Time, managing the children, maybe. One has to find someone to babysit, (like I do on Mondays when I do my yoga class. My main constraint is time, my schedule is made very tight by the kids, organizing a bit of time is a function of that.) - Fanny, manager in an enterprise, Centreville.

Having a shift job as a technical person in a technology company, requires Bernadette, to work on weekends from 5 a.m. to 4 p.m. This means missing out on the time that her friends and even her four children are usually free. She finds that working on weekends is tough for a single mother, though the same schedule was not a problem when she was married. On the days that she is present, Bernadette, being a single mother, overcompensates by constantly doing things with or for her children, the youngest of whom is 14 and the oldest 20. The day prior to the interview had been a weekday but a holiday for Bernadette. She had made 11 trips in and out of the house including leaving one daughter to school and picking her up; taking the car to the garage for repairs, waiting for an hour and returning home; picking up another daughter from a different school and accompanying the eldest in her search for a good apartment to move into. When asked to identify the constraint to doing leisure activities she enjoyed but could not do, such as travelling to Bretagne and painting, she said :

« L'attachement à mes enfants. C'est la priorité. Parfois, les enfants eux-mêmes disent: «Maman, pars! (et fait autre choses)»mais je n'arrive pas encore »

(““The attachment to my children. It's the priority. Sometimes the kids themselves say “Mamma, go! (and do something else. But I haven't managed to detach myself yet.”)

She acknowledged that she needed to take out time out for herself and was not used to doing that. « Il faut apprendre de prendre le temps pour moi. »

3. Finances

The French public institution called MJC- *Maison de jeunes et de la culture*, of which Grenoble has eight centres, offers the possibility of enrolling for a variety of hobby classes (painting, instrumental music). As the fees for such classes are applied according to the “quotient familial” i.e. total family earnings, it is affordable even to lower income groups. There are also public swimming pools where subscription is subsidized according to the ‘quotient familial’.

Despite the plentiful opportunities for sports and hobbies, there are women who are unable to pursue any of these either because of financial or time constraints. Daphne works as a receptionist in a travel agency and lives in social housing in Meylan with two grown up sons. Except walk her dog, four times a day, she does nothing else that is consciously aimed at relaxation. Picking the cards she would like to do but could not, in the Game of Cards, she said:

« Le cinéma aussi. J'aime bien, mais c'est cher. Si on est trois.ca coûte cher. C'est 11 euros. Pour la piscine aussi. il faut faire un abonnement. Vous payez pour l'entrée. C'est que l'argent, parce que j'ai le temps. Financièrement, je ne passe pas derrière. »

(I like the cinema too, but it's costly. We are three, if we all go, it can become expensive, it's 11 euros. For swimming too, you have to register or pay for each entry. It's only money, not time. I have time. But financially, I am blocked.)

An issue of the journal “Society and Leisure” in 1992 offers several feminist perspectives on leisure which are illuminating in understanding our sample’s capability for leisure and factors determining this capability. Women's attitudes towards leisure time are less influenced by their access to it and more determined by their life plans and social identities (Cyba,1992). This explains why despite numerous opportunities for leisure in Grenoble provided by subsidized leisure facilities and natural surroundings, many women are unable to enjoy leisure time, or at least as much as they would like to. Harrington et al (1992) distinguish between subjective and objective constraints to working women’s leisure. Objective constraints included time, responsibilities and fatigue, particularly among working mothers with children under 18 living at home. Subjective constraints included concepts like “the ethic of care” and lack of a “sense of entitlement” to leisure that women lacked. Efforts need to be made by employers, recreation providers and the family to unburden working mothers from these invisible bindings.

2. Capability for Paid Work

In Research Question #3, 2(v)((b), we saw how two home nurses with several client visits to make during the day were able to do their highly mobile jobs only because they possessed their own cars. As discussed in Research Question #3, highly time constrained women used cars to reach workplaces. Grenoble’s well developed transport network of trams and buses as well as consciously developed infrastructure for cycling and walking (See Research Question # 3 (iv) (a and b)) provides those who do not use personal cars, with several acceptable alternatives.

3. Capability for Religion

According to data updated in 2016 on the INED website, (Beauchemin, 2016), 45% of the population declared itself to be agnostic or atheists. Catholicism, which remains the first religion in France, has seen and continues to see its number of faithful decrease. On the contrary, among the immigrant population aged 18 to 50 and living in metropolitan France, more than three-quarters of immigrants and their descendants claim to have a religion. Although there is very little gender-disaggregated data about religious beliefs, in 2010, the IFOP survey on the practices of the Catholics also showed that most practicing people are women. In France, 61% of practicing Christians are women even though they only represent 52% of the total population.(Zwilling, 2014).

All the immigrant women of the sample attested to believing in God and following a religion-either Islam or Christianity. Like in the case of Indian cities, religious activity also served to be a leisure activity. For Yasmin, from Benin, singing in the church choir in Fontaine every Sunday was a place to practice religion but also to meet friends. For Alice, a white Christian woman who voluntarily follows Islam, the spiritual dimension was extremely important and “being more Zen” was the functioning she aspired for.

4. Capability for Nurturing relationships

The decision to be employed profoundly alters a mother's quantity and often quality of time spent with her children. However, single mothers living alone on only their income, do not have the flexibility to drop out of the labor force or reduce their hours in response to the needs of their children. Further, single women living alone (like those in the Grenoble sample) without any other supporting adult at home, are the sole managers of their households. This leaves them less time than married women or single women who live with other adults (like a supporting parent) to spend with their children. A study of 1821 single mothers utilizing the 2003 and 2004 American Time Use Survey found that single mothers spend less time with their children than married mothers do, consistent with the notion that they are "time poor." (Kendig and Bianchi, 2008). Spending time with their children may become especially precious to them and the focus of their energies. (Kendig and Bianchi, 2008). This has been termed "compensatory connection," or increasing the attention and prioritization given to one element of one's life in order to make up for insecurity experienced in other realms. Specifically, women who experience their partnerships or work lives to be insecure exhibit pronounced attachment behaviors with their children (Villalobos, 2014). This often takes a toll on other relationships, as Alice recounted:

" I recently separated from someone because he felt I was all the time engaged with my kids..24/7..I can't help that I am a single mom, I have no family here to help with things...so it was too complicated for him and he preferred to end the relationship."

According to the French agency Allocation Familial, the latest figures for 2018 show that the average standard of living of young children living in a single-parent family is lower than that of children living in "traditional" families, with the former households having an income of 15,400 euros per year as opposed to 23,000 euros per year for the latter (CNAF, 2018). This might make single mothers overcompensate by spending more time with their children, sometimes compromising other activities/states of being they value.

Research Question 4b. What are the constraints to achieving capabilities required for well-being?

In Grenoble the card that was most picked to depict the present state of "Being" was the stressed woman who had too many demands made of her (Figure 15). Although in Grenoble the number of respondents was the least among the three cities, there were proportionately many more functionings desired. Out of 72 images of doings and beings picked up by respondents, most corresponded again to leisure and the lack of opportunity to have social connections. "Je manque du temps" was the most often stated reason in the interviews in Grenoble when women were asked to identify the barrier to their achieving desired functionings like doing a certain activity with their child or meeting friends socially more often. Lack of

finances for pursuing certain activities was mentioned by 14 women, nearly half the sample as we see in Table 12.

Table 12: Potential functionings desired in Grenoble according to the Game of Cards											
Functionings desired but not achieved	Mobility	Domestic Work and	Paid Work and Financial	Leisure and Social	Health, Physical	Nurturing Relationships	Self-	Having more	Being more relaxed	Row Total	Number of times constraint was mentioned
Constraints											
Time	2			16	6	4			8	36	50%
Personal			2	3		2				8	11%
Family				1						1	1.5%
Mobility				1						1	1.5%
External	1		2							3	4%
Physical Energy				1	1					2	3%
Finances	2			4			1	14		21	29%
Column Total	5	0	4	26	7	6	2	14	8	72	100%

1. Time as a constraint

Table 13: Time usage (out of 15 hours)						
		Components of Time spent out of the house				
	Percentage of time spent out of the house (out of 15 hours)	Journey Time in hrs.	Time spent at work	Non-work travel in hours	Time spent on non-work activities outside the house	Percentage of time spent inside the house
Grenoble	61% (9.2)	7% (0.62)	76% (7)	10% (0.89)	8% (0.71)	39% (5.8)

Table 13 gives the time usage of the working mothers studied in Grenoble. Like in Jalandhar, in Grenoble too the ratio of time between outside and inside the home was 60:40. Although journey time to work was lesser in Grenoble, owing to the smaller size of the agglomeration, more time was spent in non-work trips,

relative to Indian cities. In the next section we dwell on how the approximately 40% time is expended while at home.

i. Time at home

On an overall basis, cooking was still a woman's forte. But compared to Indian mothers certain aspects of meal preparation were rendered easier because of social and institutionalized practices. Cooking in western kitchens is far easier as even lower income households have several kitchen gadgets while a corresponding home in India would probably have none. Also, cooking is not mandatory for the French working mother as children typically eat in the school canteen under the *Restauration Scolaire* system which provides nutritious and subsidized lunch. For office-goers there are many options of procuring hygienic, good quality food such as office canteens or restaurants or instant food from supermarkets. The sharing of the cooking task seemed to be a matter of practical convenience where the spouse who was at home during mealtimes or was a better cook, took on the job. For instance, Sophie, an engineer did not cook much because her husband was a professional in the food business and was hence a better cook. Thus, French working mothers seemed to have more choice on whether to cook or not, due to an understanding between partners as well as acceptable options available outside the home.

There is evidence to show that in western countries of Europe and North America, men's care giving work at home has increased over time. For example, in one study found that time spent by British fathers accounted for one third of the total parental childcare time (O'Brien and Shemilt, 2003) and fathers' aspirations for active involvement was found to be high. However, in the Grenoble sample of this study, it was found that the role of husbands could vary depending on factors like the negotiating ability of the woman and other factors such as the employment status of the partner.

a. Middle class homes

More educated, middle class women managed to create an arrangement with their partners that ensured a more equal division of tasks. For Laura, an artist who identifies herself as a feminist, it was important to ensure that the tasks were precisely equally divided between her social worker husband and herself. Camille, an urban planner and her husband made it a point to fetch their son from the creche together in the evening. They went by bicycles and treated this trip as a special time for the family. Sarah, a legal officer with a notary dropped the children to their schools in the morning which invariably led to her reaching late for work, as there was always a traffic jam on the particular road in Meylan that she had to take for the school. So, in the evenings, her husband who started work earlier brought the kids home, prepared dinner and fed them. This helped Sarah to return home later in the evenings, after 7, to compensate for the morning delay in reaching office. was home earlier.

“ C'est mon mari qui cuisine, comme il est plutôt ici dans les soirs en semaine. Moi, je cuisine temps en temps.”

(It is my husband who cooks, I do it once in a while.)

On the other hand, in lower social classes, men participated less. Ironically, this was more so when the men were unemployed. Marie, a primary school teacher in the commune of Giers lives with her two year old son and her unemployed partner. She vividly expressed her dissatisfaction with the division of duties at home. “He does the vacuuming only in the main living room and I do the rest. I do the vessels and washing. He makes some pasta for the child in the evening because I bathe the child. I cook , clean the bathrooms”

“Je ne trouve pas du tout que c’est bien partagé’...pour le petit et pour tous quoi!”

(I don’t at all find that the tasks are equally distributed. With respect to the child and overall too.)

She narrated the time when she had to go on a school trip to Paris for three days where she was forced to leave her son with her mother , rather than at home with her partner because :

“J’étais pas très sûre qu’il est bien capable de le gérer pour trois jours. Son papa ne le garde pas forcément comme je le demande”

(I was not very sure if his father would be able to manage him for three days. He doesn’t always look after the child the way I ask him to.)

With a single income, the creche was difficult to afford. Official records listed her partner as ‘employed’ as he had held a job in that calendar year. This made it difficult to avail of the child care benefits that are given to households with a single income. As her own parents had full-time jobs, she relies on her mother-in-law who lives in the same apartment block. This arrangement had its own complications.

“Quelquefois j’aimerais le laisser (avec ma belle-mère) dans la journée mais son mari il fait la sieste, mon petit dort pas forcément à la même heure, je ne veux pas qu’il dérange. Mon fils est en pleine forme l’après-midi , je ne peux pas trop l’imposer.”

(Sometimes I would like to leave him with my mother in law during the day, but her husband takes a siesta in the afternoon and my little one does not always sleep at that time, I don’t want that the (father in law) should get disturbed. My son is very active in the afternoons...I cannot impose myself too much on them.)

b. School escorting trips

The relative freedom from cooking which French mothers had compared to Indian mothers was compensated by the responsibility of school escorting trips, that in the Indian case was not a mother’s job because of the existence of school buses or grandparents at home. Mothers’ primacy in school trips in western settings has been established in several studies (for e.g. Barker, 2011 for the UK). The study of escorting patterns of parents in the Paris region (Motte-Baumvol et al ,2017) found that far more mothers did the escorting duty both mornings and afternoons (15.8%) as compared to fathers (3.6%). This was because the mother’s working day was often more compatible with escorting than the father’s, especially in terms of starting and finishing times, commuting distance, type of employment and means of transport.

In Grenoble, six respondents from dual earning households both dropped and picked up children. Although their partners helped occasionally, the mothers had primary responsibility for this job. What is remarkable is all of the respondents felt that it was not an imbalance of responsibility and justified their partners lesser involvement. Though this was the case here, in other literature there is evidence to show how care responsibilities and practices can be contested, and how care-giving processes can be sites of struggle (Williams, 2002). How women with dual time escorting duty, maneuver their own schedules to be at the school gates on time are evident in the four examples below.

Fanny and Naomi who use the car only because they have to manage the rigidity of school and work timings (See II.(7)) have partners who almost never pick/drop their children from school. But the two women feel it is justified as the men work hard and do not have time to accommodate this task in their day.

Paula works as a *Surveillance au Lycee* at the Lycee Gresivaudaun in Meylan on three days and on two days she goes to south Grenoble where she attends classes to pass the *concours* (selection exams) to become a school teacher. Her partner has a full-time job as a *cordiste* (steeplejack) in large construction sites. They live in the eastern suburb of Domene with their 2 year old daughter. She drops the child to the baby sitter at 7.30 by car and returns by 18 to pick her up. When does her husband do this task?

« Il le fait quand je commence des fois le matin à huit heures par exemple, dans ces cas-là. Comme je pars à 7.30, lui il la dépose. S'il n'était pas au bureau parce que des fois il a un chantier. Il part tôt. Si c'est lui qui part de la maison le plus tard, il l'amène. Pour la récupérer, c'est pareil. Ça dépend...si c'est lui qui est là à 17h ou 18h...il le fait. »

(“Yes, he does if sometimes my day is starting earlier at and I have to leave by 7.30, then he drops the baby. Sometimes he starts late, so then drops the baby. Similarly for picking up, it depends...if he is there at 17h or 18h, he does it.”)

Ayesha manages a restaurant in Villeneuve that is run by a social support group for women. She lives in a lower class neighborhood of the otherwise upmarket commune of Meylan. Her husband works for a small chemical company. The school is 10 minutes away; she drops her five year old to the maternelle, walks the older one, who is 10, to the primary school, then takes the bus to work. A couple of years ago when her younger child had not yet started school she recalled how stressful it used to be.

« Il y a deux ans que j'ai commencé (ce boulot). Quand j'ai commencé, mon fils, il n'était pas à l'école. Et j'appelais tout le temps ma voisine. Il restait deux jours à la garderie et il dormait trois jours chez ma mère. Je devais m'organiser. Je courais entre la garderie et école, j'allais chercher mon fils à la garderie et j'allais chercher ma grande à l'école...C'était tout le temps...C'était vraiment speed ! Pendant huit mois je recommence pas. Ce n'était pas possible. Avec deux à l'école, je cours plus.”

(I started this job two years ago. When I started, my son, he was not at school. And I used to call my neighbor all the time (to help). He stayed two days at the daycare and slept three days at my mother's. I had to get organized .. I ran between the daycare and school, I went to get my son at the daycare and I went to get my big one at school ... It was all the time It was really hectic. For eight months I do not start again. It was not possible. With both at school, I no longer run as much ...)

Ayesha's husband steps into help with escorting only when she has an occasional meeting for her which begins at 18h and finishes at 20h. On such days he picks them up from the school.

Olivia, is a self-employed, single earner of her family. with a garments store in Villeneuve. Her husband is unemployed having been retrenched from his job. Olivia drops her three children to school in the mornings and again goes at 11.30 a.m. to pick them up and bring them for lunch. Post lunch, she drops them off at 1.30 and only after that does she begin work. Compared to three back and forth home-school trips that Olivia does in the day, her husband does one when he brings the children home at 4.30. p.m. This is similar to the Indian cases where self-employed women were highly mobile, and hence perceived by the family to be highly available.

c. Effect on the capability for paid work

The capability for care work involves time and hence a tradeoff with other capabilities particularly the capability for paid work. Since all the respondents in this study were working mothers, the tradeoff between domestic work and paid work was not a drastic one of being a housewife versus being a working woman. Nevertheless, it manifested itself in subtler ways such as mothers in Grenoble who have to leave office early or adjust their work timings according to



Figure 15: Picture showing a stressed woman

the school timings. How this might constrain a working mother can be understood better if we look at the freedoms gained by those who do not perform the escorting task. This perspective shows what can be possible if a working mother does not have the obligation to drop or bring back a child from school.

As French schools start between 8.30 and 8.45 a.m. typically, the mothers who have to drop the child to work have to synchronize their exit from the house to match that of the children's school timings, so that they can drop them and then go to work. All mothers who drop their child to school leave between 8.15 a.m. and 8.30 a.m. The exit time of the mothers who *do not* have to perform this duty is earlier or later, as required by their jobs, but independent of school, as shown in Table 14.

Table 14: Temporal freedom of mothers who do not escort in the mornings

Name	Hour of departure from home	Reaches work at
Charlotte	9.00	9.40
Myriam	8.30	8.40
Margot	7.30	7.45

Charlotte is a lawyer in Centreville with two children below 10. Her husband drops the children on the way to his office. In the afternoons the parents had a pool system, where different parents took turns to bring the children home. Charlotte is therefore able to leave at 9.00 and take a 40 minute walk to go to work. This gives her 45 minutes in the morning to attend to herself or accomplish other tasks.

Myriam, is a single mother in Malherbe whose 10 year old son goes to school across the road independently. Hence she is able to leave at 8.30 a.m. and reach her workplace at 8.45. Margot leaves for her job as a researcher in a scientific laboratory as early as 7.45 a.m. while her husband, who is unemployed, later leaves the baby in the creche. Not being tied to school timings, allows women the **freedom to take up jobs that start before 8.a.m. or after 9.30 a.m. Similarly, in the evenings, those who do not have escorting duty do not have to match their timings with the school's . This has important implications for the range of jobs that women can then apply for.**

Ana Gil Solá (2016) has investigated gender relationships in terms of gender contracts in Swedish households with small children and found that the type of gender contract led to different activity spaces in the labour market. Households with traditional gender contracts prioritized men's activities, while households with gender-equal contracts prioritized equivalent activities for women and men, resulting in more flexible arrangements

based on the household members' negotiations. The mixed-contract households ended up with some cases of unequal and some cases of equal opportunities on the labour market. (Gil Solá, 2016). Analogous to this study, we see from this section that the type of arrangement between the working mother and her partner determines the kind of job she performs and to what extent she prioritizes her job in her schedule.

d. Single mothers

There were 10 single mothers out of 31 respondents in the sample. This is an important dimension not only from the point of view of impacting the income of the household but also with respect to the amount of tasks that the working mother has to perform. Single women are disproportionately burdened with child care responsibilities. Twelve percent of children under 6 years old in France live in a monoparental home of which 65% live almost entirely with their mother. Fathers of the children may stay in contact but do not

typically drop children to creches or schools during weekdays. (CNAF, 2018). In France, there is a greater dependence of single mothers on informal arrangements such as grandparents and the collective child care option of creches, than in the case of dual parent homes where partners had the option of dividing child minding between themselves. Having only one income, fewer single mothers could afford the more expensive option of individual child minders called 'assistant maternelle' (CNAF, 2018). Box 2 narrates the dependence on their parents, of two single mothers belonging to ethnic minorities and living in a relatively underprivileged area of Grenoble. The vulnerability of their child care arrangement is more than others as apart from being single they are in jobs with variable timings. Other studies also show that single parents, parents working long- or nonstandard hours and parents from financially disadvantaged families are most likely to use grandparent care.(Janta, 2014).

Box 2: Single mothers' dependence on their parents

Support extended by parents eases constraints for single mothers in Grenoble who have irregular job timings. Fatima the divorced Moroccan mother with a 7-year-old son. She is a salesperson in a supermarket and works in a shift job. Often, she has to leave home by 4.am., so she leaves the child with her parents who live five minutes away and brings him home in the weekend. In this way, Fatima manages her variable timings at work.

Hélène, an assistance domicile (nurse who makes home visits) is an African immigrant from Cameroon. She is a single mother who lives in the low income locality of Arlequin, adjoining Villeneuve. She works for 8-10 hours a day, making as many as 10 trips crisscrossing the agglomeration and driving for more than 50 kilometres in a day. Every night she gets a schedule from the agency which is employing her. Sometimes a visit could start at 7.30. a.m. sometimes at 10.a.m. This variability makes her presence at home uncertain at the time her 4 year old daughter needs to go to school. Therefore, the child stays with Hélène's mother a few blocks away on all weekdays except Wednesdays. Through her parents' support, Hélène's child care responsibilities are shared to a considerable extent.

IV. Conclusion

The idea of the dualization of city, especially the greater metropolis, has been developed by many authors. The most elaborate theoretical model is undoubtedly that of the "global city", sketched by J. Friedmann (1982) then developed by Saskia Sassen (1991) in her eponymous book. Sassen, points to a bi-polarization of the social structure between, on the one hand, the favored pole of the "Global service class", and on the other hand, a new tertiary proletariat consisting of all categories of low-skilled, low-paid, low security precarious jobs like (office workers, couriers, etc.) or personal (salesmen, waiters, launderers, etc.) This phenomenon is in evidence in Grenoble-Alpes metropole, where spatial north-south segregation is a visible expression of issues of integration and exclusion. Residence location played an important role in determining the extent of capability for physical access of the women in the sample. Those who had no choice but to live in poor immigrant colonies of the south had self-limiting barriers towards accessing more upmarket

areas like the hypercentre of Grenoble. Perceptions of “good” and “bad” areas created mental barriers to access and an invisible north-south divide in the city.

Tram A which passes through the poorer areas of south Grenoble is avoided by many women who live in the northern parts, as several respondents said, mainly because of the presence of certain kinds of men - lower income, men from ethnic backgrounds, younger men and maybe unemployed ones. The skewed profile of male co-passengers and gives women the feeling that “regular middle class men who travel for work” are missing. Dualization of the city is exacerbated by policies which spatially locate modern industries more to the north. The fact that they are elite industries belonging to the “knowledge economy” isolates the working class population of the south while making them more accessible to the more educated population of the north. Thus, both spatially and socially, these divisions get intensified. As there is considerable involvement of public funds involved in the city’s economic growth (4 billion euros according to an Isere department report of 2016) through promotion of technology, these opportunities ought to be equally accessible to all citizens.

The dimension of women’s underrepresentation in Grenoble’s knowledge based economic progress, elaborated in this chapter, adds to the debate that has raised its head at various points in the city’s growth, where questions have been raised about whether the scientific/technical platform is indeed the only one for the city’s future. Alternate models have been proposed, as being more “virtuous” and beneficial to the city, but the voices proposing these alternatives have become less audible in times of economic crises. (Bloch, 2013). The knowledge economy alone may not be enough to create jobs and income in the future. Exceeding this specialized development model involves taking into account the interests and projects of other groups making up the urban society, in particular through a deepening of participation schemes.

An INSEE study of two Time Use surveys (1998-1999) and (2010-11) showed that even though French women’s participation in the job market has grown tremendously, it has not redefined gender roles in the family (Sofer and Thibout, 2015). According to this study, in two worker couples where the woman was highly career oriented, men performed little more household tasks only if the female partner had a higher social status, though their participation did not change if the woman earned more or was more educated. The authors concluded that there was no observable shifts in roles that would imply an efficient distribution of tasks. As discussed in this chapter, there was frequent evidence of the spouses of the working women in Grenoble shouldering fewer household responsibilities. Although there is more equal division of work between male-female partners in western countries compared to Asian countries, the heterogenous nature of present day French society brings in considerable variations in this aspect.

