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The context and experience of mobility among urban marginalized women in New Delhi, India

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Abstract: Gender and mobility are two different yet complex themes that intersect to reveal the impact of the latter on practices related to gender. Indian women experience restriction on their movement because of social, cultural and economic issues. In such contexts, the informal modes of transport emerge as bottom-up solutions to fill in the voids left by public transportation system. Transportation is not just a means for geographical mobility but impacts social mobility of women resulting in enhancement of their overall quality of life.

This research takes a descriptive approach to reveal the experience of mobility among urban marginalized women residing in New Delhi, India. The study investigates the issue with the means of reviewing related literature and a pilot study. Ethnography and informal interviews were used as methods of inquiry into the subject. The study revealed significant findings on the social aspects related to the mobility of urban marginalized women.

Keywords: gender; mobility; social mobility; social exclusion

1. Introduction

This research analyses and discusses the results of a study developed to examine the experience of mobility (both, spatial and social) among urban marginalized women residing in New Delhi, India. The research is based on a pilot study supported by in-depth document analysis. The study will be used to identify and understand the experiences of informal transport modes (spatial mobility) on the lives of urban poor women based on their marital status. This understanding will be further used to analyse the social aspects related to spatial mobility of unmarried urban poor women.

The results of the study are analysed and discussed with regard to how the motivations to have a better social status that originate from the desires and aspirations of these young women take a full circle and ultimately give up to the socio-cultural taboos of their closed society. The findings are also discussed from the perspective of the social background of

the participants and their daily routine. Specifically, the findings and issues are discussed with regard to the abilities possessed by these young women that are enhanced with the availability and accessibility of (informal) transport modes.

2. Context

New Delhi is the capital city of India and is also one of the important developing megacities in the world (Kumar et al., 2014). It is situated in the northern part of India with two other states, namely, Uttar Pradesh (to the east) and Haryana (spanning to the north, west and south) surrounding at its borders. The total area of Delhi is 1486 sq. Km, with 500 sq. Km as the urban area (RITES, 2005). The large number of inflow of migrants into the city initiated the reason of the expansion of Delhi. The city has witnessed rapid urbanization since past few decades like other cities in developing countries. According to the 2011 Delhi city census data, the population of Delhi is 16.3 million and is expected to reach 23 million in 2021 (RITES, 2005). Out of the 16.3 million people residing in Delhi, 46% are female (2011). Due to immense difference in various income levels and social differences in the society, the city is sub-divided into many smaller cities- as 'cities within cities' (Tiwari, 2002).

3. Urban transportation

With the ever-growing population of Delhi, the city lags behind to cater to the existing and growing transportation needs of its people. The rapid urbanization has made Delhi one of the most motorized cities in India (Badami & Haider, 2007). The urban transportation system in Delhi relies mostly on road based transport by means of various vehicles that include cars, trucks, buses, motorcycles, two-wheeler scooters, three-wheeled vehicles (auto-rickshaws and other para-transits), cycle rickshaws, bicycles, animal drawn vehicles and pedestrians (Siemiatycki, 2006; Tiwari, 2002). This resulted in a chaotic situation on roads with all the different vehicles with varying speeds struggling to find the space to move. Private vehicles like cars form major part of road-based transport in Delhi. Shifting land use patterns has been a core reason for increase in the number of private vehicles. Besides this, change in local culture and social structure of Delhi has also led to change in mobility patterns and aspirations of the residents (Siemiatycki, 2006). These inter-related scenarios play a major role in keeping people who belong to a particular social class away from the public bus system.

3.1 Informal Transport

Most of the informal modes of transport in New Delhi (vikrams, gramin sewa etc.) contribute towards time economization and enable passengers with a possibility to access the otherwise inaccessible areas. These informal modes have become an integrated part of the city structure as they contribute towards inter-regional mobility and urbanization. The informal sector generates employment for many marginalized people and hence its contribution towards the economy of the city is not to be ignored (Turdalieva & Edling,

2018). Like other places of interaction, the informal modes of transport also present themselves as a space for personal and social negotiations. These modes of transport influence the 'day-to-day displacement' (Kaufmann, Bergman, & Joye, 2004) of passengers through the means of spatial difference and identity. According to Kaufmann, mobility helps in creating new identities outside of the immediate societal structure of the individual (Kaufmann, 2017). The existing public transport system in New Delhi, i.e., the 'bus' system for urban poor people, has several problems that make women avoid it as far as possible. These problems include poor frequency, over-crowding and sexual harassment (few men tend to take advantage of over-crowded buses). This forces women to make use of inferior modes of transport (informal modes). Women belonging to the lower-income section of the society hugely depend on these informal modes because they are able to meet their transportation needs that involves challenging and complex travel routines (Turdalieva & Edling, 2018) along with safety as compared to buses.

