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More than time and money - Influences on mobility of low-income women in the Villa 20 in Buenos Aires, Argentina[☆]



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ABSTRACT

Aim: Millions of women living in slums in Latin America face severe restrictions on mobility due to gender, socioeconomics, and living location. Using the concept of motility, this article seeks to contribute to better understanding those restrictions and their impacts. The key question it raises is which factors influence daily travel patterns and mobility for women in slums, and to what extent and in what way they influence daily life.

Methods: The analysis draws on qualitative research conducted in 2017 with 23 female residents from the Villa 20 in Buenos Aires, Argentina, an example of a relatively consolidated slum in urban Latin America. The women's daily travel patterns were characterized, relevant influence factors for their travel choices were identified, and the influence of those factors on daily life was evaluated.

Results: Relevant influence factors are insecurity, travel expenditure, travel durations, fixed schedules, orientation problems, and deteriorated public space. It becomes clear that those restrictions hamper access, self-confidence, and the pursuit of personal aspirations.

Conclusions: it shows that their mobility patterns are mainly determined by restrictions. The relevance of factors and their effect differ for each woman, mainly depending on her motility. Even though time and costs have found to be very common and decisive determinants of travel choices, they are by far not equally relevant to the women and are in some cases outweighed by other issues, such as insecurity or orientation problems.

Discussion: The article concludes by outlining recommendations for the adoption of an integrated approach that focuses on both infrastructure and mobility management, including methods and stakeholders from various sectors like transportation, urban planning, and health.

1. Introduction

While slums have not been constructed through formal planning, their presence in cities across Latin America is now perhaps recognized as new normality. Slums have often grown rapidly, and their characteristics differ from the rest of a city. For example, their growth generally has not been accompanied by any kind of formally planned infrastructure and services that attend to mobility needs of residents. Also, while residents in most informal settlements have consolidated and upgraded housing units over the decades of existence, this has only in exceptional cases been matched by the development and introduction of transport infrastructure and services. As a consequence, restrictions in daily mobility are felt by millions of women in Latin America and affect them constantly. Mobility is more than just transport – daily mobility is a transversal dimension of social life, and it determines access to possibilities, experiences, and social participation. Mobility, as a consequence, is highly relevant for health in various respects, of which some are particularly relevant for women. It permits – or inhibits - access to health care and social services. As active travel, it plays an essential role in physical health. On the opposite, unsafe and inadequate public transport may endanger the health of users, may it be through accidents or violent incidences like harassment or even sexualized violence along a journey (Heinrichs and Bernet, 2014; Litman, 2019).

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The topic is therefore also essential for moving towards the visions of global agendas of sustainability. Improving mobility for low-income women plays a role for various of the United Nations Sustainable Development Goals (SDGs) and their specific targets: not only is it a determining factor for improving gender equality, with key targets being the elimination of gender-based violence in public space and “recogniz[ing] and value[ing] unpaid care and domestic work **through the provision of public services [and] infrastructure**” (UN, 2019, emphasis added) (goal 5, targets 5.2 and 5.4), it also contributes to goal 3 – “good health and well-being” – e.g. working towards the targets of universal access to health-care and promoting mental health and well-being (goal 3, targets 3.4, 3.7 and 5.6). And, of course, it is a key step towards goal 11 (“sustainable cities and communities”), substantiated in the New Urban Agenda issued at the United Nations Habitat III conference in Quito in 2016 with the aim of promoting “**age-and gender-responsive** planning and investment for sustainable, safe and accessible **urban mobility for all**, [...] effectively linking people, places, goods, services and economic opportunities“ (UN, 2017 p.7, emphasis added).

Research about the mobility of women, as well as about the mobility of poor people is available from different disciplines (e.g., Allen, 2018; Levy, 2013; Starkey and Hine, 2014; UN-Habitat, 2013), and it is widely recognized that poor women face particular restrictions to mobility. However, there is hardly specific, in-depth research about the daily mobility of women living in slums. Some of the studies about the mobility of slum inhabitants, usually with small datasets and/or qualitative methods, include or focus on gender as a category of analysis (e.g. Anand and Tiwari, 2007 in Mumbai; Gutiérrez and Reyes, 2017 in Buenos Aires; Salon and Gulyani, 2010 in Nairobi), finding especially restrictions in terms of money, safety/security and schedules. More specifically, it has been shown that women generally have less access to vehicles, less income available for traveling, are more in danger and afraid of violence and limited by social norms when moving in public space (Vargas, 2007). At the same time, they have to balance re-productive and productive work – all this in a transport and land-use system generally not suitable for them in terms of schedules, routes, etc. (see, e.g., Peralta Quiros et al., 2014 for Buenos Aires).