One of these tasks which is performed more by mothers than their spouses is the school escorting trip. In France, government as well as private offices start work at 9.a.m. Public schools in French cities like Grenoble typically begin at 8.45 a.m. Children are dropped five or ten minutes before. So mothers escorting children have to leave along with their children around 8.15 a.m. This is consistent with the gender-based spatio-temporal analyses of daily mobility in the Rhone-Alpes agglomeration (region where Grenoble is located) done by the organization CETE (Hurez and Richer, 2014). The analysis found a spatial concentration of working women at schools at 8.30 a.m. as they were performing the task of accompanying the children to school. Feminist economists and sociologists have shown how women's role in parenting constrains their ability to pursue careers and compete for demanding jobs. Susan Okin (1989) has termed this a “cycle of vulnerability” -because women tend to earn less than men, if someone has to take time off to raise the kids, it makes economic sense for it to be the female lower earner. The Grenoble sample showed cases where linking work commitments with home related commitments limits women to certain hours within their jobs.

In the Grenoble agglomeration, a minimum of 80% of the women hold a driving license, like in the rest of France. Unlike in India, in urban contexts, car ownership is not seen as “prestigious” but on the contrary it is trendier to adopt non-motorized transport that conveys eco-consciousness. However, for some women, car ownership is a compulsion as their time schedules are too rigid to allow for the uncertainties of public transport or slower speeds of walking/cycling. A recent study from Sweden (Solá et al, 2018) warns that policies aimed at sustainable accessibility for e.g. policies directed at reduced car usage, need to take into account the tensions and trade-offs between the needs of different groups. The examples of several working mothers in this sample underlines how sustainable mobility is not a matter of choice for those with severe time constraints. Reduced car usage policies need to factor in the daily lives of working mothers and why they prefer private transport to Grenoble’s well- functioning public transport system or its neat cycling paths and walkways.

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**PART 3: OVERALL RESULTS AND POLICY
IMPLICATIONS**

CHAPTER 7 : Learnings from all cities

Despite the differences in socio-economic levels and culturally embedded practices between the working mothers of Jalandhar, Trichy and Grenoble, there were several common strands in their lives which are worth highlighting. In this chapter, we weave together the learnings that emerge collectively across the sample, for each of the capabilities examined through the Game of Cards. Wherever relevant, we connect these to existing literature. We also examine the constraint of time in detail.

SECTION A : Summarizing the results

I. Basic Mobility Overview

Before we summarize the results of the four research questions we present some visualizations of basic parameters of the mobility data of the respondents interviewed in the primary survey, to enable a quick overview of the three cities. The figure below presents the average distance travelled on the journey to work and on non work trips. At least 80% of the distance covered each day is on the journey to work in all three cities. The distance of non-work destinations was rather small in all cities-under 5 kilometers.

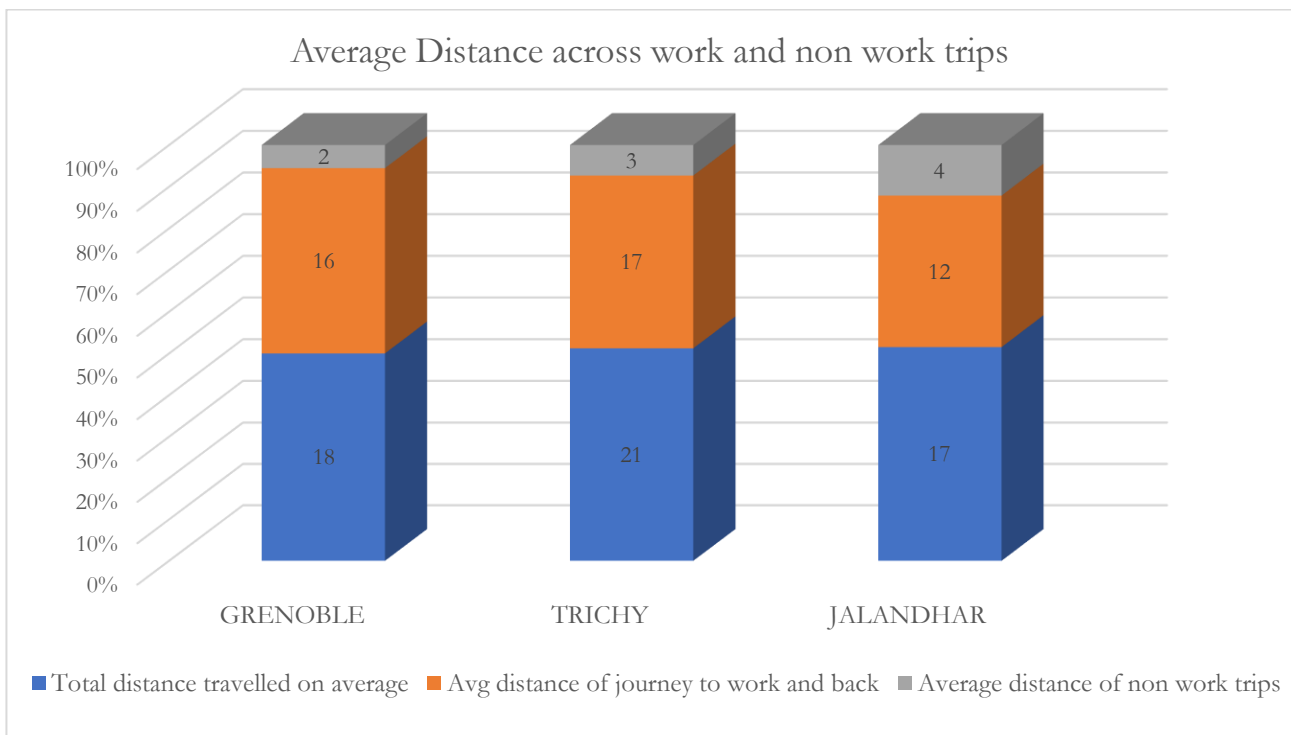


Figure 1: Avg distance of work and non work trips in all three cities

Table 1: Transport modes used by respondents in each city

	Percentage using public transport for the journey to work, including autos	Percentage using private transport for the journey to work including a combination of pvt and public transport	Percentage using non motorized transport for the journey to work
Jalandhar	14	67	19
Trichy	41	47	12
Grenoble	47	41	12

Table 1 above shows a comparison of the mode of transport used by respondents in the three cities. Due to the absence of public transport in Jalandhar, a majority of the sample-67% used private transport-both cars and two wheelers. This number also includes those who used a private transport for some distance and then switched to an auto. Autos have been treated as public transport in this table. In Trichy and Grenoble, the division between private, public and non motorized is similar. Like the public transport in Grenoble, Trichy too has a network of buses although the service has several shortcomings. Here, the figures are only concerned with the usage of public transport, not its experience. Hence they reflect the strong commuter behavior of using public transport in both Trichy and Grenoble.

Table 2: Types of trips

	Total number of trips per day (work+non work)	Most frequent non-work trip
Jalandhar	5	In Transit-13%
Trichy	6.2	In Transit- 18%
Grenoble	6.5	Accompanying a child -21%

Table 2 shows data related to non work trips. Again, Grenoble and Trichy show a similarity in the average number of trips. However, while the most frequently cited non-work trip undertaken by a working mother in Grenoble was accompanying a child to/from school, in the Indian cities the highest number of trips were transit trips- walking to a bus stop or auto stand or taking one mode of transport to reach an interim destination.

II. Encapsulating answers to the four research questions

Research Question 1 : What are the mobility characteristics of working women according to secondary data?

Jalandhar and Trichy

According to the last census of India in 2011, the average number of working women who do not travel, in urban India, is 35%. Both the Indian cities studied show variations from this mean as **in Jalandhar 40% of women do not travel outside for work and in Trichy, the figure for women working from home is only 26%**. A principal reason for this is the existence of a public bus service system in Trichy and in contrast the lack of public transport in Jalandhar. As per the census, in Trichy, 41% of working women use the bus service for their daily commute. Another evidence of the link between the availability of intracity buses and women's higher capability for mobility is that in Trichy 7% of working women travel over 20 kilometers while in Jalandhar only 3% do so. However, in both cities, like the rest of India, a majority (35-40 percent) do not go beyond 5 kilometers and nearly half the female working population travels mainly on foot. Among districts of population size 1 to 1.5 million, Jalandhar has the highest usage of two wheelers by women commuters. This high percentage is also an outcome of the absence of intracity public transport.

Grenoble

Unlike in the Indian cities where only 5% of women use private cars, secondary data shows that **in Grenoble 58% of women use their car as the primary mode of transport while 12% use public transport**. Grenoble was one of the earliest French cities to start an intracity tram network and has a strong tram and bus network connecting different parts of the agglomeration. Women's usage of cars is almost equal to that of men in the agglomeration while their use of public transport and walking is more, a trend that reflects the overall country scenario.

Research Question 2 : To what extent do women have the capability for mobility according to the primary research in each city?

Jalandhar and Trichy

Measured against the indicator of being able to travel alone by any mode of transport, except walking, we find that in Jalandhar, **a quarter of the sample does not have the capability for mobility**. Social constraints discouraged unaccompanied travel for some middle class women while for low income working class women the spatial entrapment caused by living and/or working in isolated industrial areas

created mobility barriers. On the other hand, in Trichy, 100% of the women had the capability to be mobile. Women with private cars/two wheelers enjoyed the maximum mobility freedom in both cities.

Grenoble

100% of the women had the capability for mobility enabled by an absence of social censure on women travelling alone, easy walkability in the city, wide possession of personal cars and a well-functioning public transport network.

Research Question 3 : Do women who have mobility also have the capability for spatial access, according to the primary research of each city?

Jalandhar and Trichy

The Multidimensional Accessibility Deprivation Score which took into account time taken for travel, number of trips, distance to transit stops and journey quality showed that the average accessibility score for Jalandhar respondents was 1.3 while for Trichy it was 1.7 (higher score=lower accessibility). This brings to light the complex inter-relationship between mobility and accessibility. In Jalandhar, some women belonged to the “Mobility Have Nots” but for the subset of “Mobility Haves”, accessibility was higher due to use of personal vehicles. In Trichy, all the women had the capability for mobility but due to higher dependence on public buses which involved waiting, interchanges and discomfort their accessibility was poorer. Does this mean public transport could reduce accessibility? Public transport expands the capability for mobility for those who do not have personal vehicles but the experience of women in Trichy shows that **accessibility depends on the *quality* of public transport.**

Apart from problems with the bus service, in Trichy, lower accessibility was also due to women travelling long distances to reach central Trichy city, where employment is concentrated. This constraint was due to the fixity of their residential locations in/near their parents homes since the women depended completely on the older generation for child care support, while they were at work. Relative transport exclusion of new residential neighbourhoods which have emerged in the periphery of the agglomeration of Trichy, contributed to accessibility deprivation.

In both cities, presence of paratransit options such as the auto rickshaw and cycle rickshaw enhanced women’s spatial access by enabling short trips, door to door and seamless trips without mode changes.

Grenoble

The accessibility deprivation for women sampled in Grenoble was lowest at 1.2, indicating similar capability for access as Jalandhar but much higher capability as compared to Trichy, on the face of it. However, comparisons can be misleading because the reason Jalandhar has similar accessibility among respondents

considered is because several use private transport which saves them from typical accessibility issues such as wait times or the uncertainty of waiting for public transport. Grenoble's higher accessibility stems from entirely different reasons- a good public transport network and walkability.

The time spent on commuting was lesser in Grenoble compared to Indian cities but the average number of trips was much higher in Grenoble at 6.55 comparable to Trichy's 6.2, while in Jalandhar it was only 5. The reasons for this are different in each city. In Grenoble the number of non-work trips made by the mothers was high, as one third of the sample comprised **single mothers** who bore the burden of all domestic trips on their own. In Trichy, the number of transit trips were very high owing to **poor connectivity and frequent changes of buses** that the women using public transport have to make. In Jalandhar the average trips were low as the **joint family system**, ensures non-work trips are often made by the father/mother in law while the working mother is at work.

Grenoble's women displayed a **mental rather than a physical accessibility barrier** to certain areas of the city. Lower income ethnic migrant women in the southern *quartiers* of the city felt culturally and socially excluded from the north while the predominantly white women respondents of the north perceived areas south of the Grand Boulevards to be 'dangerous'. Ironically, **fear of sexual violence** as a barrier to accessibility was spoken of only in Grenoble and not at all in the small Indian cities. In all such narratives in Grenoble, there was no personal experience of such violence but impressions formed by media reports and hearsay. In India, media reports have volubly reported crimes against women in the metropolitan cities such as Delhi and have helped perpetuate a fear psychosis. The views of women in smaller urban centres provides a point of contradiction to the prevailing image of Indian cities as fearful places for women.

In all three cities, accessibility was curtailed by the **temporal rigidity** faced by working mothers **in salaried jobs with fixed, conventional working hours**. All such women in France and in India, performed various negotiations and put in place different arrangements to manage temporal demands of work and home.

Research Question 4

a: How does the capability for mobility and spatial access affect other capabilities?

b. What are the constraints to achieving the capabilities required for well- being?

Jalandhar and Trichy

Where present, the capability for mobility enables and enhances the capability for paid work; capability for leisure, social networks and religion (visiting religious places). The absence of the capability for mobility diminished the capability for paid work, leisure, religion , capability for nurturing relationships, capability for child-care and the capability for health and fitness (in Trichy). Table 3 below captures the results of the interplay between the capability for mobility and other capabilities required for well-being.

Table 3: Relation between the Capability fro Mobility and Spatial Access and other Capabilities required for well being								
		Capability for Paid Work	Capability for Leisure	Capability for Social networks	Capability for Religion (visiting places of worship/pilgrim sites)	Capability for Child care	Capability for Nurturing Relationships	Capability for Health and Fitness
Jalandhar	Presence of the capability for mobility/spatial access	Enhanced	Enhanced	Enhanced	-	Enhanced	-	-
	Absence of the Capability for mobility/spatial access	Diminished	Diminished	Diminished	Diminished	Diminished	Diminished	-
Trichy	Presence of the capability for mobility/spatial access	Enhanced			Enhanced			
	Absence of the Capability for spatial access ⁹				Diminished			Diminished

In the Game of Cards, respondents in Jalandhar mentioned 90 doings/beings that they desired but were unable to attain (see chapter 4, section C, research question 4b). Of these, a desire for improvement in mobility was mentioned 21 times. Only in 6% of the cases respondents pinpointed lack of mobility to be a direct barrier to achieving a desired functioning.

In Trichy, among 41 desired functionings (see chapter 5, section C, research question 4b) improved mobility featured only 9 times. It was not identified as a direct barrier by any respondent, again testifying to all sampled women having a basic capability for mobility.

In both cities, however, poor accessibility indirectly diminished the attainment of other capabilities by (in order of importance):

- a. **increasing the time and energy spent on the journey to work.**
This reduced the time and physical energy available for pursue activities that would enhance their well-being-leisure/health etc.
- b. lack of a convenient way to reach desired destinations
- c. inability to pay for the transportation

In Jalandhar 37% of functionings potentially desired for better well-being, were unattained due to lack of time and in Trichy and 73% of desired functionings were unattained due to temporal constraints. The higher

⁹ Only spatial access is mentioned as all respondents in Trichy had the capability for mobility. There was no case of a'absence of mobility'

figure for Trichy is consistent with the fact that Trichy's women had the longest duration of commutes among the three cities. The average time that a working mother spent on the road in Grenoble was 63 minutes, as opposed to 72.4 minutes in Jalandhar and a significantly higher 94.3 minutes in Trichy. This can be attributed to the difference in the size of the cities and the spread of employment opportunities and the efficiency of transport modes.

Grenoble

In Grenoble, the capability for mobility and accessibility did not directly affect other capabilities taken to be necessary for well-being. The freedom to enjoy more leisure and the capability to nurture close relationships were cited most frequently as potentially desired capabilities. Time was implicated as a barrier for non-attainment of 50% of desired functionings. **However, unlike in Indian cities, the connection between mobility/spatial access and lack of time was weak.** As seen in the next para below on time usage, the women's temporal constraints were due to performing several non-work activities, involving many small trips, and the time spent on these that was far more than in Jalandhar or Trichy. Respondents in Grenoble spent 18% of the day in non-work travel+ non-work activities versus 6% in Jalandhar and 9% of the day in Trichy.

Hence the lack of time stated by the working mothers of Grenoble could not be co-related to longer duration of journeys to work, unlike in the Indian cases.

III. Time usage -The 40-60 split

From birth to death, the individual has to be at some point on the time scale. There are no blanks- s/he is obliged to move from one moment to the next in a continuous pattern. While every point on the time scale has to be passed, every point in space does not have to. Time, therefore, is a crucial role in fitting people and things together for functioning in socio economic systems (Hägerstrand, 1970). Linear time structures women's daily life between employment and home but is also merciless and oppressive in many situations (Friberg,1993). We see in Figure 2 below, **the constraint of time for a working mother is indeed universal and stands in the way of her achieving the functionings she desires to enhance her well-being.**

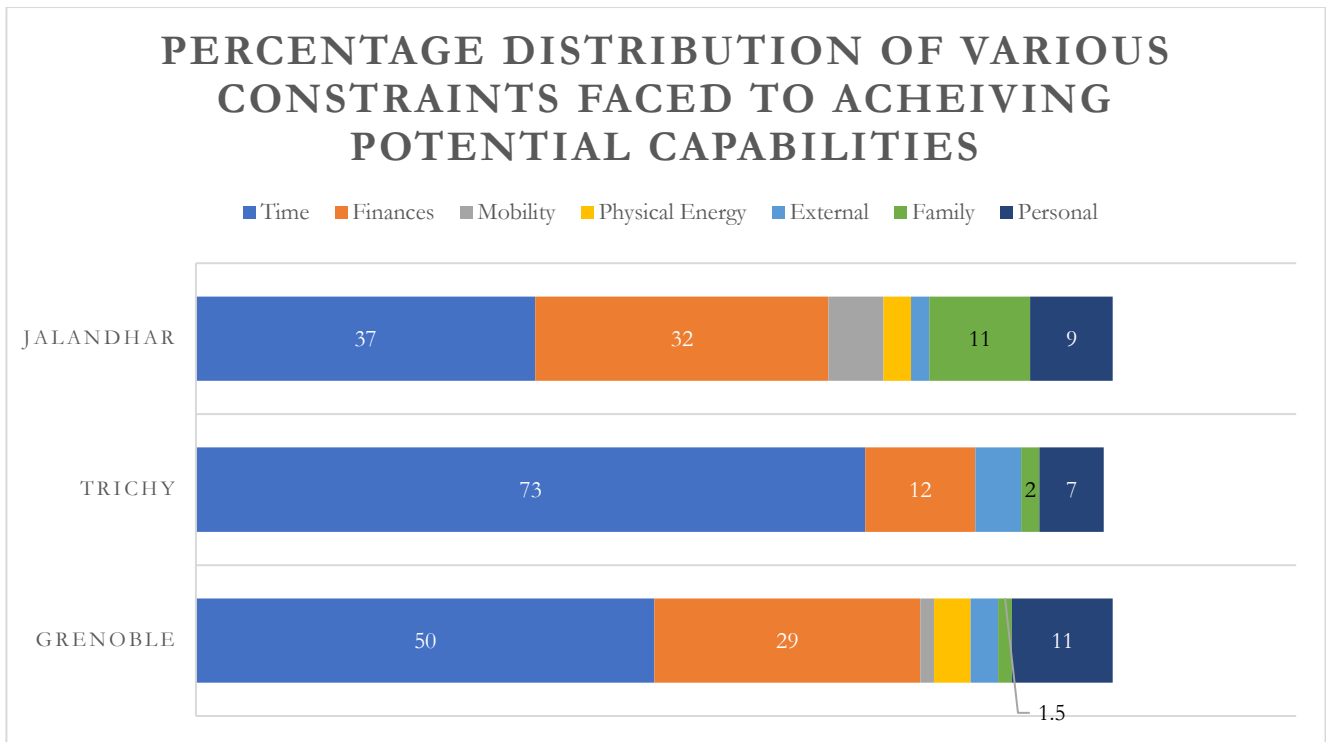


Figure 2: Constraints to achieving desired functionings in all three cities

The intent of both time geography and capability approach stem from a humanistic concern with the "quality-of-life" and every day freedom of action for individuals. Hagerstand wrote that "it is not so much what people actually do as what they are free to do which it is most important to understand" (Hagerstand, 1974) and that there is a need to be "able to trace barriers which prevent certain types of events and states from occurring."

It is remarkable that despite differences in levels of economic development and vastly different socio-cultural conditions between Grenoble and the Indian cities and to some extent between the Indian cities themselves, all working mothers spoke passionately and often regretfully about the temporal tyranny in their lives. Time was implicated as the main barrier in their inability to perform desired functionings. Conversely, those who were able to achieve certain functionings they valued, were those who were less temporally stifled.

Where does all the time go? Table 4 below provides the distribution of how the 24 hours of respondents on a working day was spent for all three cities. In all cases we assume that out of 24 hours 9 hours are spent on what in Time geography Hagerstand terms "capability constraints" (Hagerstand, 1970) i.e. time an individual needs for basic maintenance of herself- sleeping, eating, bathing, getting ready etc. Hence 24-9 =15 hours are left for the urban working mother to dispense her work and household responsibilities.

Also, in all cities, the time taken on the journey to work by the extreme two outliers i.e. the two respondents who travelled a lot more than average because of living outside the city or due to the nature of their jobs, have been taken as 50% of the actual time they travel, so as not to skew the results. This calculation includes those who work from home, (except for the journey to work -column B).

Table 4: WHERE DOES ALL THE TIME GO? (out of 15 hours)						
	Components of Time spent out of the house					
	A	B	C	D	E	F
	Percentage of time spent out of the house (out of 15 hours)	Journey Time in hrs.	Time spent at work	Non-work travel in hours	Time spent on non-work activities outside the house	Percentage of time spent inside the house
Jalandhar	61% (9.17)	8% (0.69)	86% (7.9)	2% (0.9)	4% (0.39)	40% (4.8)
Trichy	64% (9.55)	9% (0.88)	82% (7.8)	5% (0.44)	4% (0.89)	36% (5.45)
Grenoble	61% (9.2)	7% (0.62)	76% (7)	10% (0.89)	8% (0.71)	39% (5.8)

In all cities we find that working mothers spend approximately 60% of their day outside the house and the remaining 40% in the house. However, this 60% includes time spent outside on non-work trips as well as non-work activities. In other words, some of the time spent outside is related to household responsibilities such as waiting at the school gates, time spent in a supermarket, at a clinic or in the park. One-off leisure activities, such as visiting a friend or going to a party, which the respondent may have done the previous day of the interview but is not part of her routine, have been excluded. Hence only routine activities have been considered under ‘non-work activities’.

1. Key observations of time usage

- While non-work travel is distinctly lower in Indian cities, in Grenoble it forms a much larger part of a working mother’s day at 10%. The reasons for this are the school bus system in Indian schools and the intergenerational families in which other family members help to share these non-work trips. Non-work trips are not a pressing problem in any city as Grenoble is a compact, dense development and Indian cities are organically mixed-land use places where each neighbourhood has its own ecosystem of the informal economy like street vendors, weekly bazaars etc.
- The average time spent at work is higher in Jalandhar and Trichy because it includes the ‘overtime’ of an extra hour that low income women do to earn extra wages. Also, practically speaking, lunchtime is not an employee right in private establishments in India, while in France an hour for lunchtime is a right that employees, in both private and public establishments claim. In India, in some private organizations and in certain occupations, a work day could extend for 10 hours with a

minimum lunch break of 15 minutes. For these reasons, time spent at work is above 80% in the Indian sample and 76% in Grenoble.

- Working mothers spend roughly 60% of time outside the home performing mandatory activities which constrain them both spatially and temporally. These activities consist of travelling to work+ being at work+ performing routine non-work activities related to the household, either before or after work.
- The Game of Cards revealed that leisure was the most desired functioning across cities (including opportunity for health and fitness activities) The work-home load has far reaching implications on the amount of disposable time a working mother has and consequently on her capability for leisure.

IV. Some counter-intuitive enablers/inhibitors of well-being

Presented below are some enablers and inhibitors of women's well-being which were conspicuous mainly on account of being counterintuitive to prevalent views on them. The narratives of the respondents showed that some of these institutions which are typically considered oppressive were not while others which are glorified as being liberating were not actively desired. Though some of this could be due to 'adaptive preferences' (see chapter 8.III. (2)), not all aspects can be dismissed as women not knowing better because of social conditioning. The consistency with which these points were repeated across different profiles, and indeed sometimes across cities, makes them worthy of note.

1. Joint families (enabler)

In as much as capability-constraining institutions can prevail in society, capability-enhancing institutions can also exist (Nambiar, 2013). The Indian joint family is one such institution enhancing the capabilities for paid work of the urban working mother. The women, especially in Jalandhar where this family structure is more prevalent, would not have been able to pursue careers if the home and child care responsibilities were not shared by parents/parents in law living with them (see Chapter 5, pg 156). It is because of the dominance of joint families in Jalandhar, fewer people cite 'time' as a constraint in Jalandhar than in other cities. This is also the reason why the number of non-work trips are fewer in Jalandhar and the time spent on non-work activities is only 2% as opposed to 5% in Trichy and 10% in Grenoble, as shown in Table 2.