Figure 1   Informal transport modes - important part of city infrastructure.

4. Urban marginalized women

Similar to any other infrastructure of the city, gender defines the basic structure of the society. Gender in a way lays down set rules of behaviour and action for men and women. The fact that women constitute around 50% of the total population of Delhi draws attention to the potential possessed by women in raising the economic bar of the city. However, gender inequality is visible at different spheres and at different levels in the society. The issue of gender inequality needs attention from three main perspectives, namely, cultural, economic and spatial (Gupta, 2017) (as discussed in sections 4.1 and 4.2).

4.1 Social Exclusion and Contribution to Economic System

Women in India experience several cultural bindings, which result in many kinds of sacrifices, including giving up their independence. Among the many cities of India, Delhi has been tagged as the crime capital with number of crimes against women being the highest. As per the statistics, women in Delhi receive high levels of education and yet are not able to contribute to the employment sector. The reason being that later in the lives, women have to take the burden of several domestic responsibilities that refrains them from pursuing their careers. Moreover, from spatial perspective, the improper infrastructure of the city also acts as a deterrent (especially for urban marginalized women) with respect to safety that restricts

their movement to the interior of the house taking care of domestic responsibilities and self-excluding themselves from taking up employment that involves some mode of travel.

Despite all the programmes focusing towards upliftment and empowerment of Indian women by the Indian government, women in India still have to face discrimination at various levels, starting from class, income, race, ethnicity and also at territorial level (Gupta, 2017). Women belonging to the marginalized group often contribute to the economic stability of the household by taking up daily wage or monthly wage jobs. In order to spend less time in travelling and make-up for other household responsibilities, it is preferred by them to find work in close proximity to their homes. There are unsaid constraints on the mobility of women in India, which also becomes a reason for not being able to contribute to the economic system of the country. Women in India are involved in both, productive and reproductive works. The activities that yield some economic value are termed as 'productive work' whereas 'reproductive work' is concerned with taking care of the household and its members. The scope and nature of reproductive work for women is often ignored and is not stated in the official data and hence remains in the category of unpaid work (Anand & Tiwari, 2006).

Amongst the various groups of women, the most vulnerable are the urban marginalized women. This group of women are marginalized from two perspectives; first, they belong to the low-income social groups and second, that they are women. 'Urban marginalized people' are people whose rights have been violated and those who possess little economic and political powers. Amongst various kinds of discriminations, as mentioned above, the urban marginalized women in Delhi face exclusion which includes right to property and access to various other assets of the household. Urban poor women are often deprived of access to transport, both at family and at city level, as compared to men. For instance, if a household owns a vehicle, like a bicycle or a two-wheeler, general assumption is that it is for the male members of the family. The reason for this exclusion is both cultural and social. Women in Delhi do not ride a two-wheeled vehicle, which could be because of cultural stigma and also safety issues related to women. These exclusions along with their greater share of domestic responsibilities have had significant effect on their travel choices and status (Anand & Tiwari, 2006). The presence of patriarchal system is evident in all spheres of the society, not just in Delhi but also all over India. The patriarchal system is the social phenomenon that puts men in the forefront when it comes to gaining access to various spaces and assets of the household. Even at the city level, the public transportation system of Delhi is designed to cater to the needs of men (Anand & Tiwari, 2006). That is, it is planned for point-to-point travel patterns (from residential hubs to city centre – places of employment – catering mostly to formal sector).
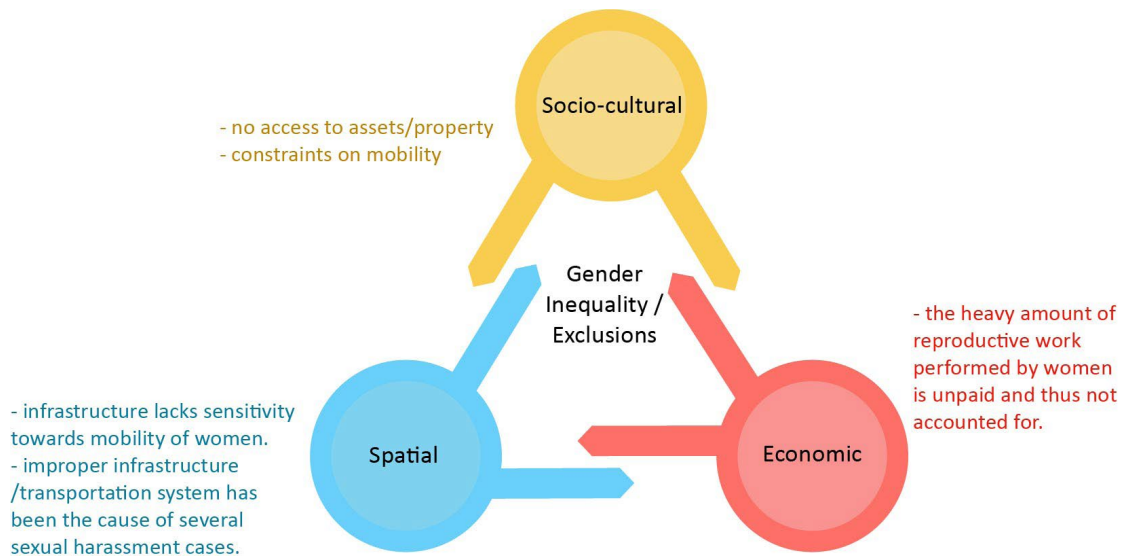
- no access to assets/property
- constraints on mobility