In the light of the sharp contrast between the essential importance of the opportunity to ‘be mobile’ and the specific characteristics of slums, the principal objective of this article is to uncover the experience of daily travel of women in slums and the factors that shape their mobility choices. Based on the idea that mobility is the result of a combination of assets or traits of a person or a group and existing opportunities in the physical environment, the key question this article raises is: which factors influence daily travel patterns and mobility of women in slums and to what extent and in what way do they influence and structure daily life? Specific interests were the travel patterns, the underlying considerations, and their impacts on daily life. To find answers, we conducted qualitative research with female residents from a slum in Buenos Aires, Argentina, called Villa 20.

After outlining the relevant conceptual basis for this research in section 2, we describe the applied methods and tools in section 3. The following section 4 summarizes the relevant findings. In section 5, we discuss the findings in the context of the theoretical framework, before concluding with possible implications for policy and further research in section 6.

2. Conceptual framework

Research on spatial mobility has received significant attention and theoretic shifts during the last two decades. Complementary to more classical transport theory that conceptualizes mobility choices as a function of primarily time and cost, theories of mobility as a social practice emerged (Hannam et al., 2006). They stress the central importance of experiential qualities and meanings and the broader sense of mobility for understanding why people travel, how and to which destinations (Cass and Faulconbridge, 2017). This shift in focus to mobility as a social phenomenon in its own right (Hannam et al., 2006) widened the field of transport research to study mobility choices and behavior in relation to infrastructure, built environment and land use.

Research and literature on mobility as a social practice reveal that a distinction is made between understanding practiced mobility (Cass and Faulconbridge, 2017) and the potential to move (Kellermann, 2012), defined as ‘motility’ (Kaufmann, 2002; Kaufmann et al., 2004). The term motility is used to describe the potential mobility of humans. It describes the “capacity of entities (e.g., goods, information or persons) to be mobile in social and geographic space, or as to how entities access and appropriate the capacity for socio-spatial mobility according to their circumstances” (Kaufmann et al., 2004, p. 750).

Kaufmann (2002) and Kaufmann et al. (2004) propose three factors which determine a person's capacity to be mobile in social and geographic space: access, competence, and appropriation. The first factor, access, refers to the availability of mobility options like means of transport and their pricing. As Kellermann (2012) points out, the scope of access to mobility options and technologies may sometimes be a matter of geography and culture. Examples are the role of cycling in the Netherlands or motorbikes in many Asian or African cities. Access may also reflect interdependence conditions with a household. If a couple has, for example, only one car, then this forces one partner to use public transportation as an alternative. The second factor, competence, refers to mobility skills and abilities, at both the individual and societal levels (Kaufmann, 2002). Physical ability is one's ability to move entities from one place to another, as well as one's own personal mobility. Acquired skills relate to mobility licensing (notably a driving license), to language knowledge as mobility means and, increasingly, to the ability to operate mobile mobility applications. Organizational competencies include synchronizing activities and planning, which might be both personal and involving several people. The third factor, appropriation, refers to how mobility agents evaluate mobility options in light of their levels of access and competences, weighed by aspirations, motives, and needs, before each potential movement (Kellerman, 2012). It includes an element of ‘choice of motility’ and compromising (Kaufmann, 2002; Kaufmann and Montulet, 2008), not just existing or imposed access and competences. There are also geographic or cultural elements that determine appropriation and that impact on the other factors. For example, driving for women is still widely held ‘inappropriate’ in Arabian countries, which also leads to the situation that women do not acquire the skills to drive in the form of a driver's license. This example shows that appropriation, as Kellerman (2012) points out, might be the most complex of the three factors as it involves, at least indirectly, various elements.

According to Kellermann (2012), knowing of the potential mobility of mobility actors – and, to add, the way it is or is not transformed into a movement - may assist in the interpretation of their specific movements or practiced mobility at large.