However, it is noteworthy that it is people in the higher social classes who typically lived in joint families with parents/parents in law. In Jalandhar, 21 out of 25 respondents of social class A were natives of Jalandhar, who had the advantage of having their parents in law in the same city. Those who do not are either because the parents in law are no longer alive or live with their other children

in a different city. On the other hand, the lowest social class of D do not have their kith and kin in Jalandhar. Many are migrants whose families, sometimes even one or more children, are back in the villages of their home state. This leaves them with neither help from within the family nor from hired help, which they naturally cannot afford (they are often themselves the hired help in middle class homes). Similarly in Trichy, migrant working mothers did not have the option of living with their parents/in-laws. Hence, while the joint family is the enabler, it is the higher social classes who are able to live in joint families.

2. The kitchen (enabler)

The relation between care work and well-being is complex and nuanced, as Nussbaum (1995) points out. Many women value care work and derive self-worth and identity from those duties. Traditionally Indians eat a hot, freshly cooked breakfast and the overwhelming practice among office goers is to carry a packed home cooked lunch because it is more hygienic and cheaper than eating out. Also, culturally, Indians attach huge importance to home-cooked food which is associated with ideas of purity and wholesome goodness. Cooking such food and putting hot ‘tasty’ food on the table, meal after meal is almost completely the woman’s job. The kitchen is a feminized space presided over by the women of the house.

Yet, in this study, none of the women in Jalandhar and Trichy saw this as a burden. There was no ennui expressed about cooking meals everyday and it was not seen as drudgery. Although in most cases, there was no choice but to cook, hence we do not know if adaptive preferences have forced them to reconcile with this in a way in which they cannot imagine an alternative situation. This maybe entirely possible, but as literature and cases in this study showed, cooking as an activity is not always be perceived as oppressive by the woman and even in choiceless situations, may offer pleasure and a sense of well-being out of doing something creative or from the feeling of nurturing one’s loved ones.

In studies situated in the white, Anglo, urban middle-class contexts, feminists have portrayed the kitchen as a domestic jail of sorts that keeps women outside the realm of public space, performing unpaid and undervalued work. Accounts of families and food provided by Charles and Kerr (1988) DeVault (1991) and Giard (1998) highlight the denigration of cooking as part of the routine, taken-for-granted work of ‘feeding the family’. However, studies of indigenous communities with strong agrarian traditions, portray the kitchen as a space where women have full control, dominate the extended family and participate in community affairs (Christie, 2006). In Central Mexico, kitchen space is vital to the maintenance of traditional forms of organization and generational transmission

of cultural and embodied knowledge. Women's central role in organizing the grand community meal or fiesta, connects them to vital, gendered social networks and provides them with a meaningful role in community life (Christie, 2006). Korean domiciles remained women's spaces throughout the 20th century even as the physical structure of the Korean home kept changing. Being spatially and/or socially excluded from the inner quarters, men had little control over domestic affairs. For this reason, the kitchen and the inner quarters were not necessarily sites of women's oppression, but were spaces where women had some autonomy and control (Shin, 2012).

Although the kitchen is a space where patriarchal definitions of women were inscribed it is also a place where women have found self-definition, creative expression and pleasure (Johnson, 2006). In the kitchen, women make and subvert gender roles for instance, by making decisions regarding the architecture, colour, decoration of the kitchen and in deciding which household member does what in this space (Bennet, 2011). Hughes (1997) writes that for African-American women, cooking is not synonymous with oppression, routine or drudgery but an expression of love, nurturance, creativity and sharing, which became a route to escape the painful realities of racist oppression. This view was most notably put forward by bell hooks (hooks, 1990).

It is in this sense that the Indian respondents saw the functioning of preparing meals. The fact that the husbands do not help in the kitchen could in large part be that they are not welcome in the kitchen because as the literature quoted above shows, women themselves want the kitchen to be their own feminized space that they share with mothers, mothers in law and daughters. It can be a space of creative freedom, with numerous cookery shows on Indian TV and cooking videos flooding the internet. It is also a space where she prepares food to nurture the family with good health and fulfills her desired roles of "Being a good mother" or "Being a good wife/daughter in law." These have implications for the woman's self-worth and self-esteem, which are instrumental in the enhancement of wellbeing.

Another way to understand Indian women's voluntary desire to cook for the family is by recognizing the more socio-centric nature of Indian society as opposed to the more ego-centric nature of western societies. In the book "Sociology of Well Being: Lessons from India" Steve Derné,(2017) an American sociologist examines wellbeing through the lives of over 200 Indians interviewed between 2007-11. He observes that his respondents were able to pursue self-development and advance individual desires in the context of strong community and family obligations. Derné's study notes that there are many satisfying individual pursuits and therefore many paths to well-being. This echoes Nussbaum's view about the plurality of the human personality which she suggests could offer a way out of the dichotomy between exclusive individual freedom, on the one hand, and traditional women's roles, on the other (Nussbaum,2000).

In sum, romanticizing care work has the danger of perpetuating women in oppressive choice -less

gender roles which are based on the notion that care work is naturally a woman's calling. At the same time, bunching together all domestic activity as something women do because they cannot escape it, is to deny the agency that women have to make choices within the home.

3. Religion (enabler)

The feminist position for decades has been that affiliation to religion is a product of severe social and cultural conditioning by dominant structures perpetuating gender inequalities. This argument assumes that women, especially women in poorer countries, are passive recipients of received wisdom and have no agency of their own to make personal choices. Human rights frameworks developed in the global north often rely on "culture-blaming," laying the blame for women's oppression at the door of the region's religion or culture. Such a notion of "needing to be saved from their culture" is being contested in recent scholarship in various contexts such as of Muslim women's experiences of gender relations in Egypt (Mahmood, 2001) or of arranged marriages among south Asian women (Pande, 2015). This study provided further evidence of how a practice of religion/spiritual traditions added to the well-being of women.

While at a larger scale, religion may be a locus of gender inequalities, within the context of everyday lives, in this study, the capability to practice religion was one the women highly valued and which contributed positively to their well-being. This is compatible with research which has pointed out positive associations among the markers of religiousness, spirituality and cherished outcomes like life satisfaction (Singh et al, 2017; Ellison & Fan, 2008; Salsman et al, 2005), feelings of optimism and self-worth (Krause, 2005; Whittington & Scher, 2010) and hope (Ai et al, 2007).

The role of religiosity as one of the ingredients contributing to overall well-being, is supported by Nussbaum's list of Basic Human Capabilities (Nussbaum, 1995). Under "Senses, Imagination and Thought, Emotions, Play and Practical Reason" she elaborates that the abilities to 'imagine' in connection with 'experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth' are among the dimensions that are fundamentally important to being human. The respondents' experiences and practice of religion and spirituality through prayer, song, chanting or meditation, at home or in the place of worship, involves 'sense, emotions, imagination and thought' and is hence coherent with Nussbaum's vision. These experiences could also relate to what David Kronlid calls 'existential mobility' i.e. the capability of being emotionally, mentally, and intellectually moveable (Kronlid, 2008).

4. Being a mother (enabler and inhibitor)

With almost no exception across the 116 respondents, 'being a mother' was the state of being the women identified with. Studies have shown how dominant ideologies and gendered expectations shape how women perceive and perform good motherhood (Bobel, 2010) (Stone, 2007).

Importantly, dominant discourses elevate intensive, self-sacrificing motherhood (most easily performed by those with economic privilege) as the ideal. Non-conforming mothers may experience guilt and/or may be framed as inferior (Atkinson 2014) (Elliott et al, 2015) (Johnston and Swanson, 2003) (Romagnoli and Wall, 2012). Many mothers may feel joy and pleasure in their mothering, but also pressure to provide ideal health and learning environments even when they don't seem to exist. Hay. S. (1998) termed this the 'guilt gap', in which mothers, when compared to fathers, experience vastly higher levels of guilt – even when both are equally responsible for childcare. It is significant that in this study respondents who had the longest commutes and therefore spent least time at home picked “Being a good cook for the family” and/or the “Doing cooking” as the card showing a potential functioning they desired. While cooking is the “revealed behavior” what they desired is the opportunity to spend time at home, showing affection to the children via preparing tasty food. The temporal inability to do so was tinged with guilt about not doing enough for the family. The capability for mobility intersects with this capability for nurturing the mother-child relationship by contracting available time that the working mother had to spend with her children. In Grenoble, single mothers opted to spend time with their children as much as possible, often compromising on the time they could spend with a potential partner.

Although ‘being a mother’ was considered a high ideal by women everywhere, women whose grown up children did not contribute to finances, dropped out of school, stayed unemployed or remained dependent on the mothers, were seen as a burden, no matter in which city. In each city, there was a case of a working mother who was tired of her grown up sons who contributed nothing to the house nor educated themselves, but only lived off their mother's earnings. In Jalandhar, Yashodha, the factory labourer despaired that her son in his late teens had dropped out of school and was never able to hold a job; in Trichy, Gauri, the waitress was happy that her daughter finished education and had a job while her son was a dropout who did nothing; in Grenoble, Jamilia, also a waitress, said candidly, that she could not wait for her boys, who were in their early twenties, to leave the house as it was difficult for her financially to keep supporting them.

While mothering itself is shaped by dominant gender ideologies and exhibited in daily practices, at the same time, mothering behaviors are also outcomes of the capability for emotion and affinity which Nussbaum lists among the essential capabilities for life. The time spent with children and engaging in activities with them was certainly also a source of pleasure for the respondents. It is for these contradictory feelings that motherhood evoked that it is both an enabler and an inhibitor of well-being.

5. Paid work (enabler and inhibitor)

Women's participation in the house becomes more visible when they also work outside the house, and because their independence increases, their voices become more audible. The evolution of their status modifies the generally accepted ideas about their role of reproducers and caregivers (Gilardone et al, 2002). As all the women in the sample were working mothers, they are already at a level of empowerment higher than most women, especially in India where only 15% of the female population participates in the labour market.

Nevertheless, the study revealed that the work outside the house, itself held little inherent value for a majority of the working mothers. In all cities, most respondents were explicit that they worked only for the income it provided to the family. Only the few in higher positions like lawyers or professors spoke a little about deriving other benefits from it such as self-esteem and independent identity. Some of this detachment from their jobs could be because not all women were able to reap the financial advantages of being employed. Middle class salaried women had control over their finances but women who were 'family workers' i.e. worked in the businesses run by their husbands or were equal partners in the enterprise, did not earn a separate salary. They had access to the account only via their husbands and in that sense were not completely financially independent. Some lower income women said they handed over the entire monthly wages to their husbands who then allocated it as he deemed fit.

Very few women saw their jobs as fulfilling or contributing to well-being. This may be linked to women's overall disadvantageous position in labour markets worldwide. Constrained to take up jobs that are either close by or have acceptable working hours, most women were not pursuing professions that they were interested in or even skilled for. In some cases lack of access to those wages, could also be partially responsible for paid work to occupy less importance in their lives. Across 116 women interviewed in three cities across both countries, less than ten women picked the image of a professional woman depicting "Being successful in the workplace" as a potentially desired functioning.

The job was something to be endured until they could go home to family, especially children. Children were prioritized over jobs everywhere, whether it was by living with parents/in laws for child care support and enduring long commutes (Jalandhar/Trichy) or adjusting work schedules according to school/creche timings (Grenoble). Although Indian working women form a minority of the female population in India, given India's low workforce participation, discussed in Chapter 3, the respondents did not see themselves as being achievers or in a privileged position of being independent earners. Thus, the capability for paid work enhanced well-being only to the extent of providing income to the family of the working mother. At the same time, the inability to nurture

close relationships owing to lack of time, due to the large part of the day being spent at work, caused a diminishing of well-being.

V. Women's Agency in deriving well-being from existing power structures

Women's appreciation of joint families (See Chapter 5, Section C, V.1.i.(a.)), the pleasure derived from the kitchen or spiritual singing in religious gatherings, show that the question of freedom highly depends on the actor's own perceptions and needs to be updated from previous feminist formulations of what constitutes 'agency' and who is a 'free woman'. Taking a critical view of Sen's emphasis on freedom in his book 'Development as Freedom', Gasper and van Stavernen (2003) call for an expansion of the notion of freedom. They write : "*The intense focus on freedom may neglect evaluations of well-being in terms of social relations and personal relationships, which are important sources of women's wellbeing as well as a result of women's joint efforts to enhance others*".

The notion of freedom needs to be embedded in a more nuanced and gender balanced view of thought and emotion which is afforded by Nussbaum's approach. "Emotions" and "Affiliation" are among Nussbaum's ten priority capabilities. A capability for affiliation i.e. forming intimate relationships within the family, for instance, may require a sacrifice of freedom. When capabilities are not seen as individual silos but as interlocking and interdependent circles, it helps us to better locate choices that women make in daily lives. Naila Kabeer, in her study of Bangladeshi women workers of the garment industry, says that to be able to understand the agency exercised by women workers, it is important to not see them either as 'rational fools' or as 'cultural dopes' (Kabeer, 2000). She argues that culture does not influence these women as an external force but is very much part of the desire of the workers. Several scholars have put forth arguments that challenge the established understanding of agency. (Mahmood, 2001; Abu-Lughod, 2002). Open rebellion against power structures is only one form of agency (Ahearn, 2001). Agency is a continuum between conformity and overt resistance. Thus, an act which appears as 'conformity' could also be an expression of agency.

In this study, in the Game of Cards, several Indian women found no contradiction in picking functionings of "Driving a car" or "Being financially independent" which are images indicating 'progress' and 'modernity' and the functioning of "belonging to a traditional joint family." These seemingly contrasting images (Figure 1 a and 1b) juxtaposing tradition and modernity, blended seamlessly in their worldview.



Figure 1a and 1b: Picture cards shown to respondents in India depicting driving a car (a) and being part of a joint family.

A mature understanding of the symbiotic nature of the relationship between the older and middle generations, is allowing these women to approach if not attain, the holy grail of every working woman in the world- i.e. successfully managing child care and a full-time job. An analogy to the duality described here can be found in a paper titled “Saris and contemporary Indian womanhood” (Mount, 2017) which explains how middle class urban Indian women balance tradition and modernity through the practice of wearing the sari; drawing on its contemporary status as a “modern and chic” garment as well as its symbol of traditional Indian womanhood. Successfully navigating the expectations placed on them by seemingly opposing identities is also a form of agency. It enables middle class Indian women to ensure favourable outcomes for themselves and their families thus enhancing their well-being.

SECTION B : Implications for Policy

I. Indian Cities

Against the background of the discussion above, policy interventions aimed at the following three objectives could help enhance women’s capabilities and overall well-being, for Indian cities.

1. Reducing commuting time
2. Facilities at the workplace
3. Enabling more disposable time at home

1. Reducing commuting time

Improvements in urban infrastructure that support mobility are recommended. While these measures can improve mobility for all commuters, given the stringent time constraints that working mothers operate under, they could help to cut down the 7-8% of time spent on commuting. Additionally, the journey itself

can become physically less stressful and help in conserving energy, which is currently needlessly expended in poor transit circumstances.

Strengthening the walking infrastructure should be prioritized over car-oriented planning policies involving building of more highways and increasing the number of parking lots. Local streets are either taken over by street vendors or are too narrow and pot-holed but remain neglected. These skewed priorities affect women more than men because half of urban India's working female population walks to work and only 5% commutes by car. .

Failure to recognize IPTs (autos and rickshaws) as a formal mode of transport impinge on the availability of IPT for the public, especially for women who use them in higher numbers.. Despite their undeniable utility, auto and rickshaw drivers face criticism and punitive policies with respect to granting of permits and setting of fares. (Harding et al, 2016). IPT modes need to be integrated into urban transport policy and treated as a valid, recognized mode of urban transport rather than an annoyance on city roads. One way for bringing autos into the mainstream is to mandate seatbelts for all passengers, most of whom are women.

2. Facilities in the workplace

i. Institutionalized childcare facilities

Apart from the traditional values in Indian society which favour involvement of the extended family in the child's upbringing, another reason for high dependence of Indian working mothers on grandparents, is that the government has done little in the realm of childcare services. It is assumed that family structures are in place and that women/mothers are present, ready and able to take care of children (Neetha N, 2009). However, as we saw in the case study on Jalandhar, it is only locals who are able to live with extended family. For low income working mothers with young children, particularly migrants, such family support does not exist. Subsidized quality child care provided by the state would be immensely beneficial for these working mothers. Further, India's female labor force participation in the urban context is declining, as has been discussed earlier in Chapter 3, Section A. Wider availability of dependable child care services is likely to enable more mothers to work as not all of them can rely on informal arrangements.

In this aspect, best practices could perhaps be borrowed from the French system. Qualitative assessments among countries of the European Union show that France does better than most countries in providing child care (Plantenga, J. and Europäische Kommission, 2009) although it continues to tackle questions of affordability, unequal geographical distribution and variable quality of creche services.

France has a long tradition of government intervention in the field of childcare since the French state sees itself as a family-friendly welfare state. Demand for a place in a creche invariably outstrips supply, because

of which the state has intervened with multiple options to increase capacity in these institutions. For children below 3 years of age, institutional support exists in the form of collective creches and registered “assistante maternelles” or childminders who look after children in their own homes or in the child’s home. There are possibilities for part-time and occasional care (halte-garderie), parental initiatives (crèches created and managed with the input of parents) as well as "familial crèche" (a few childminders managing children under the guidance of professionals) and "micro-crèches" (creches which can accommodate a maximum of ten children and have more flexibility in their operations.) For children from 3 to 6, there exists a universal pre-school childcare system of "écoles maternelles" which is free of charge and has nearly 100% coverage. Children can start attending them even at the age of two. Apart from this, the state provides allowances for single mothers and families with more than one child. Paternity leave and parental leave are considered as a basic right for families, together with tax schemes (quotient familial) for expenditure on children (Fraisie et al, 2013). Strong institutionalized support ensures that the French mother has several options to provide a safe environment for her children while she is at work.

ii. Health and fitness for women

As was evident in this study, for many women there is no time slot to devote to exercise given the demands at home, post working hours. Since about 80% of the time outside the home, is spent at the workplace, public and private employers need to enable physical activity of women in the workplace, for example, through the provision of yoga classes or gyms, which can be used whenever the employee can take some time out. Such practices exist in some international companies, (especially modern digital companies such as Google) and are widely used. This is an important responsibility, given the high threat of developing abdominal adiposity, diabetes and cardiovascular diseases for Asians (Eapen et al, 2009) because of being more sedentary and less physically active, apart from dietary habits and genetic predisposition. On the other hand data from India show that less than 10% of the population performs any kind of leisure-time physical activity (Anjana, 2014). Physical exercise as a form of leisure can be an end in itself as well as a means to contribute to the healthy living of women.

3. Improving urban services in low- income areas

Women in slums are doubly disadvantaged from poor access to basic services and having to procure these services themselves, mostly without help. The possibility of rest and recreation as well as childcare in these environments becomes all the more remote. Greater public sector investment in services such as water and sanitation would undoubtedly reduce women’s reproductive labor burdens.

The reason why certain areas of Indian cities have poor urban services is often because they are ‘unauthorized colonies’, the migrant settlements of the Leather Complex in Jalandhar, being one example. (See Chapter 4, Section C.II.(3)) Once these colonies are deemed ‘unauthorized’ by the local

government, no funds are spent for their improvement, leaving them to fester in civic neglect. The time poor women spend combatting lack of water and sanitation will be reduced and also leave them with more energy to pursue activities that they value.

II. Grenoble

1. Tackling socio-spatial segregation

Land use policies of the local administration need to favour a more uniform spatial distribution of modern industries such as IT, clean energy and biotech. This would reduce the occupational segregation in science and technology jobs allowing for more class and gender diversity. When more opportunities open up for people in all parts of the agglomeration, socio-spatial segregation would be less stark than it is now, benefitting not just women but all those who are marginalized.

Public transport can be an effective leveler of social differences. The “regular middle class male” typically drives to work in his private car and does not see public transport as an attractive option. Discouraging the private car usage through costlier parking fee and other levies, will not only help the environment but will bring diversity to public transport. Traversing these parts of the city deemed ‘bad’ or ‘dangerous’ can repair perceptions and improve social cohesion.

2. Reconciling work and school timings

The temporal rigidity of paid employment for salaried mothers working in conventional 9 to 5 jobs shows that the demands of the modern workplace- (or ‘authority constraints’, in time geography terms)- are disconnected from the lives of working women and their compulsions on the domestic front. Working parents, especially, mothers need to be supported by flexibility in the workplace and opportunities to organizing working hours around family responsibilities, such as arriving to work late or leaving work early or working from home in order to reconcile work and parenthood.

The temporal disentanglement between work and school timings would create a time lag between the child’s exit and the woman’s own exit from the house for work. This was apparent in case of several Indian respondents who used the in-between hours in the morning (usually between 7.00 a.m. and 8.00 a.m.) to take a walk or do meditation (capability for health and fitness) thus providing a relaxed interlude in the stressful morning hours.

Easing women’s temporal constraints also has a direct impact on sustainable transport. Most French women, especially those in the reproductive phase of their lives with several commitments towards home and work, use private cars because public transport cannot serve their need to be in particular places at particular times. A less temporally strict regimen would permit them to use other modes of transport, which as many respondents said, they would have, if they had a choice.

3. Integrating the older generation

Given the high proportion of ageing populations in the west, getting ageing populations to “age well” is a challenge for many European countries. Loneliness, especially of old people, is a growing social challenge, so much so that the UK appointed a Minister for Loneliness in 2018. Staying relevant and engaged is scientifically proven as important to ageing well.

Jappens and Van Bavel (2012), in a study based on the analysis of the European Social Survey (ESS2) from 2004–2010, concluded that co-residence with adult children (more common in southern, eastern and central Europe and Ireland) can influence support in everyday housework and care provision to and by older respondents. The biggest beneficiaries of such an arrangement would be working mothers, as several instances of intergenerational families in the Indian context discussed in this study have shown. Evidence from other Asian countries too supports this inference. Lee and McDonald (2003) found that in South Korea, a modern capitalist country) the presence of seniors at home reduced a young mother’s responsibilities. Feng et al (2013) study conducted in China’s Nanjing city, concluded that young parents who co-resided with seniors had more time and energy to commute long distances for better employment opportunities and could also work longer hours for better payments, as their household responsibilities were lessened.

III. Overall

1. At international level the UN Millennium goals stress the importance of all governments taking into account gender considerations in all developmental and infrastructural projects (UN 2007). Within the European Union, member states, are expected to integrate gender considerations into all public policy-making activities including urban spatial planning . At the ground level, however, decision making is done by people drawn from male dominated domains such as real estate or transport sector. Technical officers in the fields of civil engineering, or construction who generally possess limited social or gender awareness, also exercise a fair amount of say in policies about the built environment. If this is to change for future generations, the lived experience and the voices of women must be incorporated in building our cities. More women need to actively participate in decision-making bodies in all countries.
2. The importance of nurturing and caring for personal and family well-being cannot be understated. However, vital as unpaid work is, according to the logic of traditional division of labor, it is considered a woman’s ‘natural’ calling in all societies, in varying degrees. As Gilardone et al (2002) rightly point out, the “division of labour” is strongly rooted in traditions and often becomes an “accumulation of labour” for women. One way of valuing this work is to give it formal recognition. The Stiglitz-Sen-Fitoussi report commissioned by President Sarkozy, which was tabled in 2009, says about quality of life

measurements: *“Most of the existing indicators used to inform about Quality of Life (QoL) neglect issues related to unpaid domestic work, such as shopping, family chores, and care of children and other dependent members of the household. This is an important omission.... Unpaid domestic work is especially important for the QoL of families with young children.”* The policy implications of women’s unpaid labor starts from the recognition of this work as worthy of measurement in QoL indicators. Such data, in turn, would allow computing measures of gender inequalities in the distribution of these unpaid domestic activities. Over time, it can facilitate comparisons across countries, and shed light on many other inequalities in capabilities between men and women such as, for example, capability for paid work and leisure.

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CHAPTER 8 : Conclusions, Validity of Methodology and Limitations of Study

This final chapter presents overall conclusions, explains the validity of the methodology used and lists the limitations of the Game of Cards method as well as the overall study. In the end, a few pointers for future research are given

I. Conclusion

The study focused on urban working women aged between 25 and 50 years, holding a full-time job and having at least one dependent i.e. minor child at home. Three urban settings were studied, a small city in a western European developed country and two small cities of a developing country. This methodological decision helped us understand the gender factor within an age range that has certain similar features because this population must combine work and personal activities in their daily lives. Theoretically, Amartya Sen's Capability Approach was used to view mobility as a capability and within that, isolate the capability for spatial accessibility. Our aim was to explore how gender shaped the capability for mobility and accessibility in different territorial settings, and whether the possession of these capabilities was important for overall well-being of the women.