Socio-cultural

Gender Inequality / Exclusions

- the heavy amount of reproductive work performed by women is unpaid and thus not accounted for.

- infrastructure lacks sensitivity towards mobility of women.
- improper infrastructure /transportation system has been the cause of several sexual harassment cases.

Spatial

Economic

Figure 2   Gender inequality/exclusions - derived from (Gupta, 2017).

The daily routine of working women is quite complicated as compared to men. It involves taking care of all household members' routines and includes a variety of activities that need to take place in a harmonized manner. For women, because of the continuous shift of activities between private and public realms there is a lot of unpredictability of travel time (Jurczyk, 1998). This diversity in the travel pattern of women demands a system that is flexible. This leaves the urban marginalized women with no choice but to resort to making use of other modes of transport that are slow and inferior as compared to the formal public transportation system of the city (informal modes).

4.2 Urban Marginalized Women and Mobility

Mobility is a symbol of independence. To be able to travel independently gives a sense of confidence to an individual. Sadly, the mobility of women hasn't been given much importance or rather has been suppressed since a long time. Several authors have established through their studies the gender biased nature of transport policies as they do not provide for the transport needs of women (Bamberger, Lebo, Gwilliam, & Gannon, 1999; Turner & Grieco, 2000). Usually, the planning and development of the cities lacks the sensitivity towards the needs and requirement of women who in a way form the bridge between the interior space (home) and the public realm (urban structures). Women have to undertake a variety of journeys in order to fulfill the daily tasks for running the household that are neglected in the urban transport planning. Several studies conducted in developing countries reveal that the urban transportation system is planned around the needs of men and is not gender sensitive (Borja & Castells, 2001).

Urban marginalized women have always struggled with resource and time poverty. This aspect of women's lives has direct relation to their limited mobility. In Indian context, no importance is given to the effect of poor accessibility on the daily lives of urban marginalized

people, especially to women within this group. However, to whatever extent these women are mobile in the city, there exists a significant difference between the travel behaviour and pattern of women across different age groups and women belonging to different castes. For instance, unmarried women who are not so much bound with domestic responsibilities, tend to travel longer distances for work, with available transport facilities in the vicinity as compared to married women and women with children.

Women account for longer travelling time as compared with men. For men, traveling is focused between home and workplace whereas in case of women it is more diverse due to activities such as picking and dropping off children to school, grocery shopping, taking children and parents to health centers and reaching their part-time jobs (McKnight, 1994). This multi-stop travel takes longer time and may spill out of the regular scheduled timing for buses or other public transport (Borja & Castells, 2001). Several scholars identify this type of travel undertaken by women as 'feminised by routine events' (Hanson, 1995; Law, 1999). Considering the flexible and complex routine of women it is required of the transportation system to be more diverse and flexible.

Anand and Tiwari identify several specific characteristics of urban marginalized women in Delhi. It is highlighted in their study that this group of women are resource and time poor, i.e., they do not have access to transport modes and huge load of reproductive work leads to time scarcity in their everyday routine. This implies that women have a longer workday as compared to men. These factors in turn result in their low participation in productive activities (paid employment) that leads to their involvement in informal, home-based production and service sectors. Women employed in the productive sectors depend immensely on social policy care and intermittent regular means of transport that are low in cost (Anand & Tiwari, 2006), I.e., informal modes of transport. Studies also show that due to risks associated with travelling in public transport or other informal modes of transport, such as, sexual harassment, women tend to 'self-exclude' themselves from certain activities hence limiting access to other social, leisure and economic activities. Having access to resources depends majorly on the access to mobility and the ability to reach those resources (Turdalieva & Edling, 2018).