Researching transport through the lens of motility might also contribute to a deeper understanding of the interrelations of health and mobility. This understanding is based on a general idea of health, as shown in the traditional definition by the World Health Organization as the “state of complete¹ physical, mental and social well-being and not merely the absence of disease and infirmity” (WHO, 2019). Accordingly, life satisfaction and subjective wellbeing, while relevant for physical health and longevity (see, e.g., meta-study by Diener and Chan, 2011), can also be regarded as aspects of health in their own right – subjective wellbeing, in turn, seems to be positively impacted by higher motility (see, e.g., McCarthy and Habib, 2018). Another relevant connection between motility and health is shown by the proposed revision of the definition of health as the “ability to adapt and to self manage” (p.1) by Huber et al. (2011). Especially interesting is their description of social health as “people's capacity to fulfill their potential and obligations, the ability to manage their life with some degree of independence despite a medical condition, and the ability to participate in social activities” (p.2). Health, therefore, not only includes subjective wellbeing in its own right, but it also requires a certain degree of autonomy and resilience, which nowadays certainly includes the capital to be mobile.

Before moving on to the methodological framework, key concepts shall be clarified:

- The term slum, while traditionally describing once regular housing that had been left by the residents and deteriorated, is nowadays generally used to define a wide variety of low-income settlements (for criteria and threshold values see UN-Habitat, 2003, p. 12, also Nuissl and Heinrichs, 2013 for an overview of definitions).
- The socioeconomic status of slum dwellers is generally – but not always - low, meaning low income and low social, human, and financial capital (UN Habitat, 2003).
- Gender is understood as a central principle of organization and structure of society that is re-enacted continuously and therefore very stable. Gender is one of the basic attributes of a person (Villa, 2011).
- Women are accordingly here understood in their gendered role, and in the position society assigns to them, facing various structural disadvantages² (see, e.g., WEF, 2014).
- According to the concept of intersectionality, “the complex, cumulative manner in which the effects of different forms of discrimination combine, overlap, or intersect” (Merriam Webster, 2019 n.p.), structural disadvantages of being a woman and the disadvantages of living in a slum intersect and reinforce each other.

3. Methodological framework

To describe mobility beyond the observable travel patterns and to uncover the underlying factors that define travel choices requires fundamentally understanding the subjective perspective of women. This allows the understanding of complex conditions and processes in their context instead of isolating them more than necessary (Przyborski and Wohrab-Sahr, 2014). Case studies provide specific, context-based knowledge, and provide a deeper understanding of an issue (Flyvbjerg, 2006). Therefore, a qualitative methodology using a case study was chosen, which allows approaching the topic in an open and exploratory way in a relatively scarcely developed field of research.

The chosen case study is the Villa 20 in Buenos Aires, Argentina. Structure, location, and context make it a rich case study in the Latin American context. It is located in the district (comuna) 8 (see Fig. 1) in the structurally weak south of the City of Buenos Aires in terms of income, education and infrastructure, and has a surface of 38 ha, with about 30,000 inhabitants (as of 2016), growing rapidly (GCABA, 2010; IVC, 2016).

The Villa 20 is a typical case for the slums that emerged from the 1940s on in Buenos Aires, due to the massive immigration of workers during industrialization. While located on the edge of the city, it is by now surrounded by a vast agglomeration, and in the meantime relatively consolidated and accepted by the government in terms of its existence. Since 2016, it is included in the participatory scheme of *re-urbanización* of the city of Buenos Aires, a program to develop informal settlements in terms of housing and social infrastructure (Motta and Almansi, 2017). These aspects contributed to the choice of the Villa 20 as a case study, since primary data in the form of a census was available and existing networks and organizational structures facilitated access to the field.

Following the logic of the research, sampling was used to include a maximum variety of cases regarding living location inside the slum, ability, family situation, life-cycle, employment, household income and the time the woman had already been living in the slum. Snowball sampling, as the primary sampling method, provided this variety. To prevent staying in a closely limited circle of people, different initial contacts (mainly through attending the assemblies from the process of *re-urbanización*) were used to start the chain of sampling. In parallel, women were asked for an interview by chance, for example in the neighborhood center inside the Villa. Later in the research process, women were particularly chosen in order to complete the sampling variability. The sample size was not determined beforehand but decided upon in terms of theoretical saturation. As a result, 23 usable cases were included in the sample. All names were changed.

A combination of tools was used: participatory observation to obtain access to the field, followed by a combination of semi-

¹ The notion of state of complete wellbeing has been criticized increasingly (see Huber et al., 2011).