In each city, we have seen through Research Question #4 that the capability for mobility is a basic necessity for the capability of accessibility and this in turn is instrumental to the attainment of other capabilities relating to a woman's professional, personal and social lives. Deprivation of the capability for mobility and/or capability for accessibility results in women doing fewer desired activities or attaining desired states of being. As these are 'doings' and 'beings' which the women value, their attainment enhances well-being and their non-attainment diminishes it. Thus, at the end of the study, the hypothesis stated in Chapter 2 "Capability for Mobility affects overall wellbeing of urban women" is proven to be true.

What causes deprivation of mobility? The reason for the deprivation of mobility in some cases was poverty and spatial entrapment in isolated industrial areas in the city's periphery. Stranded mobility is a concept developed in South Africa to refer to the situation of constrained mobility and poor accessibility experienced by the black townships (Greico and Hine, 2008). This idea is analogous to the Jalandhar's poor migrant factory workers in the Leather Complex area, who in this study have been called 'Mobility Have Nots'. A few women were rendered immobile because of traditions in conservative households which frown upon, (but not forbid) women travelling alone to different places in the city.

However, several women had a high capability for mobility covering several miles and travelling for hours, but yet their accessibility remained poor. Accessibility is a far more pertinent ideal to pursue by policymakers as poor accessibility with a lot of mobility, detracts from time taken to reach mandatory destinations in the daily life of a working mother. Poor accessibility also detracts from the physical energies of a working mother and contributes to stress. This in turn affects the attainment of desired functionings.

Having isolated factors that shape mobility and accessibility, the study presented the impact of being mobility and/or accessibility deprived. Through the data on daily mobility habits, it is clear that working mothers across all three cities spend about 60% of their time outside the home and 40% in the home. The 60% of time spent outside the house is in mandatory, non-negotiable, unavoidable engagements- at the workplace, travelling to the workplace and in outside trips related to home and family.

However, they are also temporally occupied during the 40% of the day they spend at home, in all three cities. The instances where working mothers have “me time” where they indulge themselves for their own well-being or simply have an interval of time when they do nothing are almost nil. It is the total number of tasks that the average urban working mother performs in a day that makes time her biggest constraint, more than it does for men. It is this difference which makes it worthwhile to examine policy interventions that can help ease a working mother’s temporal stringency, for her to be able to have the freedom to pursue activities that improve her well-being.

1. Original contributions of this study

1. The **microscopic view of women’s daily activities, as is done here, helps to understand time distribution between home and outside.** One could capture the praxis of women’s life forms- who they are in their daily life, how they organize their limited time, what resources they are able to command and what spaces they inhabit at different intervals of time. By focusing on a working mother’s time outside the house and the activities she undertakes once she returns to the house, the instruments used in this study described in Chapter 2- Schema Displacement and the Game of Cards- provide a 360 degree view of her quotidian world. This builds on all the literature cited earlier in this chapter (Section B II and III) on women’s mobility patterns as well as the literature on the unequal division of labour in the household.
2. The deployment of **the visual technique i.e. the Game of Cards** that can be used cross-culturally to operationalize the capability approach offers a new tool to the research community interested in using the capability approach for primary data collection. This can embellish the understanding obtained from

large scale surveys and secondary sources such as the census of 2011 in India and the EMD in France. For example, the census in India, providing sex-disaggregated mobility data for the first time, showed that working women make shorter trips and travel on foot and in public transport more than working men do. But the lived experiences of the sample of the working women in Jalandhar and Trichy tells us what kind of women walk to work and what are the compulsions which make them adopt this mode; how does commuting for three hours a day affect other aspects of the woman's life; what inadequacies in the urban infrastructure and planning make people change their transport modes several times to reach their workplace; what are the daily experiences of public bus users. Similarly, for France, while quantitative surveys show us that women prefer cars, a closer look illuminates this data by illustrative cases of the reasons behind women's use of the car and their overall life constraints.

3. Numerous examples described in the chapters of this thesis provide **evidence of women's agency and enhance our understanding of the female experience**. They show that women are not entirely passive recipients of dominant practices and ideas. In all cities, women used available resources and tried to maximize their well-being to the extent possible by following various strategies and fighting against constraints imposed by the city every day.
4. By putting the spotlight on **urban working mothers**, this work hopes to have provided a window into the lives of a **less studied cohort** which seemingly has the best of both worlds but in reality, is often struggling to cope with the double burden of home and work.
5. Viewing their life **through the lens of the capability approach** enables us to go beyond just their mobility problems to understanding what else in the broad arena of overall well-being is affected by these mobility/accessibility constraints. This thus enables one to see that a problem with having no direct buses, to take an example, is not just a mobility issue. It is a well-being issue because not having the direct bus means much more time is spent in interchanges; stress is experienced, physical energies are expended, cost is incurred in trying alternate ways and at the end of it all there is a family at home which needs meals prepared and homework done. Finally, there is less time for what the woman actually values- leisure, nurturing relationships and health. Viewed in this way, it is no longer a transport or mobility problem but something that has an imperceptible, ripple effect on the quality of life of the woman. **This change in perspective of women's mobility by using the lens of the capability approach is perhaps this study's most valuable contribution to the existing literature.**

II. Validity and Reliability of the methodology of Game of Cards

In quantitative research, validity measured by whether the means of measurement are accurate and whether they are actually measuring what they are intended to measure (Golafshahni, 2003). Though some qualitative researchers believe that these terms as defined in quantitative analysis, may not apply to the qualitative research paradigm (Glesne & Peshkin, 1992), Patton (2001) states that validity and reliability are two factors which any qualitative researcher should be concerned about while designing a study, analyzing results and judging the quality of the study. The GOC can be used in qualitative research in a micro study but also as a quantitative technique in a large scale study (See Appendix 1). Therefore, its validity and reliability are both important to establish.

1. Validity

Functionings comprise both “Beings” and “Doings” and there is no requirement specified that in an empirical study data on both should be collected. Therefore, it may seem redundant that in the GOC we have two levels of questioning – first where the respondent picks cards for “Doings” and second where she picks cards of “Beings”. After all, if a respondent says she travels by car or public transport on her own, we know she has the functioning of mobility. Why then should we subject the respondent to another round of questioning about her “Beings”?

The reason for this is that the ‘double questioning’ where the respondent is asked first to pick cards about her “doings” followed by the next question where she has to pick her “beings” ensures internal validity of the data. Consider the following situation:

Interviewer shows all the picture cards representing “Doings”

Question 1: Could you please pick up the cards which show the activities you perform regularly?

Respondent: Among other cards, picks the card of travelling by bus.

Interviewer notes the codes of the cards she has picked up and asks the next question.

Question 2: Now, we move to a different question. These cards show pictures of being different types of women in daily life situations- being a household manager, being a financially independent woman, being a good mother, being independently mobile....Please choose all the images that correspond to who you are.

Respondent: Among other cards, picks the card representing “Being independently mobile.”

Thus, the respondent has picked up a “Doings” card showing mobility and also a “Beings” card showing mobility. This repetition confirms that the selection of the first card was not random or an error. If the respondent does not pick the mobility card in “Beings”, the interviewer may ask why she has not when she has picked the image of “travelling by bus” in the previous question. This can have two outcomes- either the respondent has missed picking up the card showing mobility the second time and quickly corrects it or realizes that the first card was a mistake and retracts it.

Either way, there has been a check that the selection of cards was not random or erroneous but conveys the conscious choice of the respondent. The process of asking respondents to pick among both sets of cards bolsters the credibility of the data. The ‘double checking’ acts as a built-in system of internal validation.

2. Reliability

Reliability is measured in quantitative studies by whether the result is replicable (Golafshahani,2003). Lincoln and Guba (1985, p. 300) use “dependability”, in qualitative research which closely corresponds to the notion of “reliability” in quantitative research.

The GOC has been applied successfully in three cities in this study thus proving its replicability. It is significant that the method worked in a cross-cultural context - across France and India. Within India too, the two cities in the north and south have significant differences in socio-cultural practices. Further, replicability was also proved by the technique’s adaptability to different economic situations, which can be widely contrasting in India.

This proves that the GOC is adaptable to different contexts once the researcher modifies the images to represent the people who form the sample, as explained in Annexure 2. Finally, the ability of the technique to handle variability and yet remain effective demonstrates its robustness.

3. Effectiveness of the GOC as a measure for CA

In the article “Measuring Capabilities” Comim (2008) says that the main purpose of the Capability Approach is to enlarge the informational space in normative assessments so as to enable better decisions on questions of quality of life. The GOC leads to a plurality of spaces for the assessment of well-being by including a range of functioning vectors whose attainment can be measured.

The GOC also helps understand the relative value of different functionings. Through the GOC the importance of some functionings over others is clear in the exercise of asking people to pick the functionings *they would like to attain over others*. Images which are chosen as the desired functionings are by implication superior to those that have not been chosen. However, if a respondent chooses more than one functioning, the ranking amongst the chosen ones is not done (though it is entirely possible to include). By asking the respondent what constraints she faces in performing the functionings she desires and how those constraints can be removed, the GOC inherently acknowledges the agency aspect of the individual. It conveys to the individual that she is not a passive entity but has the possibility to change the circumstances impeding her from achieving the outcomes she values.

Nussbaum and Sen (1988) have laid great emphasis on non-commensurability, saying that the integrity of each value should be preserved. In other words, capabilities must not be traded off for each other. Each must be treated as distinctly important in itself. In the GOC, each functioning and by extension each capability is seen as equally important which is why no weights are assigned to one over the other. Operationally, cards showing one functioning are not prioritized over the other- all the cards are spread out so that the respondent does not think some cards are more important than others.

Lastly, by administering cards individually and engaging with the particular context of each person, the GOC respects the importance to the individual that is one of the core features of the Capability Approach.

III. Limitations of the Game of Cards

1. The inevitability of the counterfactual in CA

Perhaps the most important characteristic influencing the difficulty in measuring capabilities (through the use of empirical measures) is their counterfactual nature (Comim, 2008). Sen (1982 [1980]p. 359) describes the notion of counterfactual, explaining that ‘it contrasts what is observed with what allegedly would be observable if something else were different’. Ultimately, capabilities are an expression of the degree of opportunities and choices open to individuals in shaping their own actions and destiny. But the extent of those choices is an unknown quantity because we do not know all the possibilities that exist for the individual and the socio-political-economic conversion factors that will play a role in the fulfillment of these choices. Neither does the individual herself, even if, as happened in this study, she is asked a direct question about her desired functionings.

The validity of the question addressing potential functionings, where the respondent was asked to pick cards of functionings which they would like to attain but are unable to, is limited by the counterfactual nature of the responses. The respondent can only answer “what could be” a dimension which is unobservable and hard to prove. The following question of “*Why are you, at present, unable to achieve (this functioning)?*” requires the respondent to identify the constraint preventing the achievement of the potential functioning. The last question in the set asks, “*Do you think this situation will change and how?*” The respondent makes a self-assessment of whether the constraint that she has just identified will melt away or remain firm. This again is in the realm of the hypothetical which is the problem with counterfactual nature of evaluating an individual’s capability set. We can never know the full range of capabilities that exist in her capability set and what conversion factors are required for those capabilities to be realized. As Cohen says in his critique of the capability approach, “Our evidence never reaches the full range of alternatives lying within reach, but extends to actual functioning and a limited range of counterfactual variations” (Cohen, 1993a, p. 9).

Krishnakumar (2004, p.7) has argued that ‘capabilities by definition cannot be directly measured’ and that only their respective functionings can. This would imply that ‘possibilities’ cannot be measured. The difficulty is compounded by the fact that some people may possess a particular capability but may not be performing the related functioning. One needs to be able to assess whether the observed “lack” is out of choice or not. (Burchardt, 2002). To give a simple example, a woman may possess a driving license and hence the capability for independent mobility but she may never use her car. It could be because the traffic on the road is too daunting and she does not feel confident about driving on the city’s roads. But this is not something the woman may have realized herself and has probably reasoned it out as making an environmentally sound choice. Hence we will never know whether “that which cannot be observed” is valid and measurable.

2. The problem of Adaptive Preferences

Such self-assessment leads us to the other problem with the application of CA on the field-that of adaptive preferences (Sen 1985a). Both Sen and Nussbaum (2000, 2001) have argued that people might adapt to certain unfavorable circumstances and any self-evaluation in terms of satisfaction or happiness will in this case necessarily be distorted. Sen disregards self-evaluations on the grounds that they reflect life-long habituation of cultural and traditional norms and rules.

As an individual cannot know her future preferences or interests the choices she makes are already based on their past preferences. (Sen, 1992). Consequently, the preferences of the poor are likely to be more limited in ambition than the preferences of the rich (Sen, 1984). Since choices and preferences are shaped by circumstances, existing social hierarchies or prevailing power equations, those in disadvantaged circumstances are likely to adapt their preferences to what could be possible (Qizilbash, 1998). Commenting on the way choice is gendered Robeyns notes, 'We do not know what men and women would choose if they were liberated from their gender roles and thus genuinely free to choose' (Robeyns, 2003).

This was in evidence in certain cases in this study. Rejecting all the images showing leisure activities like shopping or eating at restaurants, a poor migrant factory labourer in Jalandhar responded, "What is the point of choosing something that I know I can never have?" Even if the respondent was not poor, the choice of what functionings she desires is limited by her "adaptive preferences" i.e. the perimeters of her cultural conditioning. Both these problems have been encountered and recorded in several studies which attempted to apply the CA in a real-life situation (Burchardt, 2009; Krishnakumar, 2007; Comim, 2008; Chiapperio-Martenitti, 2000).

The limitations of the counterfactual and adaptive preferences are however inherent to the CA and not particular to the GOC methodology

IV. Limitations of SEC classification

- **Underestimation-** A majority of families in Jalandhar are joint families- with parents in-law living in the same house while in Trichy several women respondents lived in their parents' home as their husbands were working in other towns. This could underestimate the socio-economic class as the parent(s) in law/parent(s) may have a pension/earnings. If the house belongs to the older generation parent, it may be in a better locality than what the respondent would have lived in if she was living separately with her husband. Hence in Indian families, actual costs maybe subsidized and lifestyles may be better than what one would expect with an assigned socio-economic classification.
- **Over Estimation-** In few cases of intergenerational families in India, there are non-earning members living in the same house such as a sister or brother in law who are still students. This could result in

more economic burden than is evident and hence standards of living may be depreciated than what one would associate with a particular SEC.

V. Limitations of the Study-Overall

1. The study does not claim to be representative of all urban working mothers in France and India, much less of all urban women. Nevertheless it provides a window to examine the lives of working mothers of different socio-economic groups in mid-sized cities in each country to understand what limits and what enables their accessibility.
2. The methodology of the cards used to elicit capabilities has no known precedent so there were no ready learnings to avoid pitfalls. The limitations of the method were explained in section III earlier in the chapter.
3. The limitations of qualitative research that the words chosen to describe the phenomena being observed are never truly “objective” but only an interpretation of what the researcher experiences, holds true.
4. Being a foreigner in France and not a resident of either of the two towns studied in India meant relying on personal networks and snowball sampling to find urban working mothers with dependent children. To that extent, the sample is not as geographically dispersed as would have perhaps been possible in more ideal circumstances.
5. Martha Nussbaum’s book “Women and Human Development” is based completely on her extensive meetings with Indian women. Defending her positionality as an “outsider” by virtue of being an American and a middle-class person, she says that being a foreigner can sometimes help to maintain neutrality and through curiosity, determination and a willingness to listen to what people are saying, the difficulties of being an “outsider” can be overcome. The research and analysis in this study, for Grenoble, is restricted but hopefully, also benefitted, by my status as a foreigner. The outsider status is also true in cases where the respondents belong to the lower economic strata in the Indian cities because middle class scholars from universities have no firsthand experience of their constraints.

VI. Future research possibilities

The lack of gendered statistics is a major inhibitor in gaining an understanding of travel practices differentiated by gender and therefore on the introduction of solutions. Far more research is needed, particularly in developing countries where there is very little gender specific travel data. Research needs include the need for deeper understanding of women’s mobility as it relates to the specific roles played by women in society and within households and their use of time.

The examination of gender differences from the perspective of the dispersion of workplaces should be analyzed using a finer spatial scale than merely as central city vs. the suburbs. What factors influence women

to choose workplaces and residences is barely understood. More research on this could help policymakers view commuting from a different perspective of female workers than the traditional male wage earner view. The mobility data of the Indian census that has only begun to be collected since the last census of 2011, is a minefield of information that can be processed to understand how genders commute in varied contexts. Different dimensions can be studied-scale of districts, economic prosperity, social attitudes, level of public transportation, plains and hills etc. The “no travel” component of trip length needs in-depth study to understand the motivations behind working from home for both women and men.

If the target of public policy is to promote sustainable mobility through walking, cycling and public transport –then women's mobility should continue to be specifically assessed, recognizing that women have accumulated the knowledge needed to develop a model of sustainable mobility patterns for the future.

Last but not least, the focus needs to turn to accessibility for women rather than conventional measures of mobility such as how many miles they have covered and how long they traveled. Only then can policy focus in developing countries which spend millions on speedier forms of mobility, recognize the real barriers in women’s use of the city. Addressing these will also mean a more inclusive city not just accommodating women’s needs but also those of various marginalized groups.

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RÉSUMÉ DE LA THESE

Contexte et introduction

Dans son ouvrage classique de 1929 intitulé "La ville de demain et son urbanisme", Le Corbusier présente des grands projets pour la ville de l'avenir et expose les modalités selon lesquelles le travail et les loisirs devraient être organisés pour une ville moderne et fonctionnelle. Vers la fin du livre, il écrit: «... et toutes ces considérations concernent l'homme et la taille de l'homme varie, disons entre 5 pieds 6 pouces et 6 pieds 2 pouces. Et quand l'homme se retrouve seul dans de vastes espaces vides, il se décourage. »(Corbusier, [1929], 1987). Dans le plan de Corbusier du gratte-ciel de soixante étages où toute activité commerciale serait intégrée au centre-ville et à la cité-jardin où les travailleurs acharnés reviendraient se reposer, tout a été construit sans équivoque pour l'homme, même en tenant compte de ses caractéristiques physiques, des proportions. La ville n'était pas envisagée comme un lieu où la femme s'aventurerait.

Corbusier n'était ni seul ni le pionnier de cette vision d'exclusion. Dans les textes d'Aristote, les politiciens étaient membres de la «polis», ceux qui avaient des droits, les membres de la ville. Les exclus étaient les étrangers, les esclaves et ceux qui n'avaient pas le droit de participer à la vie politique alors qu'ils vivaient dans la ville, c'est-à-dire les femmes et les enfants.

L'idéal historique de sphères distinctes a eu et continue d'avoir des effets extrêmement puissants. Par exemple, au 19ème siècle et au-delà, il légitimait l'exclusion des femmes du régime politique; elle a sanctionné socialement le traitement des femmes en tant que propriété des hommes (Davidoff et Hall, 1987; Pateman, 1989). À l'époque contemporaine, son influence continue de se faire sentir dans la persistance d'inégalités de pouvoir économique et politique. Des associations importantes subsistent entre la masculinité, l'espace public et la ville, d'une part, et entre la féminité, l'espace privé et la banlieue, de l'autre. (Bondi et Rose, 2003). La ville est donc sexiste et ses manifestations extérieures telles que la conception urbaine, la structure urbaine, les infrastructures de transport et même les services urbains tels que les toilettes et les lampadaires sont mal conçus pour répondre aux besoins des femmes. Elles témoignent des hypothèses profondément ancrées sur le rôle des femmes dans la société, à savoir que les femmes seront principalement confinées à « l'espace privé » et que « l'espace public » est réservé aux membres masculins de la société.

En tant que planificateurs, architectes, géomètres, ingénieurs et directeurs de ville sont des professions à prédominance masculine, peu de femmes ont voix au chapitre en matière de construction de la ville. Bien que « la planification s'adresse aux personnes », les femmes souffrent d'un désavantage dans un environnement construit développé par les hommes, principalement pour les autres hommes. Linda McDowell (1993) le dit bien : "Les gangs, les foules urbaines, les flâneurs, les militants politiques, même les figures décourageantes des navetteurs urbains n'ont jamais été encombrés par un bébé, une poussette et les courses de la semaine".

Dans ce contexte, les géographes féministes ont identifié certaines particularités des modèles de mouvement des femmes et ont imposé la reconnaissance de la femme en tant qu'actrice du paysage urbain. Ces particularités sont le produit de la double vie des femmes qui englobe leur monde professionnel et personnel et de leur peur du harcèlement sexuel qui les contraint spatialement et temporellement.

Femmes urbaines

Le monde s'urbanise rapidement. Selon les chiffres de l'UNFP, 5 milliards de personnes dans le monde vivront dans des villes d'ici 2030. Chaque mois, 5 millions de personnes s'ajouteront aux villes des pays en développement et on estime que d'ici 2030, 1,5 milliard de filles feront partie des zones urbaines. La migration pour de meilleures perspectives est l'une des principales raisons de l'urbanisation et les femmes constituent une proportion importante de ces migrants qui viennent dans la ville à la recherche de meilleurs emplois et de meilleures installations pour eux-mêmes et leurs enfants. Ainsi, le nombre de femmes dans les villes ne fera qu'augmenter et si la ville doit être accueillante pour les femmes, elle doit changer sa structure. Les femmes migrantes continuent à s'occuper de la famille et, par extension, de la communauté. Les femmes qui peuvent mener une vie sûre et productive dans les villes où elles vivent peuvent à leur tour nourrir des familles épanouies et productives.

Plus de femmes qui travaillent

La féminisation a probablement été le changement le plus important intervenu sur le marché du travail des pays développés à partir de la seconde moitié du 20^e siècle. La montée des familles monoparentales dirigées par une femme contribue à rendre nécessaire le fait que les femmes soient des « soutiens de famille ». Entre les années 1960 et 2010, l'emploi salarié chez les femmes âgées de 25 à 59 ans est passé de 50% à 78% en France.

Des tendances similaires doivent être signalées dans d'autres économies occidentales. Cependant, il existe toujours un fort écart de salaire entre hommes et femmes, en partie à cause des conditions spatiales qui influent sur l'accès à l'emploi. La présence d'un plus grand nombre de femmes dans la population active en milieu urbain et leur moindre mobilité par rapport aux hommes appellent à repenser les facteurs qui déterminent la mobilité des femmes et les contraintes d'accès spatial auxquelles elles sont confrontées.

La parité entre les sexes est l'un des objectifs du Millénaire pour le développement adoptés par l'ONU lors de son sommet de 2000. Le discours sur le droit des femmes à la ville n'a pas plus de deux décennies et n'est pas adéquat. En outre, bien que dans le monde universitaire, la pertinence de la perspective de genre dans

la planification urbaine ait été dûment exprimée, dans la pratique, l'intégration de la dimension de genre dans la planification urbaine reste sous-développée. Il y a beaucoup à faire pour que davantage d'aspects soient étudiés et il est nécessaire d'examiner les problèmes en cause de manière approfondie, afin que les planificateurs puissent mieux préciser la manière d'intégrer la perspective féminine dans les décisions politiques. C'est dans ce contexte que cette étude vise à apporter une contribution.

Objectif de la thèse

L'objectif de cette thèse est de comprendre la capabilité de mobilité et l'accessibilité spatiale des femmes urbaines et son impact sur leur bien-être général.

Il s'agit d'une étude transnationale menée dans trois villes en Inde et en France. Les études détaillées sur la mobilité des femmes et l'utilisation des moyens de transport par les femmes ont été principalement menées sur le monde occidental urbain et ont porté sur des problèmes tels que la réduction de l'utilisation de la voiture privée. Peu de projets de recherche menés dans les pays en développement ont suffisamment pris en compte l'intersection genre, transport et mobilité (Peters 2001). Les quelques réalisations se situent dans le contexte rural et la majorité d'entre elles concernent les femmes africaines, tandis que la littérature empirique établissant la mobilité quotidienne des femmes dans les pays asiatiques est rare les plus remarquables étant (Fernando et Porter, 2002; McCleery, 2005). Les études sur l'accessibilité en tant que sous-ensemble de la mobilité pour les femmes des pays en développement sont encore plus rares.

Étant donné que des pays asiatiques tels que l'Inde et la Chine devraient être à l'avant-garde de la vague d'urbanisation des prochaines décennies (McKinsey Global Report, 2010) le lien genre-transport-mobilité est important à comprendre, dans ces contextes. Les publications universitaires étant dominées par des études réalisées par et en Europe et par les États-Unis, le manque de connaissances sur d'autres régions du monde risque de perpétuer des stéréotypes. Les médias dominants de l'Ouest ont popularisé les femmes vêtues de sari pauvres qui marchaient sous le chaud soleil indien, car elles ne pouvaient pas se payer les transports. Cependant, il faut examiner de plus près comment les femmes, dans le contexte urbain intérieur, au-delà de Mumbai, Delhi ou Bangalore, utilisent les ressources disponibles pour négocier l'espace public et ce qui les empêche de réaliser leur plein potentiel en tant qu'êtres humains.