5. Area of study – Sangam Vihar, New Delhi

Delhi has more than 250,000 migrants coming into the city every year in search of better job opportunities (Center, 2001). Most of the migrant people are settled in unauthorized colonies in Delhi. Today, these unauthorized colonies have unintentionally become an essential part of the socio-spatial and economic system of the city. Besides using the infrastructure, these colonies also establish social and economic ties with the city by providing inexpensive services to the affluent areas of the city. Most of the people living in unauthorized colonies depend on job opportunities provided by the informal sector such as peons, waiter, driver and domestic worker. However, there are few people who are self-employed and start as a shopkeeper, junk-dealer, tailor, milkman, rickshaw puller and hawker (Anand & Tiwari, 2006).

Figure 3   *Context map of the city of Delhi showing Sangam Vihar (study area) that lies on the periphery of the city and falls outside the limits of planned transportation system.*

The study was carried out in Sangam Vihar, which lies in the southern part of New Delhi. Sangam Vihar is an unauthorized colony on the urban periphery of Delhi (Figure 3) with about 400,000 inhabitants (0.4 – 0.6 million) in that area (Singh, Mittal, Yadav, Gehlot, & Dhiman, 2011). Majority of the people living here are migrant poor who have travelled from neighbouring states like Uttar Pradesh and Haryana in search of employment opportunities. Sangam Vihar is in close proximity to Delhi's rich 'South Delhi' area to which it provides majority of service in terms of domestic helpers, laborers, petty vendors, unskilled workers, low-level public sector employees etc. (Kacker & Joshi, 2012; Priyam, 2015).

6. Research methodology

The study presents the methodological insights of a multi-methods approach of studying the daily mobilities of marginalized women living in Sangam Vihar (and nearby areas). For this study, the participants were selected through the process of snowballing. In part one, the study uses document analysis as a method to identify the characteristics of movement patterns of these women in an Indian context. The study also focused on specificities of the subject with respect to the city of Delhi. Several documents that were used for the study included published case studies, journal articles and government reports. Analysis was done using the coding method.

The second part of the study adopted a combination of two complementary ethnographic methods (shadowing) and using phone GPS (in whichever case it was available). Before commencing the fieldwork, a preliminary socio-demographic study was carried out. The socio-economic survey revealed that not all participants were comfortable with writing or filling in forms. This could be because of their education level or lack of confidence. Hence as a first step, informal interviews were conducted with individual participants in order to understand their daily travel patterns. A traditional form (pen and paper) of travel diary was used to record daily routines of participants. The purpose of the travel diary was to get information on three levels – personal information, information related to family/ demographic details and to understand their travel patterns throughout a day. According to Axhausen, travel diaries are a useful method to identify and study travel behavior of individuals (Axhausen, 1995). Questions regarding other household members were asked to understand the family size, family income, and access and ownership of household assets. The participants were asked to describe their usual day starting from morning till night. From the description of their daily routines information regarding their travel patterns was extracted for further inquiry (Table 1). The next step involved, mapping the travel patterns of the participants, understanding the context and their motivations. This was further followed up by unstructured interviews.

Considering the time factor, both for identifying suitable participants and for arranging GPS loggers along with imparting training to participants, it was decided to use participants' smartphones for getting GPS data of their movement throughout a day. However, it was found after the initial socio-economic survey that most participants either do not possess a phone /or possess a keypad phone (and not a smart phone)/ or do not have access to the Internet (even if they own a smart phone).

A total of five participants were studied. Out of these, two lived in Dakshin Puri, which is a squatter settlement close to Sangam Vihar. All of the participants were working women between 20 –55 yrs. of age and belonged to low income group. Out of five, two were married and had the responsibility of taking care of their respective families. They were employed as part-time domestic helpers in the neighbouring areas. The other three participants were unmarried and were working as beauticians in other affluent areas of Delhi. Two different types of methods were used based on the availability of a smart phone (and the Internet) with the participant or without this technology. For participants who owned smart phones, an app called 'Open GPS Tracker' was installed on their phone. They were given initial training on how to use the app. These participants were comfortable using other apps like 'WhatsApp' that enabled them to share pictures of their journeys. The study also included shadowing and conducting a second round of informal interviews with the other set of participants (participants without smart phones).