À notre connaissance, aucune étude transculturelle sur les femmes urbaines entre un pays du Nord mondial économiquement développé et un pays en développement du Sud n'a encore été entreprise. La présence d'un chercheur indien affilié à l'Université de Grenoble a été l'occasion d'apporter une nouvelle perspective au corpus de connaissances en étudiant la vie des mères qui travaillent en milieu urbain dans deux pays

différents, la France et l'Inde. qui pourraient affecter la liberté de mobilité et l'accessibilité spatiale des femmes des pays en développement et des pays développés. Même dans ce cas, certains chercheurs estiment que la vie quotidienne des femmes vivant en milieu urbain dans les pays développés et en développement présente plus de similitudes que ce qui est évident de prime abord. Comme le souligne le rapport de Tanupriya Uteng (2012) pour la Banque mondiale sur « Le genre et la mobilité dans les pays en développement » :

« Étonnamment, il existe de nombreuses similitudes lorsque l'on compare le comportement de déplacement entre hommes et femmes parmi les pays développés et en développement. Les caractéristiques communes comprennent un accès et des attitudes différenciés selon le sexe vis-à-vis des transports publics et privés, des différences dans les responsabilités en matière de prise en charge des enfants et des personnes âgées, les voyages d'escorte qui en résultent et enfin les différences résultant de la contextualisation des rôles des femmes »

Cette idée reposait également sur le concept de « villes ordinaires » élaboré dans le livre éponyme de Jennifer Robinson, dont le principe fondamental est que toutes les villes devraient être considérées comme des villes ordinaires plutôt que comme des catégories distinctes de « Nord global » et « Sud global », « Riche », « pauvre » couramment utilisées dans les études urbaines. Une forme de théorisation plus cosmopolite peut avoir des avantages politiques et intellectuels et permettre aux villes d'apprendre de leurs expériences respectives (Robinson, 2006).

Le cadre théorique utilisé pour cette étude est l'approche de la capacité d'Amartya Sen. L'aptitude de l'approche de la capacité à effectuer des études de genre, sa structure ouverte permettant d'intégrer différentes dimensions du bien-être humain et la possibilité d'examiner les conditions de vie particulières de chaque individu l'adaptent à cet objectif.

La thèse est organisée en trois parties composées de dix chapitres au total. La partie 1 détaille la littérature sur l'expérience de la ville en matière d'égalité entre les sexes, la mobilité et l'accessibilité des femmes et les éléments clés de l'approche par les capacités. Elle décrit ensuite le plan de recherche et la méthodologie, y compris une nouvelle technique visuelle pour opérationnaliser l'approche fondée sur les capacités. Elle a été utilisée pour la collecte de données primaires. La partie 2 présente des études de cas de trois villes dans lesquelles les questions de recherche de cette étude sont examinées en détail. La partie 3 présente les résultats globaux, les implications politiques, les conclusions et les limites de l'étude. Les annexes fournissent des informations supplémentaires et les références de chaque chapitre sont données à la fin.

Sommaire de la revue de littérature

i. La dimension sociale de la mobilité

La mobilité est à la fois la capacité de voyager vers des destinations de choix et la quantité de mouvement nécessaire pour le faire. Dans son livre «On the Move», Tim Cresswell (2006) fait la distinction entre le simple mouvement et la mobilité. Alors que le mouvement est une notion abstraite située dans les notions abstraites de temps et d'espace absolus, la mobilité est en revanche une facette sociale de la vie imprégnée de sens et de pouvoir et composée d'éléments de temps social et d'espace social. Un train reliant Paris à Lyon se déplace dans l'espace et le temps abstraits mais l'horaire, les horaires, les divisions de première et deuxième classe, l'achat de billet, le verrouillage des portes, la vérification de billet par le contrôleur, etc. correspondent à une utilisation spécifique de celui-ci, avec des conséquences sur la liberté de mobilité des passagers

Dans l'idéal, la mobilité est une liberté personnelle qui consiste à ne pas être contraint d'être mobile mais est un pouvoir à se déplacer n'importe où et à tout moment. Cependant, en réalité, de nombreuses forces limitent notre mobilité personnelle, à commencer par nos propres capacités physiques face à divers types de terrains (surfaces inégales, pentes, marches), contraintes spatiales et temporelles qui nous empêchent de sortir de certains endroits (escaliers, murs, portes, serrures, peur de la noirceur, heures de fermeture, horaires, etc.). Il existe également des obligations sociales (liens familiaux, obligations professionnelles, postes liés à l'âge ou au sexe, etc.) qui peuvent nous empêcher de quitter certains lieux, ainsi que des contraintes mentales et comportementales telles que les compétences et les perspectives culturelles qui permettent d'encourager une disposition à être mobile (Sheller, 2008).

La mobilité est à la fois un produit et un agent de production d'espace social. La liberté de mobilité, dans le monde moderne, reste toutefois inégalement répartie et est étroitement associée aux formes de pouvoir qui empêchent certains groupes de bénéficier de la mobilité que d'autres exercent (Sheller, 2008). Les luttes spatiales révèlent les hiérarchies implicites, le classement de l'espace, les règles et les exclusions afin de maintenir des visions particulières de la ville ordonnée (Beebejaun, 2017). La mobilité est un "bien intermédiaire" que les gens utilisent pour accéder aux ressources nécessaires à la satisfaction de leurs besoins et à la réalisation de leurs projets. Parce que ces ressources sont inégalement réparties, souvent sur de vastes territoires quotidiens, les différences de potentiel de mobilité peuvent créer ou exacerber des facteurs d'inégalité sociale (Chardonnel, 2012).

« La mobilité est une ressource avec laquelle tout le monde n'a pas une relation égale » (Skeggs, 2004, p. 49). Cela est particulièrement vrai pour les femmes dont le mouvement dans la ville est fonction de facteurs socioculturels ancrés dans l'histoire.

Dans les années 1970, les géographes féministes ont commencé à remettre en question les hypothèses sous-jacentes à la planification des transports classiques. Ils ont commencé à distinguer les schémas de mobilité des femmes dans l'espace urbain de ceux des hommes et ont rejeté l'idée de « banlieue » (Law, 1999). En utilisant des données globales de voyage et des carnets de voyage, de nombreuses études dans des pays développés ont signalé des différences cohérentes et significatives entre les sexes en ce qui concerne le but du voyage, la distance de voyage, le mode de transport et d'autres aspects du comportement de voyage (voir la section « Caractéristiques des schémas de mobilité des femmes »). La recherche a identifié deux racines de la mobilité sexospécifique: la peur de la violence dans les lieux publics et la répartition inégale des responsabilités à la maison en ce qui concerne la différence entre les modèles de mobilité des hommes et des femmes. La littérature résultante s'est ramifiée dans ces deux domaines.

i. La peur des espaces publics

Pain (1991; 1997a; 1997b) affirme que « parmi tous les facteurs qui augmentent la peur du crime, c'est la femme qui en ressent le plus grand effet ». Cette peur se confond avec la classe et l'appartenance ethnique dans les expériences quotidiennes des femmes dans la ville (Scraton et Watson, 1998; Tyner, 2002; Pain, 2001; Day, 1999).

D'autres études ont montré que, bien que les hommes aient plus de risques d'être victimes d'agressions (Reid et Konrad, 2004), les femmes signalent souvent des niveaux de peur du crime deux à trois fois supérieurs à ceux des hommes (Hickman et Muehlenhard, 1996). En raison de la différence de genre entre « avoir peur » et « être victime d'un crime », des études féministes explorant la perception de la peur par les femmes ont été critiquées selon lesquelles les sentiments d'exclusion des femmes dans les espaces publics s'expliquaient par leur « irrationalité »

Les chercheuses féministes ont réagi à ces implications de l'irrationalité en montrant que les expériences des femmes dans les espaces urbains étaient mal reconnues et en élargissant la portée de la « violence » pour inclure, par exemple, les agressions verbales et gestuelles (Pain, 1991 ;Valentine, 1989).

ii. Division inégale du travail à la maison

Plusieurs études et enquêtes ont montré que, malgré leur présence accrue sur le marché du travail au cours de la seconde moitié du XXe siècle, les femmes continuent d'assumer davantage de responsabilités domestiques que les hommes. Par exemple, Phipps et al. (2001) ont montré que les femmes de ménages à

double carrière subissent plus de contraintes de temps que leurs maris. Même si leurs heures de travail totales (rémunérées et non rémunérées) sont égales, le fait que les femmes soient plus souvent responsables de tâches domestiques qui ne peuvent être différées génère plus de stress pour elles. Les auteurs font également valoir que le stress du temps des femmes tend à augmenter, car elles doivent faire face à différents types de responsabilités et sont soumises à des normes sociales qui leur imposent davantage de responsabilités quant à la manière dont le ménage est géré ou aux membres de la famille présentés publiquement. Un rapport des Nations Unies de 2010 (*World's Women*, 2010), qui analyse l'emploi du temps des hommes et des femmes dans plusieurs pays, montre que les femmes consacrent plus de temps à l'activité de « Préparer les repas » dans le monde, sans exception. Dans 13 pays asiatiques étudiés, les femmes consacraient 1 heure et 45 minutes à cette tâche, contre 15 minutes chez les hommes. Dans 26 pays de régions économiquement développées, les femmes ont passé une heure et demie et les hommes, seulement 25 minutes.

Pour faire face à ce double fardeau, les femmes ont adopté certaines pratiques telles que choisir des emplois proches de chez elles même si leur salaire est moins élevé. Ils effectuent de nombreux courts déplacements pour pouvoir effectuer plusieurs tâches domestiques en dehors de la maison, combinant parfois leurs déplacements rémunérés et non rémunérés. Leur structure de mobilité s'est révélée plus complexe comme une toile d'araignée, alors que celle des hommes est plus linéaire, même si elle évolue lentement dans les pays occidentaux. Les femmes sont également de plus en plus utilisatrices des transports en commun et marchent plus que les hommes, principalement pour compenser le fait qu'elles possèdent moins de véhicules personnels. Même dans les pays du Nord où les femmes sont presque également représentées sur le marché du travail, le citoyen moyen est toujours perçu par les décideurs urbains comme un homme. La croissance des sociétés dépendantes de l'automobile laisse présager en soi un reniement délibéré des besoins de mobilité des femmes (Uteng, 2012). La peur du harcèlement sexuel dans les environnements de transport en commun tels que les arrêts de bus, les gares de chemin de fer, les véhicules et même dans les rues en général impose des limites d'espace et de temps à la mobilité des femmes.

L'inégale liberté de mobilité des femmes par rapport aux hommes, signifie que celles-ci participent moins à la société, utilisent moins l'espace public et sont en infériorité dans la capacité à être prises en compte par rapport à la géographie physique de leur environnement. Cela a également conduit à une moindre accessibilité aux lieux, c'est-à-dire à la possibilité d'atteindre physiquement les destinations désirées dispersées dans l'espace physique. La diminution de la mobilité et de l'accessibilité porte atteinte au plein droit des femmes à la ville en tant que citoyennes égales. Lorsque ce droit n'est pas réalisé, les femmes se heurtent à d'importants obstacles pour accéder aux opportunités éducatives, économiques et politiques. Les chances des femmes dans la vie sont souvent moindres que celles des hommes même lorsque leurs ressources matérielles et leurs compétences personnelles sont égales (Brown et al, 2005).

Les contraintes temporelles dues à leur rôle de genre obligent les travailleuses à trouver des emplois qui leur permettent d'équilibrer leurs responsabilités domestiques et professionnelles. Ceci est évident dans les compromis que les femmes sur le marché du travail effectuent : travailler près de chez elles pour réduire le temps de déplacement et/ou occuper des emplois à temps partiel.

L'approche de la capabilité

L'approche fondée sur les capabilités découle de l'inconfort de Sen face aux limites de l'utilitarisme, qui était jusqu'alors la base pour mesurer le bien-être des individus et des pays. Sen a fait valoir que des revendications autres que l'utilité, telles que les droits et libertés, que la société veut souvent reconnaître, n'entrent pas explicitement dans l'approche utilitariste du choix social (Sen (1970) ; (1976) et (1979)). Par la suite, Sen a mis au point, perfectionné et défendu, dans de nombreux articles et ouvrages, un cadre directement lié aux capabilités et à la liberté humaines (Sen, 1980; 1984; 1985; 1987; 1992; 1999) : l'approche par les capabilité (CA) ou la théorie des capabilités. Dans son livre *Development as Freedom* (Sen, 1999), Amartya Sen ne voit plus la liberté comme un élément essentiel du bien-être mais aussi comme un ingrédient essentiel du bien-être. Etant donné que bien-être est synonyme de liberté, il s'ensuit que tout être humain devrait aspirer à une vie de liberté. L'idée maîtresse de l'approche des capabilités est que les arrangements sociaux devraient viser à élargir les capabilités des personnes - leur liberté d'accomplir ce qu'elles veulent (Alkire et Deneulin, 2009). Robeyns décrit l'approche fondée sur les capabilités en tant que « cadre normatif large pour l'évaluation et l'évaluation du bien-être individuel et des arrangements sociaux » (Robeyns, 2005). « L'approche par les capabilités reflète l'idée attrayante et intuitive selon laquelle les individus devraient être égaux en ce qui concerne la liberté effective », a déclaré Cohen (1993, p. 7).

Une notion clé de l'approche par les capabilités est celle "fonctionnements". Les fonctionnements sont des activités et des états d'êtres divers qu'une personne peut entreprendre (Robeyns, 2011). Ces « états » et ces « actions » sont les réalisations de chacun. Le degré de liberté se reflète dans la capacité de rassembler différents « états et actions » pour se construire une vie et avoir la liberté de changer la combinaison « d'états et d'actions » en fonction de ce qui conduit à un bien-être supérieur. Une capabilité reflète la capacité d'une personne à atteindre un fonctionnement donné (« faire » ou « être ») (Saith, 2001).

Sen insiste sur la nécessité d'accorder une attention particulière non seulement aux mécanismes de répartition des ressources, mais également à une grande variété de pratiques sociales formelles et informelles, de coutumes et d'interactions. Ces pratiques jouent souvent un rôle important dans la détermination des chances réelles de l'existence d'individus, indépendants de leurs biens personnels, de leurs compétences personnelles et de leurs handicaps. Sen appelle ces mécanismes « facteurs de conversion ». Ils englobent une

foule de phénomènes environnementaux, sociétaux et personnels qui permettent aux personnes de convertir les ressources en fonctionnements réels (Brown et Stears, 2005).

Pertinence de l'approche de capacités pour l'analyse de genre

L'approche fondée sur les capacités convient généralement à l'analyse sexospécifique en tant qu'obsession singulière du revenu en tant qu'indicateur du bien-être; elle masque des aspects tels que la santé en matière de procréation, le travail de soins, le travail ménager, la non-violence domestique ou la disponibilité de réseaux spécifique à la vie des femmes (Robeyns, 2003).

Martha Nussbaum écrit que les théories de l'utilité et des produits sont « insensibles aux variations contextuelles, aux circonstances qui déterminent les préférences et à la capacité d'un être humain de convertir des ressources en une activité humaine significative » (Nussbaum, 2000). Sen a expliqué que la question de l'égalité des sexes peut être comprise beaucoup mieux en comparant les choses qui importent intrinsèquement plutôt que les moyens de les atteindre.

Mettre l'approche de capacités en pratique

L'approche par les capacités a eu une influence considérable au niveau théorique - dans la conceptualisation du développement et son évaluation. Pourtant, les progrès ont été beaucoup moins concrets (Stewart, 2014). Malgré la littérature empirique croissante sur la pauvreté et le bien-être basée sur ou inspirée de l'approche par les capacités, il est très difficile de trouver des applications qui reflètent pleinement et parfaitement la richesse et la complexité de cette approche (Chiappero-Martinetti, 2008). Des tentatives d'application de l'AC sont nécessaires car le langage des capacités reste difficile et spécialisé (Ibrahim, 2014). La mesure est nécessaire pour la pleine réalisation de l'AC comme cadre pour une éthique pratique, potentiellement applicable à l'analyse du développement humain et du bien-être (Comim, 2008).

Pour toute méthode de mesure, les questions à traiter sont de savoir s'il faut mesurer les fonctionnements ou les capacités ou les deux; quels sont les fonctionnements / capacités à étudier et quel poids devrait être donné à chacun d'eux.

Méthodologie

L'hypothèse : La capacité de mobilité affecte le bien-être général des femmes vivant en ville et ayant un emploi (travailleuses urbaines).

Questions de recherche

Les quatre questions de recherche que nous abordons dans ce travail sont les suivantes :

1. Quelles sont les caractéristiques de mobilité des travailleuses urbaines ?
2. Quelle est l'étendue de la capacité de mobilité des travailleuses urbaines et quels facteurs influencent cette capacité ?
3. Les femmes ayant une capacité de mobilité ont-elles aussi une capacité d'accès spatial ?
4. Comment la capacité de mobilité et d'accès spatial affecte-t-elle le bien-être général de ces femmes ?

L'approche

L'approche par les capacités considère chaque personne comme une fin et une valeur en soi. L'intention de l'approche par les capacités découle d'une préoccupation humaniste pour la "qualité de vie" et la liberté d'action que les gens possèdent au quotidien. Comme l'objectif de cette étude était de considérer la liberté des femmes en matière de mobilité en utilisant l'approche par les capacités, un cadre qualitatif s'est avéré plus approprié étant donné que les facteurs qui influent sur la mobilité des femmes ne sont pas homogènes.

L'échantillon

L'échantillon choisi est constitué de 116 mères vivant en ville, âgées de 25 à 50 ans, ayant au moins un enfant à charge et occupant un emploi à temps plein.

Les villes dans lesquelles l'étude a été réalisée

L'idée de choisir une ville moyenne en France et deux villes moyennes en Inde s'appuyait sur cette notion selon laquelle la vie des femmes présente de nombreux éléments en commun du fait de leurs responsabilités importantes en matière de foyer et d'enfants, quelle que soit leur région. Après un processus de sélection à partir de certains critères préétablis, deux villes de l'Inde de taille et de caractéristiques économiques comparables à celles de Grenoble ont été choisies. Il s'agit de la ville de Jalandhar, dans le nord de l'Inde, dans l'Etat du Pendjab et de la ville de Trichy, dans l'Etat du Tamil Nadu, au sud du pays.

Les instruments utilisés pour l'étude

Les entretiens personnels ont été menés à l'aide d'un questionnaire semi-structuré contenant des questions à la fois objectives et ouvertes. Deux outils spécifiques de l'entretien personnel ont été utilisés:

1. Schéma Déplacement (à partir de l'Enquête Ménage Déplacement)
2. Technique visuelle appelée "Game of Cards" créée dans le but de susciter des réponses concernant les fonctionnements réalisés et souhaités.

Qu'est-ce que la méthode Game of Cards?

Le jeu de cartes a été créé en combinant les techniques de "photo élicitation" et l'utilisation de cartes dans des entretiens personnels par certains chercheurs qualitatifs.

Certaines 'doings' (activités) et 'beings' (état d'être) typiques des mères qui travaillent ont été identifiés. Des images appropriées représentant ces fonctionnements ont été sélectionnées et des cartes illustrées ont été créées.

Les activités suivantes sont représentées : travail domestique et soins aux enfants; loisirs, réseaux sociaux, pratiques religieuses, santé et remise en forme ; réussite professionnelle ; indépendance financière et enfin entretien des relations importantes.

Compte tenu des différences socioculturelles entre les zones géographiques sélectionnées et au sein de celles-ci, les images utilisées ont été adaptées à chaque ville. Nous avons montré aux personnes interrogées les cartes et nous leur avons demandé de choisir les «choses» et ces «états» correspondant à leur vie présente. Elles ont ensuite été invitées à sélectionner les images qui correspondaient aux activités/états qu'elles désiraient potentiellement mais qu'elles étaient incapables d'obtenir dans leur situation présente. Les contraintes qui ont empêché la réalisation des fonctionnements souhaités ont ensuite permis une discussion avec le répondant.

Plusieurs images sont susceptibles de décrire un même fonctionnement. Les cartes présentant le fait de manger dans un restaurant, regarder un film, faire du shopping sont toutes des images montrant le fonctionnement des loisirs hors domicile. Les images illustrant le fait de regarder la télévision, d'écouter de la musique ou de bavarder au téléphone sont celles qui montrent le fonctionnement des loisirs à la maison. Ces deux ensembles de fonctionnements ont été pris pour représenter la capacité de loisir.

La première question de recherche a été travaillée à l'aide de données secondaires telles que l'EMD et le recensement de l'Inde. Il a été répondu à la question de recherche numéro 2 en utilisant les données de mobilité collectées lors des entretiens et du jeu de cartes. Pour répondre à la troisième question de recherche, un score multidimensionnel de non accessibilité a été calculé comme expliqué au chapitre 2. La quatrième question de recherche a été traitée à l'aide des entrées fournies par les personnes interrogées à l'aide du Game of Cards.

Jalandhar

Jalandhar est une ville industrielle située au cœur de l'Etat du Pendjab, au nord-ouest de l'Inde. Le Pendjab est l'un des États les plus prospères et économiquement développés de l'Inde. Jalandhar est l'un des plus grands centres de fabrication d'articles de sport au monde. Il existe également plusieurs petites industries de fabrication de pièces détachées et d'articles chirurgicaux. Jalandhar compte 8,4 millions d'habitants et sa densité est de 7844 habitants au km². C'est une ville radiale confrontée à des problèmes de congestion, de mobilité et de stationnement. Les transports en commun à Jalandhar n'ont rencontré aucun succès, bien que le gouvernement ait tenté par moments de mettre en place un service de bus urbain.

Résultats en lien avec la question de recherche n ° 1: La plupart des femmes parcourent entre 2 et 5 km. 40% travaillent à domicile. L'usage des deux roues est parmi les plus élevés en Inde.

Résultats liés à la question de la recherche 2: alors que les personnes qui ont les moyens d'acheter un véhicule privé ont une bonne mobilité, cela est beaucoup plus limité à ceux qui sont trop pauvres pour se permettre même le transport informel et ceux socialement conditionnés à ne pas voyager seul.

Résultats en lien avec la question de recherche n ° 3 : L'accessibilité spatiale est limitée pour une multitude de raisons. La raison la plus flagrante est la non-disponibilité d'un système de bus public intra-urbain. Les femmes qui travaillent et travaillent dans la ville sont en mesure de gérer leur mobilité habituelle, grâce au service de transport adapté de pousse-pousse et de voitures, bien que ce ne soit pas une façon confortable ni agréable de se rendre au travail au quotidien. Pour les personnes travaillant en dehors de l'agglomération et incapables d'utiliser des véhicules personnels, le manque de connectivité fiable est particulièrement difficile, ce qui les oblige à recourir à divers arrangements de transport personnel et public. Les rôles de genre de la mère qui travaille occupent une place prépondérante dans l'image. Pour les personnes ayant de jeunes enfants, l'exécution des devoirs maternels constitue le pivot autour duquel s'organise le trajet quotidien vers le travail.

La discussion au sujet de l'accessibilité montre également qu'une mobilité accrue n'est pas synonyme d'accessibilité accrue. En dépit de la grande mobilité selon toutes les métriques conventionnelles de kilomètres parcourus, de temps passé et de nombre de voyages, certaines femmes avaient toujours un très faible accès au lieu de travail. Par contre, celles qui voyagent sur de longues distances ne sont pas les seules à avoir un accès difficile. Il était tout à fait possible de se rendre au centre-ville sur moins de cinq kilomètres et pourtant, il était souvent difficile de s'y rendre en autopartage.

Résultats en lien avec la question de recherche n ° 4 : Les capacités de mobilité limitées empêchent les femmes d'exercer de nombreuses autres activités liées au bien-être, telles que les loisirs, les rencontres sociales ou la visite de temples pour la satisfaction spirituelle ou même l'exercice. Les plus touchées étaient «Mobilité Have Nots», où le manque de mobilité de la mère l'empêchait d'offrir une éducation ou un

environnement sûr à ses enfants. La pauvreté accroît les obstacles à la mobilité causés par des facteurs tels que les chantiers isolés et le manque de connectivité des transports.

Trichy

L'agglomération urbaine de Trichy se compose de la ville de Trichy et de huit petites villes des environs, pour une population totale de 1 022 518 habitants. La zone bâtie de la ville a augmenté de manière exponentielle en réponse à la croissance démographique. L'agglomération de Trichy est l'une des « million plus cités » de l'Inde.

Contrairement à Jalandhar, Trichy dispose d'un important réseau de transports en commun géré par l'État, ainsi que de nombreux bus privés reliant la ville aux villes voisines. Cependant, l'étalement urbain a laissé les nouvelles localités résidentielles en dehors du réseau de bus, ce qui entraîne la nécessité de faire nombreuses correspondances et, partant, une faible accessibilité aux destinations.

Résultats en lien avec la question de recherche n° 1 : à Trichy, la proportion de femmes n'effectuant aucun voyage est de 26% est très inférieur à la moyenne dans les zones urbaines de l'Inde/districts similaires, qui est de 35/37%. De même, le nombre de femmes effectuant des trajets professionnels de plus de 20 km est également supérieur à la moyenne nationale. Ces deux indicateurs montrent que les femmes à Trichy sont plus mobiles que dans de nombreux autres districts indiens et donc plus capables de travailler en dehors du foyer. Le taux de participation des femmes au travail supérieur à la moyenne à Trichy est un autre indicateur de ce fait. Plus de femmes utilisent également les transports en commun à Trichy (40%) que la moyenne nationale de 17%.

Résultats en lien avec la question de recherche n° 2: nous estimons que tous les répondants avaient la capacité de se déplacer seuls, quel que soit le moyen de transport utilisé, qu'il s'agisse de modes de transport autres que la marche ou comme passagers. Cela a été rendu possible par la tradition bien établie des femmes voyageant dans des autobus au Tamil Nadu et par une attitude plus libérale à l'égard des femmes travaillant à l'extérieur et vues dans des lieux publics même tard le soir.

Résultats en lien avec la question de recherche n° 3: La plupart des répondants de l'échantillon ont utilisé les transports en commun. Bien que cela leur ait donné les niveaux de mobilité souhaités, leur accessibilité spatiale était faible en raison de l'inefficacité du système de bus. L'inefficacité se traduit par l'inconfort du trajet, le manque d'informations sur les arrivées de bus, avec de longues attentes aux arrêts de bus et une

connectivité médiocre en certains lieux de périphérie de l'agglomération. Dans les zones résultant de l'étalement urbain, ce manque de connexion a été ressenti plus vivement.

L'accessibilité dépend du lieu de résidence, qui pour certains est ancré au domicile des grands-parents pour assurer le soutien des services de garde. Cependant, cet arrangement a également amélioré leur capacité à occuper un emploi plus loin de chez eux. L'inégalité du développement régional a entraîné une concentration des emplois dans la ville de Trichy, ce qui a rendu les femmes difficiles dans les villes autour de la ville. Ces femmes sont obligées de trouver un emploi à Trichy et doivent faire le trajet jusqu'à trois heures par jour en bus pour se rendre au travail et revenir. Leur accessibilité spatiale était donc la plus pauvre parmi tous les répondants

Vivre dans une zone compacte et dense (comme la vieille ville-temple de Srirangam dans Trichy) fournit une meilleure accessibilité, mais la tendance à l'étalement urbain menace ce mode de vie dans la ville.

. Résultats en lien avec la question de recherche n° 4 : Les femmes de la ville de Srirangam qui effectuent de courts déplacements et ont donc plus de temps à consacrer au bien-être par le biais d'activités de loisirs, religieuses et sociales. Le potentiel de fonctionnement le plus souhaité par les personnes interrogées à Trichy concernait la santé et la forme physique, le principal obstacle à sa réalisation étant le manque de temps. Cela a surtout été observé pour les personnes concernées par de longs trajets, ce qui met en évidence le rôle déterminant de la mobilité dans le bien-être général. Vivre dans une zone compacte et dense (comme la vieille ville-temple de Srirangam dans Trichy) fournit une meilleure accessibilité, mais la tendance à l'étalement urbain menace ce mode de vie dans la ville.

Dans les deux cas, toutefois, le lieu de résidence du travailleur est basé sur la pension alimentaire offerte par la génération précédente. Certaines mères qui travaillaient ont pu occuper des emplois au-delà de 20 ou 30 kilomètres, sachant que les enfants étaient pris en charge à la maison et qu'il n'y avait pas de retour forcé à une heure précise, comme dans le système de crèche. Cela a amélioré la capacité de la mère à occuper un emploi rémunéré, car elle est libre d'occuper des emplois en fonction de critères autres que la proximité.

Grenoble

Grenoble est une ville de l'est de la France située dans le département de l'Isère et de la région Auvergne-Rhône-Alpes. C'est une commune de 18,1 km² et une population de 163 625 habitants. Cette commune est située au centre d'une agglomération urbaine appelée Grenoble Alpes Métropole, composée de 49

communes et d'une population de 4 43,123 habitants en 2016 Grenoble est la plus grande commune de l'agglomération et le pôle principal d'emploi des habitants des communes environnantes. C'est la deuxième agglomération de la région après l'agglomération lyonnaise. Grenoble est située dans une vallée entourée de trois massifs montagneux qui font partie des Alpes françaises. Grenoble Métropole a un réseau de transport bien développé et a été pionnier lors de l'introduction de nouvelles générations de tramways.

Grenoble est depuis longtemps marquée par la haute technologie, certains osant même invoquer cette ville comme "la Silicon Valley de la France". Les différences socio-économiques au sein de l'agglomération sont considérables, en particulier entre le nord et le sud., Grenoble est confrontée au défi de porter une société de plus en plus hétérogène.

Résultats en lien avec la question de recherche n ° 1 : Dans l'agglomération grenobloise, au moins 80% des femmes sont titulaires d'un permis de conduire, comme dans le reste de la France. Les femmes grenobloises utilisent davantage les transports en commun que les hommes (environ 10 à 12% des déplacements en tram ou en bus, contre 6 à 8% des hommes). Contrairement à l'Inde, dans les contextes urbains, la possession d'une voiture n'est pas perçue comme « prestigieuse ». La tendance à adopter un transport non motorisé qui véhicule une conscience écologique fait que pour de nombreuses personnes l'usage d'une voiture est un choix par défaut. Pour certaines femmes, la voiture est une contrainte, car leur emploi du temps est trop strict pour tenir compte des incertitudes des transports en commun ou des ralentissements de la marche/du vélo.

Résultats en lien avec la question de recherche n ° 2 : Toutes les femmes interrogées avaient une bonne capacité de mobilité, c'est-à-dire qu'elles utilisaient n'importe quel mode de transport pour se déplacer n'importe où, aidées par un réseau de tramway/bus fiable et par un relatif sentiment de sécurité dans les rues, comme dans la plupart des villes d'Europe occidentale.

Résultats en lien avec la question de recherche n ° 3 : L'accès à l'espace urbain, cependant, diffère considérablement parmi les femmes de la ville en fonction d'exigences temporelles liées à la garde d'enfants ou, dans quelques cas, de par la nature de leur profession. Le lieu de résidence joue un rôle important dans la détermination de l'étendue des possibilités d'accès. Celles qui n'avaient d'autre choix que de vivre dans des quartiers à forte présence d'immigrés et de populations défavorisées pauvres du sud se sentent limitées dans leur capacité d'accès des zones plus chics comme l'hypercentre de Grenoble. La perception de « bonnes » et de « mauvaises » zones crée des barrières mentales à l'accès et une division invisible nord-sud dans la ville.

Résultats en lien avec la question de recherche n°4 : La capabilité d'accès aux loisirs dépend principalement du temps disponible, mais aussi de la disponibilité financière et du profil socio-économique du répondant. Les femmes appartenant à des groupes ethniques minoritaires trouvent du bien-être dans la religion, mais ne ressentent pratiquement aucun lien avec les activités de loisirs habituelles associées à la montagne. L'accès aux montagnes n'était pas perçu comme facile pour celles n'ayant pas leur propre voiture.

La tyrannie du temps

Il est remarquable que malgré les différences de niveaux de développement économique et les conditions socioculturelles très différentes entre Grenoble et les villes indiennes et, dans une certaine mesure, entre les villes indiennes elles-mêmes, toutes les mères qui travaillent parlent avec passion et souvent avec regret de la tyrannie du temps dans leur vie. Elles ont expliqué combien le manque de temps les empêchait d'être et de faire ce qu'elles veulent. En d'autres termes, le temps est le principal responsable de leur incapacité à réaliser ce qu'elles souhaitent. Inversement, celles qui ont réussi à obtenir certains fonctionnements qu'elles apprécient sont celles qui sont moins contraintes par le temps.

Dans les trois villes, une personne interrogée passe 60% de son temps à l'extérieur de la maison à des activités contraintes : se rendre au travail, être au travail, exécuter des activités de routine hors travail, avant ou après le travail. Cette partie de la journée est donc contrainte à la fois temporellement et spatialement. Les 40% restants, la mère qui travaille est à la maison et ses responsabilités sont liées à la sphère domestique. Dans les villes indiennes, parmi les femmes mariées, les mères qui travaillent restent presque entièrement responsables de toutes les tâches ménagères et de la garde des enfants. À Grenoble également, dans les ménages à double revenu, la femme est le pivot autour duquel s'articule la machine du ménage, même si le partenaire masculin contribue plus que dans le contexte indien. Certaines mères célibataires ont trouvé de l'aide auprès de leurs parents vivant à proximité, mais la plupart des difficultés étaient plus difficiles que pour celles vivant avec un partenaire.

Les enseignements plus généraux sur les capabilités étudiées

Capabilité de mobilité et d'accessibilité

1. Le trajet vers le travail est le trajet le plus important qu'une mère au travail effectue dans toutes les villes, en termes de temps et de distance parcourue. Travailler longtemps et devoir s'y rendre avec plus d'une correspondance n'est le fait que de femmes sans choix et d'incapacité à trouver un travail plus proche de chez elles avec des avantages comparables. Cela concorde avec les statistiques selon lesquelles le bonheur personnel diminue à chaque kilomètre parcouru par un navetteur. Le stress causé par le manque de contrôle de son temps de parcours, les retards, l'ennui et l'isolement entraînent une baisse de la satisfaction et une augmentation de l'anxiété.

2. La voiture est peut-être l'objectif ultime de la mobilité dans un pays en développement comme l'Inde, mais les femmes qui conduisent une voiture sont peut-être plus limitées dans l'Ouest que celles qui ont la possibilité d'utiliser d'autres modes de transport. Elles optent souvent pour la voiture parce qu'elles ont une multitude de déplacements et/ou d'arrêts à accomplir sur leur trajet domicile-travail.

3. La mobilité de base (telle que définie par la capacité de se déplacer sans être accompagnée à l'aide d'un moyen de transport autre que la marche) est essentielle à la réalisation de diverses capacités telles que la liberté de poursuivre des loisirs, des activités sociales ou même d'offrir de meilleures opportunités aux enfants. Cependant, une plus grande mobilité est en soi une condition nécessaire mais non suffisante à l'accroissement du bien-être. Davantage de mobilité peut même être contre-productive, les kilomètres parcourus en plus se traduisant également par l'accroissement du temps de transport, ce qui est la plus grande contrainte pour une mère qui travaille. Si le but du voyage est de se rendre dans des endroits où se déroulent des activités quotidiennes, la mobilité n'est pas une fin en soi. C'est le moyen d'accéder (accessibilité) à ces activités. C'est pourquoi les politiques publiques allant des services de transport à la planification urbaine ont pour objectif de rendre les ressources disponibles, de répartir les utilisations des sols et de déterminer l'égalité d'accès aux opportunités. Comme indiqué par Delbosc et Currie(2011). l'objectif est d'accroître l'accessibilité individuelle et d'éviter la ségrégation et l'exclusion. Cet objectif ne concerne pas les déplacements à grande vitesse, les moyens de transport privés ou la distance, mais plutôt le fait d'arriver à un endroit donné à une heure donnée avec un effort raisonnable.

4. L'accessibilité est un idéal beaucoup plus pertinent à poursuivre car une accessibilité médiocre avec beaucoup de mobilité réduit le temps nécessaire pour atteindre des destinations obligatoires dans la vie quotidienne d'une mère qui travaille. La faible accessibilité nuit également aux énergies physiques de la mère qui travaille et contribue au stress. Ceci affecte à son tour la réalisation des fonctionnements souhaités.

5. Les femmes elles-mêmes sont incapables d'identifier la mobilité comme un facteur déterminant du bien-être et la considèrent moins importante que d'autres problèmes tels que la pauvreté ou des problèmes personnels.

Capabilité de travail domestique et de garde d'enfants

La lutte féministe depuis des décennies a consisté à relâcher les liens qui unissent les femmes à la sphère domestique afin d'intensifier leur implication dans d'autres domaines de la vie et, partant, d'améliorer leur bien-être. En Inde, les femmes sont presque entièrement responsables de toutes les tâches ménagères et des soins aux enfants. À Grenoble également, dans les ménages à double revenu, la femme est le pivot autour duquel s'articule la machine du ménage, même si le partenaire masculin contribue plus que dans le contexte

indien. Pour les mères célibataires, les devoirs maternels ont été ressentis plus profondément. Certaines mères qui travaillaient étaient tellement épuisées qu'elles ressentaient profondément un manque de repos. Une femme de Trichy, Vasantha, a examiné les cartes et a déclaré: « La seule chose que je veux faire, c'est dormir, car je n'en ai jamais assez! ».

En même temps, l'espace domestique est également l'endroit où les femmes trouvent une source de subsistance émotionnelle et accomplissent certaines activités telles que le maternage ou la cuisine pour la famille offrent effectivement des opportunités de bien-être. Par conséquent, la question de la liberté dépend aussi fortement de la perception des devoirs. Dans son livre «Development as Freedom», Gasper et van Stavernen (2003) préconisent une expansion de la notion de liberté. Ils écrivent : «L'intense concentration sur la liberté peut négliger les évaluations du bien-être en termes de relations sociales et personnelles, qui sont des sources importantes du bien-être des femmes et résultent des efforts conjoints des femmes pour améliorer les autres ».

La notion de liberté doit s'inscrire dans une vision de la pensée et de l'émotion plus nuancée et plus équilibrée entre les sexes, qui découle de l'approche de Nussbaum. Les « émotions » et « affiliation » font partie des dix capacités prioritaires de Nussbaum. Une capacité d'affiliation, c'est-à-dire la formation de relations intimes au sein de la famille, par exemple, peut nécessiter de sacrifier une partie de sa liberté. Lorsque les capacités ne sont pas perçues comme des silos individuels, mais comme des cercles imbriqués et interdépendants, cela nous aide à mieux situer les choix que les femmes font dans la vie quotidienne.

Capabilité pour les loisirs / les réseaux sociaux / la religion

En raison de la relation entre les loisirs et la qualité de vie, la santé mentale et le développement, les possibilités de loisirs des femmes ont fait l'objet de nombreuses études. Cette recherche a montré que les femmes de toutes les cultures sont confrontées à de nombreuses contraintes en matière de loisirs, qu'elles soient matérielles ou idéologiques. Les loisirs constituent un contexte d'oppression et d'exploitation des femmes (Freysinger et Flannery, 1992). Dans cette étude également, le jeu de cartes a révélé que les loisirs étaient les plus recherchés (y compris la possibilité de pratiquer du sport et des activités physiques). La charge de travail entre le domicile à de profondes répercussions sur le temps disponible d'une mère qui travaille et par conséquent sur sa capacité de loisir.

La position féministe depuis des décennies est que les affiliations à la religion sont le produit d'un conditionnement social et culturel sévère imposé par des structures dominantes perpétuant les inégalités entre les sexes. Cet argument suppose que les femmes, en particulier celles des pays les plus pauvres, sont

des destinataires passives de la sagesse reçue et qu'elles n'ont pas les capacités de faire des choix personnels. Une telle notion de « besoin d'être sauvé de leur culture » est contestée dans les études récentes dans divers contextes, y compris celle des femmes musulmanes portant un hijab.

Bien qu'à une plus grande échelle, la religion soit en certaines circonstances un foyer d'inégalités entre les sexes, dans le contexte de la vie quotidienne, dans notre travail la capacité de pratiquer la religion est l'une de celles que les femmes apprécient le plus et qui contribue positivement à leur bien-être. Ceci est compatible avec la recherche qui a mis en évidence des associations positives entre les marqueurs de la religion, de la spiritualité et des résultats appréciés comme la satisfaction de la vie (Ellison et Fan, 2008 ; Salsman et al, 2005), des sentiments d'optimisme et de confiance en soi (Krause, 2005; Whittington et Scher, 2010) et d'espoir (Ai, et al, 2007).

Le rôle de la religiosité en tant qu'un des ingrédients contribuant au bien-être général est étayé par la liste des capacités humaines fondamentales de Nussbaum (Nussbaum dans Nussbaum and Glover ed. 1995, p. 84). Dans "Sens, Imagination et Pensée, Émotions, Jeu et raison pratique", elle explique que la capacité à « imaginer » en relation avec « vivre et produire des œuvres et des événements de son choix, religieux, littéraires, musicaux, etc. » est parmi les dimensions qui sont fondamentalement importantes pour l'être humain. Les expériences et la pratique de la religion et de la spiritualité des personnes interrogées par la prière, le chant, le chant ou la méditation, à la maison ou sur le lieu de culte, impliquent « le sens, les émotions, l'imagination et la pensée » et sont donc cohérentes avec la vision de Nussbaum. Ces expériences pourraient également concerner ce que David Kronlid appelle « mobilité existentielle », c'est-à-dire la capacité d'être émotionnellement, mentalement et physiquement actif et intellectuellement mobile (Kronlid, 2008).

Capabilité d' être une 'bonne' mère

Des études ont montré comment les idéologies dominantes et les attentes sexospécifiques façonnent la perception et l'accomplissement d'une bonne maternité par les femmes (Bobel, 2010 ; Stone, 2007). Il est important de noter que les discours dominants considèrent la maternité intensive et dévouée comme un idéal (celle qui est le plus facilement réalisée par celles qui jouissent d'un privilège économique). Les mères non conformes peuvent éprouver de la culpabilité et/ou être considérées comme inférieures (Atkinson 2014 ; Elliott et al, 2015 ; Johnston et Swanson, 2003 ; Romagnoli et Wall, 2012). Parmi les femmes de la classe moyenne, la maternité est souvent perçue comme une opportunité de choisir et d'exercer son identité (Atkinson 2014). De nombreuses mères peuvent ressentir de la joie et du plaisir à leur maternité, mais aussi à la nécessité de créer des environnements de santé et d'apprentissage idéaux même s'ils ne semblent pas

exister. Hay (1998) a appelé cela le «fossé de la culpabilité», dans lequel les mères, comparées aux pères, ont des niveaux de culpabilité bien supérieurs - même lorsque les deux sont responsables de la même manière de la garde des enfants. Comme en témoignent les exemples de certaines femmes interrogées à Jalandhar, leur besoin d'être une «bonne mère» est intimement lié à la nécessité de cuisiner et de nourrir leurs enfants avec les meilleurs aliments possible sur le plan de la santé et du goût. Celles qui ne le peuvent pas ont exprimé leur sentiment de culpabilité alors que certaines se sont efforcées de respecter ces obligations, même si cela leur a nui par ailleurs.

Partout dans le monde, les femmes considèrent que le fait d'être une mère est un idéal, mais les femmes dont les enfants sont dépendants financièrement, ne quittent pas l'école, restent au chômage ou sont tributaires des mères sont considérés comme un fardeau, peu importe la situation. Dans chaque ville étudiée, il y a un cas de mère qui travaille, qui en a marre de ses enfants adultes qui ne contribuent ni financièrement ni matériellement à l'entretien du domicile. À Jalandhar, Yashodha, l'ouvrière d'usine a regretté que son fils, à la fin de son adolescence, ait quitté l'école et ne puisse occuper un emploi. A Trichy, Gauri, la serveuse est heureuse que sa fille ait terminé ses études et ait un travail alors que son fils ne fait rien; à Grenoble, Jamilia, également serveuse, a déclaré franchement qu'elle espère que ses garçons, âgés d'une vingtaine d'années, quittent la maison, car il lui est difficile de continuer de les soutenir financièrement.

Capabilité de travail rémunéré

Très peu de femmes considèrent leur travail comme remplissant ou contribuant à leur bien-être. Cela peut être lié à la position globalement désavantageuse des femmes sur le marché du travail. Contraintes d'occuper des emplois proches de leur domicile ou dont la durée de travail est compatible avec leur vie de famille, la plupart des femmes n'exercent pas des professions qui les intéressent ou en rapport avec leur qualification. De façon générale, les femmes sont moins bien payées que les hommes, ce qui pourrait également expliquer la moindre importance accordée dans leur vie au travail rémunéré. Dans toutes les villes, la majorité des femmes interrogées ne travaillent que pour le revenu fourni. Sur 116 femmes interrogées dans trois villes des deux pays, moins de dix femmes ont choisi l'image d'une femme professionnelle décrivant le fonctionnement : « réussir sur le lieu de travail » comme souhaité.

Le travail est quelque chose à supporter en attendant de rentrer chez elles dans leur famille et de retrouver les enfants. L'incapacité à entretenir des relations étroites du fait du travail ou des déplacements domicile-travail a entraîné une diminution du bien-être. Une course sans fin entre la maison et le travail est considérée comme une contrainte forte. Les enfants ont la priorité sur les emplois, qu'il s'agisse de vivre avec les parents ou de respecter les lois en vigueur en matière de garde d'enfants et de supporter de longs déplacements (Jalandhar / Trichy) ou d'ajuster les horaires de travail en fonction des horaires d'école / de crèche (Grenoble).

Les implications pour la politique des villes

Villes indiennes

Dans le contexte de la discussion ci-dessus, les interventions politiques visant les trois objectifs suivants pourraient contribuer à l'autonomisation des femmes et au bien-être général des villes indiennes.

1. Réduire les temps de trajet
2. Installations de travail
3. Accorder du temps libre à la maison

1. Réduire les temps de trajet

L'amélioration des infrastructures urbaines propices à la mobilité est recommandée. Bien que ces mesures puissent améliorer la mobilité de tous les navetteurs, étant donné les contraintes de temps strictes imposées aux mères qui travaillent, elles pourraient contribuer à réduire le temps de déplacement de 7 à 8%. En outre, le trajet lui-même peut devenir physiquement moins stressant et aider à économiser de l'énergie, qui est actuellement utilisée inutilement dans des conditions de transit difficiles.

Le renforcement de l'infrastructure piétonnière devrait être privilégié par rapport à une politique de planification centrée sur l'automobile impliquant la construction de nouvelles autoroutes et le nombre croissant de parkings. Les rues locales des villes indiennes sont soit prises en charge par des vendeurs ambulants, soit trop étroites et sales. Selon le dernier recensement de 2011, ces priorités asymétriques affectent davantage les femmes que les hommes. En Inde, la moitié de la population féminine urbaine se met au travail et seulement 5%

Le fait de ne pas reconnaître les autos et les pousse-pousse comme mode de transport officiel compromet la disponibilité du TPI pour le public, en particulier pour les femmes qui les utilisent plus souvent. Intégrer les méthodes de TPI dans la politique de transport urbain et les considérer comme une forme de transport urbain valable et reconnue plutôt que comme un obstacle sur les routes urbaines facilitera les déplacements des passagers.

2. Installations de travail

i. Établissement de garde d'enfants

Outre les systèmes de valeurs traditionnels qui mettent l'accent sur l'implication des grands-parents dans l'éducation des enfants, l'une des principales raisons de la forte dépendance des mères indiennes au travail vis-à-vis de ces grands-parents est que le gouvernement fait très peu en matière de garde d'enfants. On suppose que les structures familiales sont en place et que les femmes / mères sont présentes, prêtes et capables d'offrir des services de garde. (Neetha N, 2009). Cependant, des recherches menées à Jalandhar ont montré que seuls les locaux peuvent vivre avec la famille élargie. Pour les mères à faible revenu qui travaillent et ont de jeunes enfants, en particulier les femmes migrantes, ce soutien familial n'existe pas. Des services de garde de qualité subventionnés fournis par l'État seraient extrêmement bénéfiques pour ces mères qui travaillent. La participation des femmes indiennes au marché du travail urbain est en baisse. La disponibilité accrue de services de garde fiables permettra à davantage de mères de travailler, car toutes ne peuvent pas compter sur des arrangements informels.

À cet égard, les meilleures pratiques peuvent être empruntées au système français. Les évaluations qualitatives dans les pays de l'Union européenne montrent que la France offre de meilleurs services de garde d'enfants que la plupart des pays (Plantenga, J. et Europäische Kommission, 2009), bien qu'elle continue de s'attaquer aux problèmes d'accessibilité financière, de répartition géographique inégale et de qualité variable des services de garde d'enfants.

ii. Santé et remise en forme pour les femmes

Comme il était évident dans cette étude, pour beaucoup de femmes, il n'y a pas de créneau horaire à consacrer à l'exercice étant donné les exigences de la maison après les heures de travail. Comme environ 80% du temps passé à l'extérieur de la maison est consacré au travail, les employeurs des secteurs public et privé doivent permettre aux femmes de faire de l'activité physique sur le lieu de travail, en organisant par exemple des cours de formation. yoga ou gymnases, qui peuvent être utilisés à tout moment. C'est une responsabilité importante, étant donné la forte menace de développement d'une adiposité abdominale, de diabète et de maladies cardiovasculaires chez les Asiatiques (Eapen et al, 2009). En revanche, les données indiennes montrent que moins de 10% de la population s'adonne à une activité physique de loisir (Anjana, 2014).