7. Findings and discussion

The data from this study will be examined based on the marital status of women with regard to the impact on their physical and social mobility. The information will be analyzed for those who travel either using informal modes of transport along with walking and for those who use informal transport along with formal public transport (bus). The information provided by the respondents will be used to understand the experience of mobility (informal transport), household characteristics and other issues on the aspirations of these urban marginalized women.

In order to understand the motivations of the participants it was important to know about their daily distance travelled, modes of travel, the number of inter-changes, their monthly salary and how much time and money they spent on travel every day (Table 1). This data helped to reveal certain crucial aspects that are connected to the impact of transport modes used by the participants.

Table 1   Initial participant information based on informal interviews and travel diaries.

Variables	Ramkali	Reena	Gulabsha	Sonam	Rinki
Age	55	28	20	22	21
Marital Status	M	M	Un	Un	Un
Dist. Travelled /Day (Km.)	8.4	9	16.1	27.6	28.2
Using Transport Mode (Km.)	6	5	15.1	26	26
Walking (Km.)	2.4	3	1	1.6	2.2
No. of Interchanges	1	1	2	2	2-3
Travel Time/Day (Hours)	1.5	1	3.9	4	3.6
Travel Cost/Day (INR)	20	20	50	110	140
Monthly Earning (INR)	8500	8000	7500	8000	3000

Based on the above information it was possible to investigate and reveal certain inter-relationships that guided the study further. For instance, a comparative time use chart was generated (Figure 4) that revealed the total added time spent by the participants (individually) on daily travel.
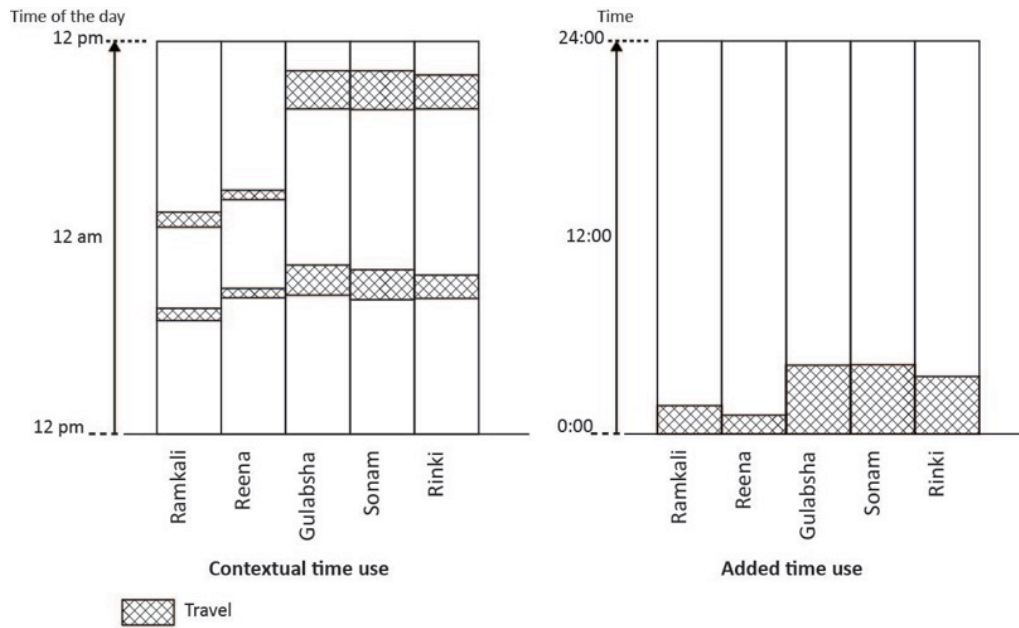
Figure 4   Participants' travel time within 24hours of a day displayed as added time use (right) and contextual time use (left).