3. Améliorer les services urbains dans les zones à faible revenu

Les femmes des bidonvilles sont doublement désavantagées en raison de leur faible accès aux services de base et de l'obligation de les obtenir elles-mêmes, la plupart du temps sans aide. La capacité de se reposer et de se divertir dans ces environnements devient encore plus difficile. L'augmentation des investissements dans des services tels que l'eau et l'assainissement réduirait la charge de travail domestique de ces femmes.

Grenoble

1. Lutter contre la ségrégation socio-spatiale

Les politiques d'utilisation des sols de l'administration locale doivent favoriser une répartition spatiale plus uniforme des industries modernes telles que les technologies de l'information, les énergies propres et les biotechnologies. Cela réduirait la ségrégation professionnelle dans les emplois scientifiques et technologiques, ce qui permettrait une plus grande diversité de classe et de genre. Lorsque davantage d'opportunités s'ouvriront pour les habitants de toutes les parties de l'agglomération, la ségrégation socio-spatiale sera moins nette qu'aujourd'hui, ce qui profitera non seulement aux femmes, mais également à toutes les personnes marginalisées.

Les transports publics peuvent être un moyen efficace de niveler les différences sociales. Le «jeune homme de la classe moyenne» se rend généralement au travail en voiture privée et ne considère pas les transports en commun comme une option attrayante. Le fait de décourager l'utilisation de la voiture particulière par des frais de stationnement plus coûteux et d'autres taxes contribuera non seulement à protéger l'environnement, mais apportera également de la diversité aux transports publics. Traverser ces parties de la ville jugées «mauvaises» ou «dangereuses» peut réparer les perceptions et améliorer la cohésion sociale.

2. Intégrer l'ancienne génération

Compte tenu de la forte proportion de population vieillissante dans l'Ouest, il est difficile pour de nombreux pays européens de «bien vieillir». La solitude, en particulier chez les personnes âgées, est un défi social croissant, à tel point que le Royaume-Uni a nommé un ministre de la Solitude en 2018. Il est scientifiquement prouvé qu'il est important de rester pertinent et engagé pour bien vieillir.

Jappens et Van Bavel (2012), dans une étude basée sur l'analyse de l'Enquête sociale européenne (ESS2) de 2004-2010, ont conclu que la cohabitation avec des enfants adultes (plus fréquente dans les pays d'Europe du Sud, d'Europe centrale et orientale et en Irlande) peut influencer le soutien dans les tâches ménagères quotidiennes et la fourniture de soins aux répondants plus âgés. Les plus gros bénéficiaires d'un tel arrangement seraient les mères qui travaillent, comme l'ont montré plusieurs exemples de familles intergénérationnelles dans le contexte indien abordé dans cette étude. Les données provenant d'autres pays asiatiques appuient également cette inférence. Lee et McDonald (2003) pour Seoul et Feng et al. (2013), dans une étude menée dans la ville chinoise de Nanjing, ont conclu que les jeunes parents qui cohabitaient avec des personnes âgées disposaient de plus de temps et d'énergie pour parcourir de longues distances et améliorer leurs chances de trouver un emploi comme leurs responsabilités domestiques étant réduites.

Conclusion

L'étude était axée sur les femmes urbaines travaillant entre 25 et 50 ans, travaillant à temps plein et ayant au moins un enfant à charge, c'est-à-dire un enfant mineur. à la maison. Trois zones urbaines ont été étudiées: une ville de taille moyenne dans un pays développé d'Europe occidentale et deux villes de niveau 2 dans un pays en développement. Cette décision méthodologique nous a aidés à comprendre le facteur genre dans un groupe d'âge présentant des caractéristiques similaires, car cette population doit combiner travail et activités personnelles dans sa vie quotidienne. Théoriquement, l'approche de la capabilité d'Amartya Sen a été utilisée pour considérer la mobilité comme une capabilité et, à cette fin, pour isoler la capabilité d'accessibilité spatiale. Notre objectif était d'explorer comment le genre avait façonné la capabilité de mobilité et d'accessibilité dans différents contextes territoriaux, et de déterminer si la possession de ces capacités était importante pour le bien-être général des femmes.

Dans la question de recherche 4, nous avons constaté dans chaque ville que la capabilité de mobilité est une nécessité fondamentale pour l'accessibilité, essentielle pour la réalisation d'autres capacités liées à la vie professionnelle et personnelle. et social de la femme. La privation des capacités de mobilité et / ou d'accessibilité a pour conséquence que les femmes effectuent moins d'activités souhaitées ou atteignent les états d'être souhaités. S'agissant d'actes et d'êtres auxquels les femmes attachent de la valeur, leur réalisation améliore le bien-être et leur non-accomplissement le diminue. Ainsi, à la fin de l'étude, l'hypothèse exposée au chapitre 2 «La capabilité de mobilité affecte le bien-être général des femmes en milieu urbain» s'est avérée vraie.

Qu'est-ce qui cause la privation de mobilité? La pauvreté et l'isolement spatial des zones industrielles à la périphérie de la ville ont parfois entraîné des difficultés de mobilité. . Certaines femmes sont devenues immobiles à cause des traditions des foyers conservateurs qui désapprouvent (mais n'interdisent pas) les femmes voyageant seules dans différentes parties de la ville.

Cependant, beaucoup de femmes avaient une grande capabilité de mobilité, parcourant plusieurs kilomètres et voyageant pendant des heures, mais leur accessibilité restait médiocre. L'accessibilité est un idéal beaucoup plus pertinent à poursuivre pour les décideurs politiques, car une accessibilité réduite avec beaucoup de mobilité réduit le temps nécessaire pour atteindre des destinations obligatoires dans la vie quotidienne d'une mère qui travaille.

Ayant isolé des facteurs qui façonnent la mobilité et l'accessibilité, l'étude a présenté l'impact de la privation de mobilité et / ou de l'accessibilité. Les données sur les schémas quotidiens de mobilité montrent clairement que dans les trois villes, les mères qui travaillent passent environ 60% de leur temps à l'extérieur et 40% à la maison.

Les 60% du temps passé à l'extérieur de la maison représentent des engagements obligatoires, non négociables et inévitables sur le lieu de travail, les déplacements professionnels et les déplacements hors domicile liés à la maison ou à la famille.

Cependant, ils sont également occupés temporairement pendant les 40% de la journée qu'ils passent chez eux dans les trois villes. Les cas où les mères qui travaillent ont «du temps pour moi» pour se gâter pour leur propre bien-être ou simplement faire une pause quand ils ne font rien sont presque nuls. C'est le nombre total de tâches effectuées quotidiennement par la mère urbaine active qui fait du temps sa principale contrainte, plus que pour les hommes. C'est cette différence qui fait qu'il vaut la peine d'examiner les interventions politiques susceptibles d'atténuer la rigueur temporelle de la mère qui travaille afin qu'elle ait la liberté de mener des activités qui améliorent son bien-être.

Contributions originales de cette étude

La vision microscopique des activités quotidiennes des femmes, comme on le fait ici, aide à comprendre la répartition du temps entre la maison et l'extérieur. On pourrait capturer la praxis des formes de vie des femmes - qui elles sont dans leur vie quotidienne, comment elles organisent leur temps limité, quelles ressources elles sont en mesure de commander et quels espaces elles habitent à différents intervalles de temps. En se concentrant sur le temps passé par une mère qui travaille à l'extérieur de la maison et sur les activités entreprises une fois qu'elle retourne à la maison, les instruments utilisés dans cette étude décrits au chapitre 2- Le schéma de remplacement et le jeu de cartes fournissent une vue à 360 degrés de son monde quotidien.

2. Le déploiement de la technique visuelle, c'est-à-dire le jeu de cartes, qui peut être utilisé de manière interculturelle pour opérationnaliser l'approche par les capacités, offre un nouvel outil à la communauté des chercheurs souhaitant utiliser l'approche par les capacités pour la collecte de données primaires. Cela peut enrichir la compréhension obtenue à partir d'enquêtes à grande échelle et de sources secondaires telles que le recensement de 2011 en Inde et l'EMD en France. Par exemple, le recensement en Inde, qui fournissait pour la première fois des données de mobilité ventilées par sexe, montrait que les femmes qui travaillaient effectuaient des trajets plus courts et voyageaient à pied et dans les transports en commun davantage que les hommes qui travaillaient. Mais les expériences vécues par l'échantillon de femmes qui travaillent à Jalandhar et à Trichy nous indiquent quel type de femmes se rendent au travail et quelles sont les contraintes qui les poussent à adopter ce mode; Comment les déplacements quotidiens trois heures par jour affectent-ils d'autres aspects de la vie de la femme? quelles insuffisances d'infrastructures urbaines et de planification amènent les personnes à changer plusieurs fois de mode de transport pour se rendre sur leur lieu de travail; Quelles sont les expériences quotidiennes des usagers des bus publics? De même, pour la France, bien que des enquêtes quantitatives montrent que les femmes préfèrent la voiture, un examen

plus approfondi éclaire ces données à l'aide d'exemples illustrant les raisons de l'utilisation de la voiture par les femmes et leurs contraintes de vie globales.

3. De nombreux exemples décrits dans les chapitres de cette thèse témoignent de la présence des femmes et améliorent notre compréhension de l'expérience des femmes. Ils montrent que les femmes ne sont pas des destinataires entièrement passifs des pratiques et des idées dominantes. Dans toutes les villes, les femmes ont utilisé les ressources disponibles et ont essayé d'optimiser au maximum leur bien-être en suivant diverses stratégies et en luttant quotidiennement contre les contraintes imposées par la ville.

4. En mettant en lumière les mères qui travaillent en milieu urbain, ce travail espère avoir jeté une lumière sur la vie d'une cohorte moins étudiée, qui semble posséder le meilleur des deux mondes, mais qui en réalité a souvent du mal à faire face au double fardeau du foyer et travail.

5. Examiner leur vie à travers l'optique des capacités nous permet d'aller au-delà de leurs problèmes de mobilité pour comprendre ce qui, dans le vaste domaine du bien-être général, est affecté par ces contraintes de mobilité / accessibilité. Cela permet ainsi de voir qu'un problème d'absence de bus directs, pour prendre un exemple, n'est pas simplement un problème de mobilité. C'est une question de bien-être, car ne pas avoir le bus direct signifie beaucoup plus de temps passé dans les échanges; le stress est ressenti, les énergies physiques dépensées, les coûts encourus en essayant d'autres moyens et, au bout du compte, il y a une famille à la maison qui a besoin de repas préparés et de devoirs bien faits.

Enfin, il y a moins de temps pour ce que la femme valorise réellement - les loisirs, les relations enrichissantes et la santé. Vu sous cet angle, il ne s'agit plus d'un problème de transport ou de mobilité, mais plutôt d'un effet imperceptible et ondulatoire sur la qualité de vie de la femme. Ce changement de perspective de la mobilité des femmes en utilisant le prisme de l'approche des capacités est peut-être la contribution la plus précieuse de cette étude à la littérature existante.

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ANNEXURES

Annexure 1: How Game of Cards data was analyzed

Following the collection of data through the application of the GOC in the field, the researcher has raw data of the responses of each respondent. For example, respondent Sushila has picked up cards D1, D4, D21 and D23 each corresponding to a certain image while Reshma has picked up cards D8, D19 and D31 corresponding to other images. The next steps involved in making sense of this raw data are explained below.

I. Aggregation of images into functionings

The first step towards analyzing the data was to aggregate the images, combining those which represented the same functioning, separately for “Doings” and “Beings”. For example, the images of swimming, exercising on a treadmill, exercising with weights, running in a park and doing yoga can be aggregated into the “Doing” of “Physical exercise outside the home.” As an illustration, the aggregation for one theme i.e. “Leisure outside home “is shown below. Here, for example, the images of shopping alone and shopping with a friend are combined to represent the function of shopping. The function of going to a restaurant is an aggregation of being alone in a café or restaurant/ with family and with another friend.

Functioning	Shopping		Going to Restaurant / Café		Going to a Spa	Going on a vacation	Accessing entertainment outside	Watching TV/surfin	Reading'	Listening to music	Having a hobby			
Code	D1	D4	D7	D29	D28	D33	D35	D36	D10	D31	D14	D11	D23	D12
Image	Shopping with another friend	Shopping alone	Two women in a café	Family dining out	In a café alone	Woman in a spa	Woman relaxing on beach	Going to the cinema	Watching TV	Woman reading at home	Woman on sofa listening to music	Playing a musical instrument	Gardening	Knitting
Respondent														
Marie														
Lisa														

II. Aggregation of functionings into Capabilities

All the functionings that comprise “Leisure” were then combined to represent the Capability for Leisure, as shown in Table 2.

Functioning	Shopping		Going to Restaurant/ Café			Going to a Spa	Going on a vacation	Accessing entertainment outside		Watching TV/surfing	Reading ¹	Listening to music	Having a hobby		
	D1	D4	D7	D29	D28	D33	D35	D37	D36	D10	D31	D14	D11	D23	D12
Image	Shopping with another friend	Shopping alone	Two women in a café	Family dining out	In a café alone	Woman in a spa	Woman relaxing on beach	Dancing in a club	Going to the cinema	Watching TV	Woman reading at home	Woman on sofa listening to music	Playing a musical instrument	Gardening	Knitting
Respondent															
Marie															
Lisa															

III. Marking achieved and potential functionings

The next step was to code which of these cards was chosen by each respondent as an Achieved functioning (coded as A) and as a Potential functioning (coded as P) and obtaining a total for each row, as shown in Table 3 below. This exercise was done for each of the eight capabilities identified. The table below shows the example of “Capability for Leisure”.

Table 3: CAPABILITY FOR LEISURE: Marking achieved and potential functionings

Functioning	Shopping		Going to Restaurant/ Café			Going to a Spa	Going on a vacation	Accessing entertainment outside		Watching TV/surfing	Reading'	Listening to music	Having a hobby		
	D1	D4	D7	D29	D28	D33	D35	D37	D36	D10	D31	D14	D11	D23	D12
Image	Shopping with another friend	Shopping alone	Two women in a café	Family dining out	In a café alone	Woman in a spa	Woman relaxing on beach	Dancing in a club	Going to the cinema	Watching TV	Woman reading at home	Woman on sofa listening to music	Playing a musical instrument	Gardening	Knitting
Respondent															
Marie			A			P	P	A	P	A	A	A	P		
Lisa			A						P						

IV. Possible Variations of GOC for a quantitative analysis

In this study, the objective of GOC was to open a discussion about the constraints faced by the respondent including family restrictions, control of the family automobile, financial independence etc. which don't lend themselves easily to direct questions, as explained in section II of this paper. Importance is given to the narratives of the respondent around the selected images for an eventual qualitative analysis, hence the number of cards in each category do not affect the analysis.

However, GOC could also be used for a quantitative study or a mixed methods study, which depends only on cardinal data of each type of functioning for further analysis, independent of any supplementary prose. To make it suitable for use in quantitative analysis, it is essential that every card has an equal chance of getting chosen. This means the number of cards depicting leisure options, for example, must be the same as the number of cards depicting mobility options. The other ways to get only cardinal responses through the GOC technique could be to ask the respondent to pick one single card to represent her most desirable functioning. The respondent could rank the "Doings" and "Beings" most desired. Additionally, the interrogator could ask the respondent to pick the cards that represent functionings she *does not* desire i.e. those she wants to be free from. In large scale studies, counting the number of times a card-type was picked by one sub group of the sample versus another sub group could allow for interpersonal comparisons. If the data is organized like in Table 1 below, It could also throw light on which functioning is most achieved in a given population and which is unrealized. This sort of matrix can enable a multi city comparison.

While these are only possibilities and pointers, the technique will need to be modified according to the objective, scale and level of generality of the quantitative study to which it is proposed to be used.

Annexure 2 : Reflections from the field for future applications of the GOC

The introduction of the cards towards the end of the interview was a disarming way to unwind the respondents especially because it followed the more objective discussion about transportation, the city and daily routines. As soon as the colorful cards were spread out in front of the respondent, the mood would palpably change to a more informal one.

Several of the women commented about how it made them think about questions they had not dwelt upon since a long time or perhaps never did in the routine of life. In one instance a woman in Jalandhar living with her parents in law, husband and child appeared for all visible purposes to be well adjusted into her joint family but she picked the card depicting a modern nuclear family of husband, wife and two children in a park as a “Being” she would like to attain but was unable to. In all cases where the respondents did not drive a personal vehicle but depended on their husbands to access places in the city, they invariably chose the card that showed an independently mobile woman, elaborating upon how they would feel more liberated if they did not have to keep requesting their husbands to drive them around. In Grenoble, two African origin single mothers picked the card which showed a happy couple saying they wanted a partner to share the financial and household responsibilities.

How many images per functioning?

Field experience shows that respondents search for the card that describes exactly what they do, rather than choose any image indicative of the category. Despite more than a dozen cards showing leisure activities outside, an African lady in Grenoble who sang at the church on Sundays pointed out the absence of such a picture, while another searched for a picture denoting meditation, though there was an image of a woman doing physical yoga. While it is impossible to have an exhaustive set of images, offering a greater choice of images within a category is better than less as respondents seek the card showing maximum relatability with their own life context.

Were respondents limited by the images shown in articulating the functionings they desire? Field experience shows that this was not a limitation of the GOC because there were women who suggested “beings and doings” which had not been represented through the cards. For example, a respondent who was the owner of a small shop in a low income area of Jalandhar, rejected all the images of beings shown to her and said “What I want to become is not here. I want to pursue my education which stopped when I got married after high school. I want to go to college.” There were other such cases which show that though the images were restricted by the researcher’s imagination, respondents were able to move beyond it and articulate other functionings they valued.

Researcher’s bias in selection of situations

Some images may be excluded because of the researcher’s own biases about the “Beings” and “Doings” of urban women. For example, a respondent in Jalandhar asked me why there was no image of a woman reading a newspaper because that was the one activity she wanted to do to keep herself updated but did not find time for. In India, homes with very modest incomes receive a daily newspaper but it is monopolized by the male leaving for work, an image perpetuated by scores of advertisements for tea or breakfast items. Therefore, the disassociation of women from newspaper reading resulted in an error of omission.

Practical difficulties in handling cards

Sometimes the interview takes place in a public space like a café or a on a park bench or in a shop. In such cases, it is inconvenient to spread out all the cards for the respondent to select from. Some cards may fall or slip or not be easily visible to the respondent and may need the researcher's intervention to set it right.

Sequencing GOC in an interview

As the GOC was the last part of the interview, it invariably resulted in a warm closure to the discussion. Having allowed a glimpse into her life, the respondent felt more at ease with the researcher than she had been at the beginning of the interview. In cases where the information sought is not very personal in nature, the GOC technique could also be used in the beginning of an interview as an ice breaker, so that the respondent more forthcoming in subsequent parts of the interview.

A good qualitative study can help us “understand a situation that would otherwise be enigmatic or confusing” (Eisner, 1991, p. 58). Measuring capabilities has been widely acknowledged as a challenging exercise due to its under specified nature. To that extent, the GOC helps to demystify the concept of capabilities by helping respondents articulate their achieved and potential functionings through images.

Annexure 3: Adaptation of GOC for multi-cultural research

In an evaluative exercise of capabilities, Sen recommends the selection of functionings according to each society's concerns and values, by which some functionings may be considered trivial while others more important (Sen, 2003). Several day to day activities like cooking, cleaning, dropping children off to school or helping with homework, buying groceries and commuting to the workplace, among others, are common in the lives of urban mothers worldwide. Yet, the differences in lifestyle between Grenoble and the Indian cities and differences in certain cultural practices between north and south India were taken into account in the creation of image cards. Also, women's physical appearance and manner of dressing was varied due to the ethnic mix within the population in Grenoble and cultural differences between Jalandhar and Trichy. The choice of images was sensitive to these variations because **the aim was to make the respondent identify with the image as much as possible.**

Grenoble society comprises of people from diverse ethnic origins primarily European, North African and those from Western and Sub Saharan Africa. There is significant difference in the physical appearance of the female population of the city depending on their ethnic origins and religious affiliations. Some Africans are dressed in western clothes of skirts or trousers and may or may not wear a headscarf. Others wear the traditional attire of their native countries. Some North Africans and Middle eastern women wear the burqa with the veil while some wear only the headscarf. Women of European origin differ in appearance because their hair colour. If one were to take a ride on the city's tramway, one can see a mix of woman passengers of these descriptions.

The sample was designed to have a mix of working mothers from different communities, to reflect the city's diversity. The images needed to have a certain homogeneity and yet be relatable to women of all ethnic groups. Clip art pictures seemed to fulfill this requirement. Clipart images are visual representations which are useful for representing the everyday in a non-high-brow, easily understood manner (Dillon, 2006). Being a caricature-like drawing or sketch, it is more impersonal than a photograph which is closer to real life. There would be less dissonance if a clip art portraying a redhead drinking coffee (Figure 1) is shown to an African respondent than if a photograph of a redhead performing the same activity (Figure 2) is displayed. Clipart pictures had the advantage that one set could be used for all respondents in Grenoble.



Figure 1



Figure 2

On the other hand, as there is higher degree of homogeneity in the physical appearance of urban Indian women, photographs instead of clip art was used for the Indian cities, though some adaptations were made for regional differences between north and south India. Jalandhar is in the state of Punjab in the north and Trichy is in the state of Tamil Nadu, about 2850 kilometres to the south. In Punjab, women across social categories wear the *salwar kameez* (long tunic and loose pants) in day to day life (Figure 3). In provincial towns of the south like Trichy, women are

more traditional attired in saris with a *bindi* on the forehead and hair tied and adorned with flowers (Figure 4). The images for the GOC were selected to reflect the local people in each case, as much as possible.



Figure 3



Figure 4

The choice of images was also sensitive to the fact that as India is a country of wide income inequalities, the lifestyle of women of lower economic strata is vastly different from that of middle class women. For example, Figures 5 and 6 below portrays this difference in the act of washing clothes.



Figure 5



Figure 6

To understand a working mother's responsibilities at home, certain changes were made in the picture cards used for Grenoble. The activities of "Buying Groceries" and "Buying vegetables" which were separate in Indian cities was merged because in India, vegetables are typically bought from street vendors or from a vegetable bazaar while groceries are bought in grocery stores which may be in the neighborhood or large supermarkets further away. These are hence two different activities, typically spatially separated. In France, the two are usually in the same place, in a large supermarket such as Carrefour. Although fresh vegetable markets are there in various places, they function in the daytime, when working mothers are normally at work. "Walking the Dog" has been included as a region-specific functioning given that western homes more often have pets than Indian homes.

Annexure 4: Picture cards used in the Game of Cards -Indian Cities

1. Mobility



Travelling by auto rickshaw



Travelling by bus



Travelling by train



Driving a car



Riding a two wheeler (scooter/scooty)



Travelling as a passenger A



Travelling as a passenger B



Walking

2. Domestic Work and Child Care



Washing clothes -poor and middle class home



Cleaning the house



Buying vegetables



Buying groceries



Cooking



Serving food; clearing the table later



Washing vessels -poor and upper class home



Drawing a kolam (Trichy)



Being responsible for elderly care



Escorting a child to school/ school bus stop



Escorting child to hobby tuition class



Spending time with children outside e.g. in a park



Helping with homework

3. Religion and spirituality



Picture cards used: Praying at home



Praying in a gurudwara(Sikh temple)



Praying in a Hindu temple

4. Social networks



Having an independent social life with women friends

5. Leisure

Indoor Leisure: Watching TV alone; Watching TV with family



For higher income groups: Watching TV alone; with family



Listening to music



Reading



For lower income groups: Watching TV alone; with family



Outdoor Leisure: Beauty Parlour, Shopping, Cinema



Beauty Parlour



Shopping



Cinema



Family Vacation



Eating out

6. Nurturing Relationships



Being a good daughter in law



Being a good daughter



Being a good mother by giving them time



Being part of a traditional Indian family



Being part of a modern family



Being a good wife

7. Health and Physical Fitness



Going to the gym



Being a healthy and fit woman

8. Paid Work and Financial Independence



Being a successful career woman



Being Financially independent

Other Beings



Being a stressed woman



Being a multitasking woman who can manage everything

Annexure 5: Picture cards used in Grenoble

1. Mobility



2. Domestic work and child care



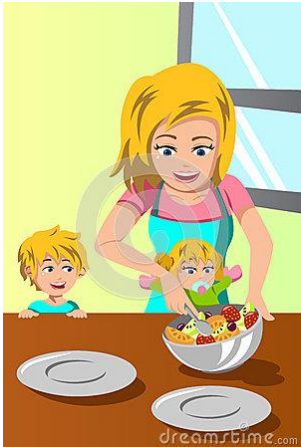
Cleaning



Cooking



Serving and cleaning up



dreamstime.com



Escorting to school



Washing vessels



Washing clothes



Buying Groceries



Walking the dog



Escorting children (non-school trips)

3. Religion and Spirituality



Praying in a church



Praying at home



4. Social networks



friends



Having an independent social life-with women

5. Leisure





6. Nurturing Relationships



Being a good mother

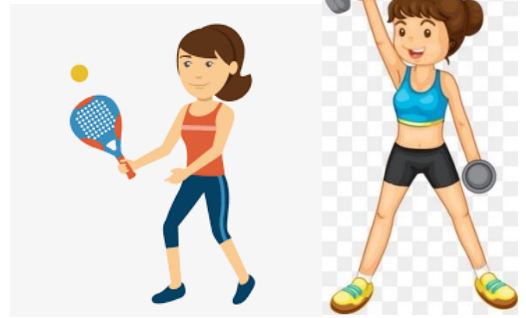


Being a good spouse/partner



Being a good daughter

7. Health and Fitness



8. Paid Work and Financial Independence



Being a successful career woman



Being financially independent

Other Beings



Being a multitasking stressed woman



Being a multitasking Zen woman



Being a woman who is always rushing

Examples of ethnic variations of cards in Grenoble



Cleaning the house



Washing vessels



Cooking



Washing clothes



Escorting children

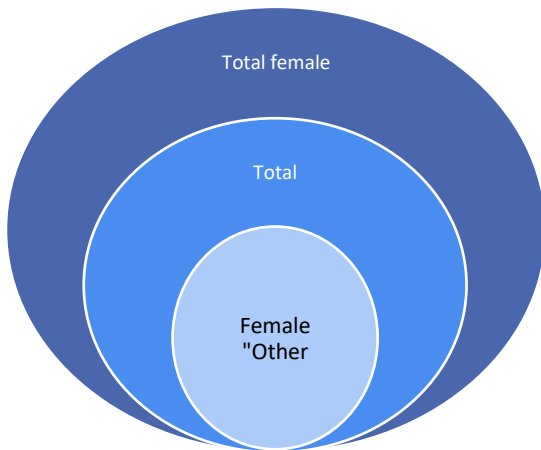


Buying groceries



Annexure 6 : Peculiarities of the mobility data in the Indian census.