7.1 Mapping the Travel Pattern

After the initial interviews with the participants the next step involved understanding their daily travel patterns. The data from this survey was then plotted over the map of Delhi. Maps help in presenting a holistic picture of the case and are a great means of visual representation. Shadon and Dudek mention that maps help to reveal answers to "how and what" questions. After plotting the movement pattern on maps, the study followed up further by using ethnographic methods to get a better explanation of "why" questions (Shadon & Dudek, 2013). Mapping can help to recognize spatial patterns through its interpretive practice and provoke questions that are context-based. According to Hsu, maps have the capacity to introduce a completely new line of inquiry by making invisible patterns visible (Hsu, 2014). These plotted maps were then used to develop time-geography[1] diagrams (Figure 5).
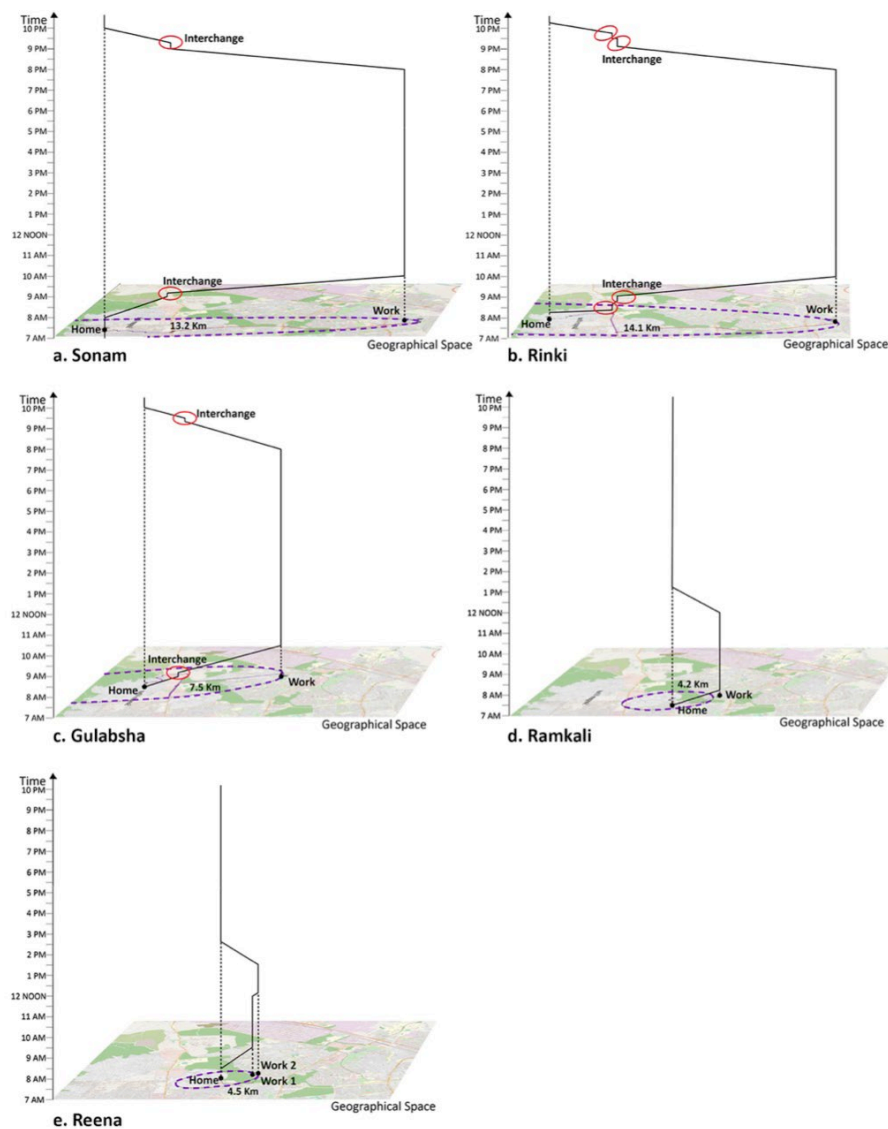
Figure 5   Time geography – Travel patterns of the five participants exemplified with elementary events. The elementary events displayed are: travel; inter-change; arrive; stay; leave.

In the diagrams above, the geographical space is demarcated along x-axis and z-axis. Y-axis denotes the time factor. The lines along the geographical space indicate the spatial distance covered and the vertical lines represent the time spent at one particular place. These time-geography diagrams present an overview of the variation in movements performed by participants. It is found that unmarried women travel larger distances consuming more amount of travel time as compared to married women. It is also observed that during their long journeys, unmarried women compromise on factors such as safety and convenience as they perform their travel with 2-3 interchanges, i.e., using multiple transport modes. These journeys also include walking and waiting (during interchange). Married women were seen to be involved in work that did not demand rigid and full day commitments. Contrary to this, unmarried women were employed in semi-informal sector that required them to work long hours.

7.2 Impact of Spatial Mobility

With regard to the use of travel modes, there were several distinguishing factors among the participants. All participants travel between 8 km to 30 km every day and depend fully or partly on informal transport like *gramin sewa, shared auto rickshaws* and *e-rickshaws*. Although the Delhi government authorizes these transport modes, but their characteristics are more inclined towards the informal category, where the culture of 'adjustment' and 'self-organization' is commonly visible. Due to lack of (easy) access to public transport, people of Sangam Vihar depend on these informal modes of transport to meet their travel needs. The routes of these informal modes are proposed and decided together by the vehicle operators and the government (Delhi Government) and are based on the travel requirements of the people using these modes. The study revealed that out of the total number of passengers, around 80% passengers are women belonging to varying age groups. However, it was noticed that there was significant difference in the travel requirements of these women based on their age group and the nature of their employment. Women employed in formal sector were seen using these modes during regular peak travel hours, i.e., between 8:00 am to 10:00 pm. During the afternoon, major users of these modes were either non-working women who were performing various reproductive jobs or those who were working as part-time domestic helpers or were employed in some other informal sector. The informal modes of transport influence the daily mobility (Kaufmann et al., 2004) of passengers through the means of spatial difference and identity. Kaufmann mentions that spatial mobility is also a means for individuals to escape by disengaging from their local societies and creating new identities (Kaufmann, 2017). Based on this theory, the study revealed that with the help of these informal modes of transport, women aspired to move out of their local neighbourhood in search of better employment opportunities and enhanced social status.
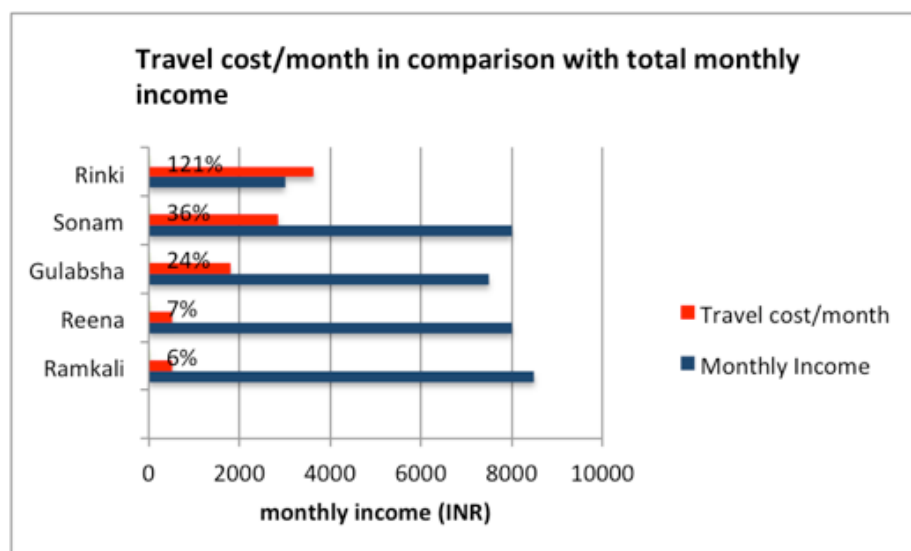

Figure 6   Monthly expenditure of participants on daily travel. For Rinki, travel cost/month exceeds her monthly income.

The study highlights a significant difference between the travel patterns of married vs. unmarried women. Because of huge burden of reproductive work, married women (belonging to urban marginalized group) prefer to work in proximity of their homes and with shorter working hours. The concern to run a family allowed them to use little or no money on their travel. Whereas, unmarried women were willing to travel longer distances, spend more money and effort in order to get better opportunities. It was found that the participants spent about 6% to 36% of their monthly income on travel (Figure 6).

During informal interview, one of the participants shared that she prefers working away from her neighbourhood so that she is able to earn more money and establish better social networks. It was found that unmarried women make effort to add on to their skills by attending short-term vocational courses. This enhancement in their skills gives them the ability to access better opportunities through the means of the transport they use, i.e., informal transport. Rinki, an amateur beautician spent more money (and time) on transport than her monthly earnings. According to her, she had moral and economic support from her family, because it was like an investment for better future opportunities. Although there have been changes in the thinking of people towards considering women equality yet based on the understanding of the socio-cultural background of this group, it cannot be denied that these 'better opportunities' refers to finding a good match for the daughters of the house because of their enhanced social and economic value. The study helps to unfold the effect of spatial mobility on the enhanced social status of these women within their society but does not imply towards actual social mobility.
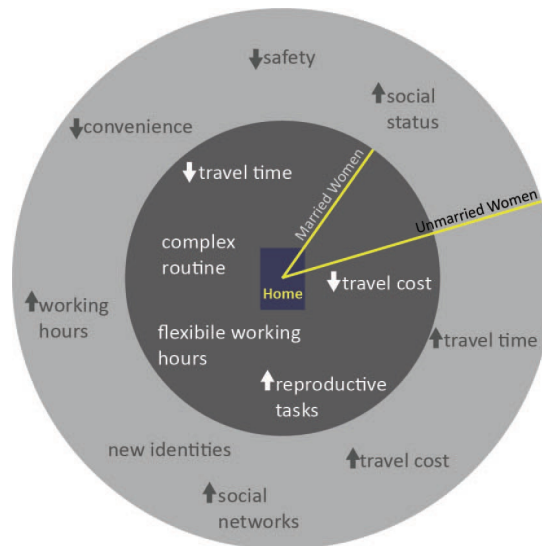

Figure 7   Characteristics of married and unmarried women based on their spatial mobility.