The Indian Census has a broad view of what encompasses “work” as an economic activity. The census defines work as “*participation in any economically productive activity with or without compensation, wages or profit. Such participation may be physical and/or mental in nature. Work involves not only actual work but also includes effective supervision and direction of work. It even includes part-time help or unpaid work on farm, family enterprise or in any other economic activity.*” However, mobility data is only captured for the working population classified as “Other workers” i.e. those who are not employed in Agriculture, Cultivation or Household Industry. ²More specifically the Indian Census defines “Other Workers” as follows:



“The type of workers that come under this category include all government servants, municipal employees, teachers, factory workers, plantation workers, those engaged in trade, commerce, business, transport banking, mining, construction, political or social work, priests, entertainment artists, etc.”

Figure 1 shows the relationship of Other Workers with the overall female population of the district. Any reference to “workers” from here on pertains to “Other Workers”.

Figure 1: “Other workers” as a subset of the district’s urban female population

- a. Data is gender disaggregated and available only for district level, not at city or agglomeration level.
- b. Census data assumes that the journey from home to workplace is linear. It does not consider “trip chaining” i.e. other trips undertaken on the way to work (for e.g. dropping a child to school).
- c. The data is available for the urban and rural population of the district separately.
- d. The category of ‘car, jeep or van’ in the census does not specify if it is a private car/ carpool/ office provided car or if the car was self -driven or was the respondent a passenger in a car. Women are often passengers in motorbikes or cars driven by a male members of the family or by chauffeurs, (‘drivers’ as they are called in India) who are commonly employed in middle class households. Sometimes chauffeurs are employed only because the woman of the house does not know to drive. In that sense, the census classification is oblivious to how women really travel because only small minority of Indian women drive their own cars. Further, several government offices provide official transport for some categories of officers and those who need to make field trips as part of their jobs. Some private companies located on the outskirts of the city, or those with shift based jobs where employees return home at atypical hours, also provide transport to employees. Hence the classification of whether it is a private or office transport would be an important distinction.
- e. The grouping of tempo/autorickshaw and taxi while indicating paratransit also hides distinctions.. It is also not clear where cycle rickshaws, which are in abundance in smaller cities like Jalandhar are included.
- f. The Census provides data only on the usage of bus and no other intracity public transport modes like metros

Annexure 7a- Questionnaire (French)

Nom du fichier
Date de l'entretien
Lieu
Durée
Nom de l'enquêteur

Bonjour! Je fais mon doctorat à l'Université de Grenoble sur la mobilité des femmes dans la ville. Pour cela, je parle avec des femmes pour comprendre comment elles se déplacent dans la ville au quotidien. Donc, pour ça, j'aimerais vous poser quelques questions au sujet de vos déplacements quotidiens à Grenoble.

Je vous propose de commencer. Pourriez-vous vous présenter?

Section 1: Classification de répondeur

1. Est-ce que vous pouvez me dire quelques mots de votre situation familiale ?
2. Où habitez-vous ?
3. Actuellement est-ce que vous travaillez ?
4. Pourriez-vous préciser quel type de travail vous faites?
5. Et où est votre endroit de travail?

Section 2: Comportement de Mobilité

Voilà c'est la carte de Grenoble. Comme vous habitez à Grenoble/près de Grenoble donc j'imagine que vous connaissez bien la ville...est que vous me direz quel quartiers vous connaissez bien ?

Q.1. Pourriez-vous s'il vous plaît marquer

d'un petit point rouge les endroits que vous avez fréquentés dans la semaine dernière

d'un petit point bleu les endroits que vous avez fréquentés pendant le week-end?

Q.2. Pourriez-vous s'il vous plaît marquer sur la carte des endroits où vous souhaitez aller ou aller plus souvent, mais vous ne pouvez pas?

Q.3. Pour quoi vous ne pouvez pas aller à ces endroits ?

Q.4. Est-ce que vous pouvez marquer des endroits dans la ville, qui manque la sécurité à votre avis ?

Q.5. Y a-t-il eu un moment où vous vouliez aller à un endroit mais vous ne l'avez pas fait de peur de ne pas pouvoir l'atteindre ou de ne pas pouvoir en revenir d'une manière sûre et confortable ?

Q.6. Avez-vous déjà expérimenté ou entendu quelque chose qui vous a donné le sentiment qu'il n'est pas tout à fait sûr de voyager dans la ville à certaines heures ou sur certaines routes?

Q.7. Trouvez-vous que les hommes et les femmes peuvent se déplacer autour de la ville avec le même niveau de confiance? Peuvent-ils aller où ils veulent à tout moment?

Q.8. Si non, selon vous, quels sont les 3 motifs principaux, qui empêchent les femmes d'aller librement où elles veulent dans une ville?

.Q.9. *A présent*, pouvez-vous svp me décrire ce que vous avez fait hier ? votre horaire d'hier sur cette page appelée "**schéma de déplacement**", comme indiqué dans l'exemple? *S'il vous plaît prenez soin de ne pas manquer les petits voyages que vous avez faits comme à la boulangerie ou pour sortir le chien, etc.*

SCHÉMA DES DÉPLACEMENTS

Indiquez pour chaque déplacement, à gauche, le motif ORIGINE et à droite le motif DESTINATION (les deux motifs devant être accompagnés de l'heure) ainsi que le ou les MODES DE TRANSPORT utilisés. Une règle générale : la destination d'un déplacement devient l'origine du déplacement suivant. **Notez aussi le quartier/commune pour chaque nouvelle origine et destination.**

N'oubliez pas les « petit déplacements » (accompagner un enfant à l'école, aller acheter du pain, le journal, l'essence, promener le chien etc.) ainsi que les éventuelles pauses.

ORIGINE	MODES DE TRANSPORT	DESTINATION
exemple : 8:30 maison	à pieds	8:40 école
8:45 école	à pieds	8:50 boulangerie
8:55 boulangerie	à pieds

Section 3 : Attitude par rapport mobilité

- Q.1. Parmi ceux, laquelle voyages vous aimer et laquelle voyages vous auriez évité si vous aviez la possibilité ?
 Q.2. Pour quelle raison vous souhaitez les éviter?
 Q.3. Si vous en aviez la possibilité, quel(s) voyage(s) souhaiteriez-vous laisser faire à quelqu'un ?
 Q.4. Est-il possible que quelqu'un d'autre prennent en charge ce(s) voyage(s)

Si oui, demandez Q.5

Q.14. Combien des fois quelle qu'un d'autre a fait ce voyage à votre place?

Si non, demandez Q.6

Q.15. Pourquoi quelle qu'un d'autre ne peut pas faire ce voyage à votre place?

Section 4: Avis des Infrastructure Urbain.

Q.7. Lequel de ces transports utilisez-vous lors de vos déplacements à Grenoble?

1. Tram
2. Bus Continuer à Section A : Transport Public, se serait bien de demander la (les) ligne(s) de bus empruntée(s)
3. Ma propre voiture Continuer à Section B : Voiture privée
4. Vélo Continuer à Section C : Vélo
5. Marche à pied

Section A- Transport Public

Q.7. Comme vous êtes un utilisateur de transports publics Grenoble, j'aimerais avoir votre opinion à ce sujet.

a. Combien de temps devez-vous attendre avant que votre bus ou le tram arrive? (*Lire les options au-dessous et coche selon des réponses*)

1. Moins de deux minutes
2. Entre 2 et 5 minutes
3. Entre 5 et 10 minutes
4. Plus de 10 minutes

b. Quels sont vos sentiments vis-à-vis de cette attente ? Comment vous sentez-vous à attendre dans le bus ou le tram arrêté? Ça vous dérange d'attente?

c. Une fois que vous êtes à l'intérieur du bus / tram, avez-vous généralement une place pour vous asseoir? (*Lire les options au-dessous et coche selon des réponses*)

1. Oui
2. Non
3. Parfois
4. Jamais

c. Pourriez-vous évaluer votre voyage typique en bus / tram sur une échelle de 1 à 4, où 1 est très pauvre et 4 est excellente, sur les points suivants? (*Lire les options ci-dessous et cocher les réponses*)

	<i>ve)</i>	<i>ne)</i>		<i>nte)</i>
<i>fort du bus ou tram</i>				
<i>propreté à l'intérieur du véhicule</i>				
<i>rapidité</i>				
<i>couverture du réseau</i>				

d. À votre avis, est-ce que nous avons une offre de transports publics suffisante à Grenoble et dans son agglomération?

e. Est- que vous utilisez quelle qu'application pour savoir les horaires de bus ou tram?

f. Vous connaissez qu'il y a des applications comme ça qui permettent savoir à quelle heure l'bus ou tram vienne, de sorte que vous puissiez planifier mieux, peut être aller a la dernier moment et éviter l'attente.....

Section B : Voiture privée

- 8.a. Pourquoi préférez-vous utiliser votre propre voiture au lieu des transports publics?
- 8.b. Est-ce que vous trouvez facile de garer votre voiture dans les endroits où vous allez?
- 8.c. Que pensez-vous des prix de stationnement ?

Section C : Vélo

- 9.a. Trouvez-vous que Grenoble est une ville qui soutient les cyclistes?
- 9.b. Quel est l'endroit le plus éloigné où vous êtes allés à vélo?
- 9.c. Vous sentez-vous en sécurité dans vos trajets à vélo ?

Section 5: Game of Cards- Functionings- Beings and Doings

DOINGS

Q.1. Je vais vous montrer certaines cartes avec des photos de gens qui font différentes activités. Pourriez-vous regarder ces cartes et choisir les activités qui correspondent à celles que vous faites dans une journée typique?

Q.2. Alors, maintenant, s'il vous plaît pourriez-vous regardez les cartes qui restent et choisir les activités que vous aimeriez faire, mais n'êtes pas capable de faire aujourd'hui? *Bien sûr, les cartes ne montrent pas toutes les possibilités, donc vous pouvez me dire des choses en plus de ces exemples !*

Q.3. Pourquoi pensez-vous que vous n'êtes pas capable de réaliser ces activités?

Q.4. Pensez-vous que vous pourrez un jour, être en mesure de faire ces activités? Qu'est-ce qu'il faudra changer pour vous permettre d'y parvenir?

BEINGS

Q.4. Voici un autre ensemble de cartes illustrées. Parmi celles-ci, lesquelles correspondent avec votre vie. Pouvez-vous me décrire qui vous êtes?

Q.5. Maintenant, s'il vous plaît regarder ces cartes encore et pouvez-vous choisir celles qui décrivent qui vous voulez être idéalement. *Comme tout à l'heure vous êtes libre de proposer d'autres possibilités que celles décrites sur les images.*

Q.6. Qu'est-ce qui vous empêche selon vous de devenir la personne que vous voulez être?

Q.7. Pensez-vous cela puisse changer un jour?

Merci beaucoup pour votre temps.

Formulaire de consentement

Modèle à adapter et à rédiger sur papier à en-tête / portant les logos du projet

(Deux exemplaires à signer par le répondant. L'enquêteur remettra un exemplaire au répondant et l'autre au responsable du projet)

Les informations recueillies au cours de cet entretien font l'objet d'un enregistrement / d'une prise vidéo / photo / d'un recueil par système embarqué (GPS/GSM) et d'un traitement informatique dont l'objectif est : « préciser les finalités du projet ». Ces informations seront utilisées par : « préciser le nom des différents partenaires ».

L'équipe de recherche du projet XXX s'engage à assurer la confidentialité de cet entretien et des matériaux collectés. Néanmoins, vous êtes libre de ne pas répondre à certaines questions. Vous pouvez également vous opposer à tout enregistrement (voix, image, traces GPS). Dans le cadre d'utilisation de GPS, vous avez le droit d'éteindre l'appareil à tout moment.

Pour l'analyse, vos propos seront retranscrits et rendus entièrement anonymes. Dans le cas où il apparaîtrait pertinent de vous nommer ou de nommer votre organisme, les membres de l'équipe XXX s'engagent à vous faire valider par écrit l'extrait cité.

La conservation de l'entretien et des matériaux collectés sera réalisée dans le laboratoire PACTE, dans les meilleures conditions de sécurité, pendant une durée de XXX avant d'être détruit. Durant cette période, vous bénéficiez, conformément à la loi Informatique et Libertés du 6 janvier 1978 modifiée en 2004, d'un droit d'accès, de modification, d'opposition sur les documents numériques vous concernant. Ces droits peuvent être exercés auprès du responsable du projet XXX : « préciser Nom du responsable, adresse postale / mail / téléphone... ».

Pour garantir vos droits à la vie privée, nous vous demandons de bien vouloir donner votre consentement explicite (cochez les cases correspondantes)

- Je déclare avoir pris connaissance des informations ci-dessus et avoir obtenu les réponses à mes questions.
 OUI NON
- J'accepte que mes propos soient enregistrés et exploités par l'équipe du projet XXX
 OUI NON
- J'accepte que mon image et mes propos soient filmés et exploités par l'équipe du projet XXX
 OUI NON
- J'accepte l'utilisation d'un système embarqué pour collecter des données géolocalisées et que ces données géolocalisées soient exploitées par l'équipe du projet XXX
 OUI NON
- J'accepte que mes données soient conservées au sein du laboratoire Pacte
 OUI NON
- J'accepte que mes données anonymisées soient réutilisées pour tout projet ultérieur à finalité de recherche
- (à l'exclusion de toute exploitation à des fins commerciales), dans le respect des mêmes principes de
- confidentialité et de protection des informations personnelles que ce projet initial
 OUI NON

Nom :

Prénom :

Adresse postale ou adresse mail :

Date :

Signature (répondant) :

Annexure 7b- Questionnaire (English)

Hello! I am doing my doctorate in University of Grenoble on mobility of women in the city. For this, I am talking to some women to understand how they move around in the city and what their daily schedule is like. In that connection, I would like to ask you some questions regarding your daily trips in Grenoble. Could you please spare a few minutes to respond to some questions?

Section 1: Classification of respondent

Basic Profile

- Name Age
 - Place of residence _____
 - Place of work
 - Nature of work
 - How long since you have been working ?
 - Family situation- married/single
 - No. and age of children
-

Section 2: Mobility Behaviour

Q.1. Which are the areas you frequent on weekdays?

- Home
- Workplace
- Others like crèche, market, someone's house

Q.2. Which areas do you frequent on weekends?

Q.3. Would you please describe your routine of yesterday on this page as shown in the example? Do take care not to miss out on the small trips you may have made like to buy milk or to drop your car etc.

SCHEMA DEPLACEMENT/DAILY TRIP RECORD

For each trip, please put the ORIGIN and the DESTINATION and the mode of transport utilized.

Pease include even small trips like going out to buy milk, picking up child from bus stop etc.

ORIGINE	MODES DE TRANSPORT	DESTINATION
example : 8:30 house	Walking	8:40 school bus stop
8:45 school bus stop	Walking	8:50. Milk depot
8:55 milk depot	walking

If relevant : Which of these trips would you rather avoid? Is there someone else who can do these trips in your place? How often does that happen?

Section 3 : Mobility Attitude

Q.1. Is there any place in the city that you have wanted to visit or visit more often but cannot? If yes, please can you show me those areas on the map here.

- a. For what reason, you are unable to go there or go there more often?
 - b. It's unsafe
 - c. I find it difficult to reach there
 - d. It takes me too long to go there
 - e. Other
-

Q.2. Have you ever not accepted a job or not done something you would have liked because it was too far away or you could not go there and come back easily? Reasons if this has happened.

Q.3. As a woman, are there parts of the city you would never go to? Could you please show them on the map?

Q.4. Why?

Q.5. Is your opinion based on

- a. personal experience
- b. what I have heard/read about the area

Q.6. Do you think men and women in this city have the same level of freedom to go wherever they want whenever they want? (Discuss why.)

Section 4: Opinions on Urban Infrastructure.

BUS USER

Q.1. I would like to get your views on some of these aspects based on your experience of travelling in Jalandhar/Trichy 's public transport.

- a. How long do you have to wait for until your bus arrives?
 1. Less than 2 minutes
 2. Between 2 and 5 minutes
 3. Between 5 and 10 minutes
 4. More than 10 minutes
 - 5.
- b. How do you feel about waiting at the bus stop? Do you mind waiting?
- c. Once you are inside the bus, do you usually get a place to sit?
 - 1.Yes 2.No 3.Sometimes 4.Never
- d. Could you rate your typical journey by bus on a scale of 1 to 5 where 1 is very poor and 5 is very good, on the following?
 1. Comfort
 2. Cleanliness inside the vehicle
 3. Safety
 4. Spread of the network /connectivity
- e. Do you feel we have adequate public transport in the city ?

AUTO / RICKSHAW USER

What do you think about the a) Fares b) Safety c) Driver behavior?

Prompt for details of usage experience...can you go anywhere? Do you get it easily? Is it comfortable?

PRIVATE CAR/SCOOTY?

1. Why do you prefer to drive yourself and not take public transport?
2. Is it easy to park your vehicle?
3. How do you feel about driving in the city? – safety/ease/as a woman driver

Section 5: Game of Cards-Functionings-Beings and Doings

(Respondent will be shown the stack of picture cards).

Q.1. Could you look at these pictures and pick the activities which you perform on a typical day

Q.2. Now, could you look at the cards again and pick the activities which you would like to do but are not able to do ?

Q.3. Why do you think you are unable to do these activities which you wish to?

Q.4. Do you think you can someday be able to do the activities that you wish to do but are not able to? What will enable you to achieve that?

(Prompt- more family support, better transport systems)

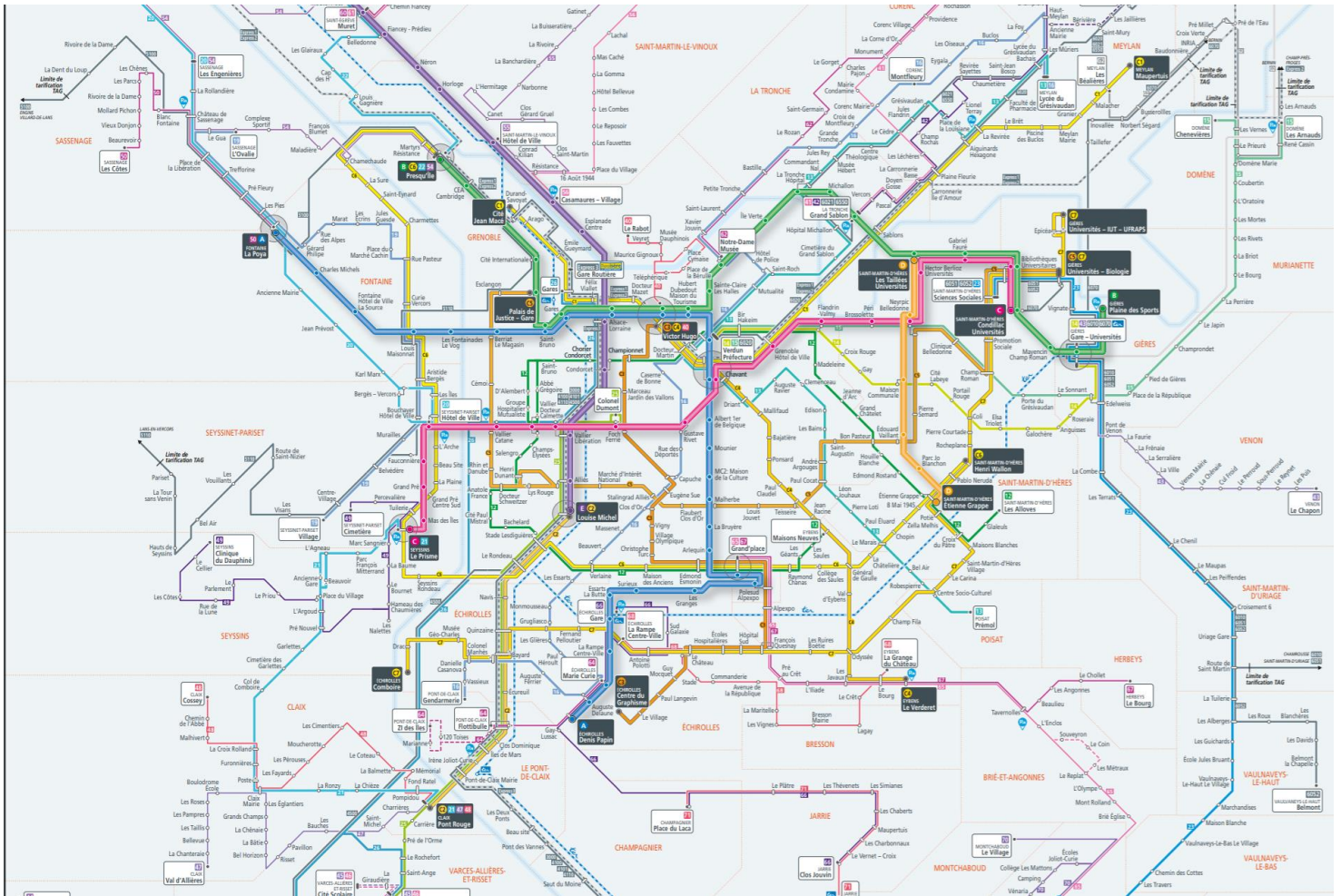
(Purpose of Qs. 12, 13, 14: To see what role personal/ social/ environmental factors play in achieving the functionings she wants to achieve.)

Thank you so much for your time.

Annexure 8 :SEC categories used to classify respondents

	General designations and most common occupations	Nature of contract
A	<p>Higher grade professional, administrative and managerial occupations, large scale employers/intellectual cadres</p> <p>Example: Engineers, doctors, lawyers, financial managers, consultants and entrepreneurs employing > 10 people</p>	<p>Having a permanent job in a public or private enterprise- i.e. contract of indeterminate duration. Or being an owner of a business with > 10 employees</p>
B	<p>Lower grade professional/administrative and managerial occupations/higher grade technical occupations.</p> <p>Example: Administrative assistant, nurse, school teacher, technical assistant, office executive, social worker.</p>	<p>May be permanent or a fixed tenure contract</p>
C	<p>Independent petty traders and shopkeepers + lower supervisory and technical occupations + lower service, sales and clerical occupations + skilled workers</p> <p>Example: Shopkeeper, small restaurant owner + store or factory supervisor, saleswoman, cashier, shop assistant, assistant in a school, nursing assistant.</p> <p>Skilled workers such as housepainter, gardener, auto mechanic, pastry chef</p>	<p>Not applicable for independent traders</p> <p>Modified labour contract in case of those who are employees</p>
D	<p>Semi or unskilled workers performing routine occupations</p> <p>Cleaners/ street vendors/domestic helpers/waitresses/factory unskilled workers</p>	<p>Job maybe in homes or organizations. No contract, no tenure.</p>

Annexe 9 :Grenoble Metropole’s local public transport network



Grenoble’s tram and bus network. The five tram lines A,B,C,D and E (respectively shown as blue, green, pink, orange and violet) crisscross the agglomeration connecting the city and communes bordering Grenoble city.

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Chapter 1 -Literature Review

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Chapter 8 : Conclusions, Limitations and Validity of the Methodology

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