8. Conclusion

The study analyzed the demographic details and mobility patterns of marginalized women living in urban poor area of South Delhi – Sangam Vihar and Dakshin Puri, who are employed

either in an informal or semi-formal sector. In this context, most women had little or no access to assets like a vehicle or a smart phone in their household. This reflects upon the already existing dominance of the patriarchal society.

This study examined the experience of mobility (through informal modes of transport) on the daily lives of these women based on their marital status. In view of the existing relevant literature in the field of mobility, it is clear that accessibility is an important aspect of mobility (Kaufmann et al., 2004). Thus, for unmarried women having access to better employment opportunities by the means of informal transport modes makes them fulfill their desires and create new identities. Besides access, their ability to be able to move away or escape from their local neighbourhood is also found to be an important factor for enhancing their social status. In case of married women, informal modes of transport (because of availability-in the vicinity of their neighbourhood and accessibility-due to low cost) enable them to participate in the productive activities and support their families economically. Because of time-poverty, married women tend to travel in proximity of their houses and generally get involved in part-time jobs.

The ethnographic study and related findings lead the study to a conclusion that highlights mobility as an important component of women's lives as it helps them earn their livelihoods, feel independent, confident and raises their position within their closed social structure. The factors that structure these women's travel patterns are majorly based on 4As, i.e., availability, accessibility, ability and affordability. Unmarried women from this group of the society belong to time-rich and money-poor category and hence do not mind spending more time towards daily commuting for a good salary and desire to climb up the social ladder. Married and older women are occupied with their household duties and/or part-time jobs in the morning and evening and thus tend to move shorter but greater number of journeys as they also need to carry out other obligatory duties in the afternoon. In contrast to this, young unmarried women are less bound by the household chores and therefore tend to spend more time working outdoors to earn a living.

Informal modes of transport (spatial mobility) enable unmarried women to fulfill their own aspirations and to have an enhanced social status but this is largely governed by the prevailing socio-cultural factors that put marriage as the most important aim of the parents of these women (Figure 8). It is understood that this leveling up of social stature is used for an enhanced matrimonial description and does not generate actual social mobility. As supported by literature (Kaufmann, 2017) the study reveals that spatial mobility does not always convert into social mobility.
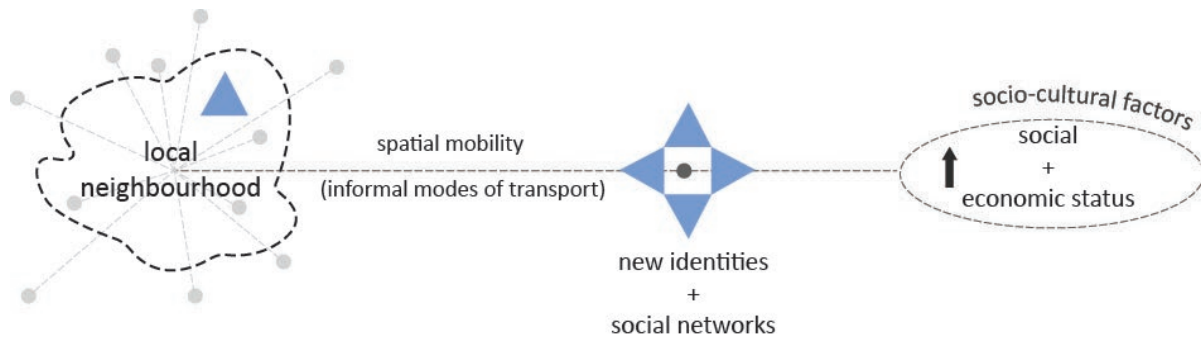
Figure 8   *Spatial mobility enables disengagement from local identities to create new ones for enhanced social status; yet bound by prevailing socio-cultural factors.*

The research is based on a pilot study with a small sample size, which is a limitation of the study. For future research, there is a need to find out the relationship between mobility and social capital (social mobility) of urban marginalized women. To investigate this relationship, it is proposed to conduct an in-depth study of their daily routines, movements and their relationship to the social networks at points of departure, traversal and destination. Other possibilities for future research could be on the lines of a descriptive comparative study and also a quasi-experimental comparative study which arrays marginalized women against non-marginalized women.

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