² It is important to keep in mind that the gender studies perceive sex as well as gender as a cultural construction and question the dichotomy of two genders as such. Here, it shall also be noted that, while cis-women face many problems, transgender women are even more affected by structural disadvantages.

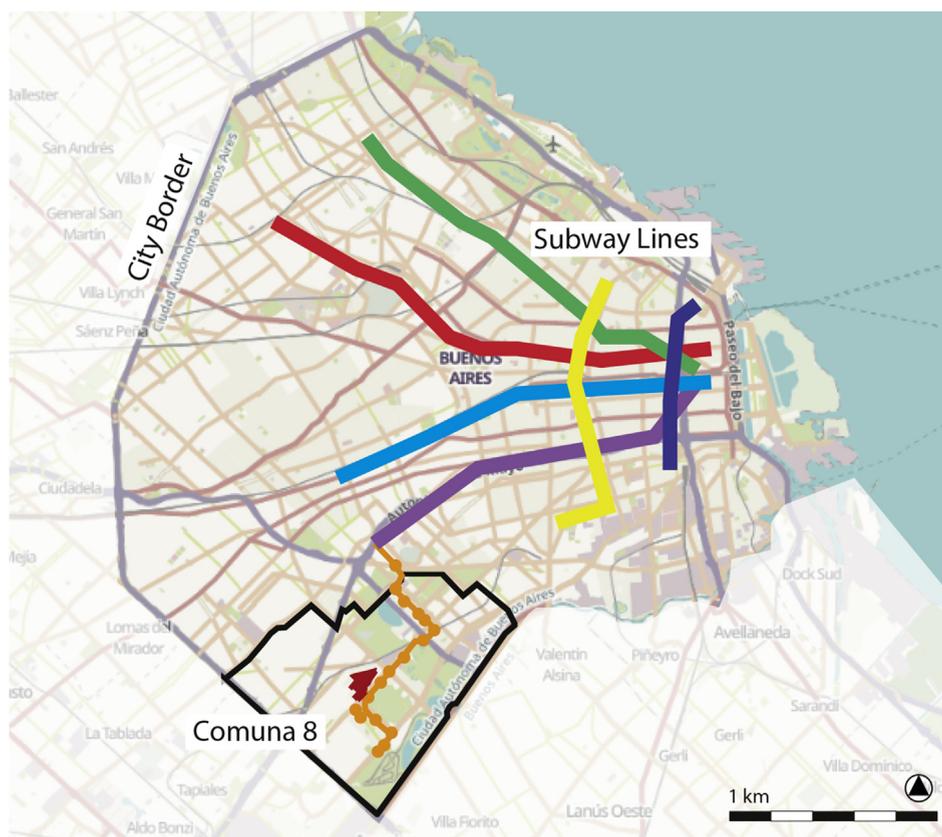


Fig. 1. Location of the Villa in Buenos Aires (own illustration, © OpenStreetMap contributors).

structured interviews, mapping, and go-alongs. This combination of tools was designed to explore the specific topics of interest in a targeted way (see also Table 1).

A semi-structured interview form was the primary research tool. It includes a general structure but mainly follows the relevance from the perspective of the interviewees (Przyborski and Wohlrab-Sahr, 2014). The structure followed the three topics of interest, first addressing general habits of traveling and daily travel patterns, then asking in-depth questions about obstacles and influence factors, and concluding with reflecting questions on the women's mobility and its everyday impacts.

Mapping techniques were included in the interviews. Maps are helpful to stimulate awareness and reflection when talking about spatial practices (Gutierrez and Minuto, 2007) and are used frequently in participatory investigations (Ortiz Escalante and Gutiérrez Valdivia, 2015). The trips and places were sketched together with the women on a basic map of the slum and complement the information about daily travel from the interviews.

As a compliment, "go-alongs" were conducted with some of the women, accompanying them on their regular trips and asking

Table 1
Applied research tools.

Tool	Topics of Interest Results/Effects	Documentation	Processing/Analysis
Observation	<i>Understanding of Context, Influence on development of other tools</i>	Transcription of notes and audio-notes	–
Semi-Structured Interview	Travel patterns Influence factors Impacts on daily life	Transcription of recorded interviews and notes	Excel Table Semi-inductive coding Direct comparison of selected questions
Mapping	Travel patterns <i>Relaxing the atmosphere, enabling communication, providing a better understanding of narratives</i>	Drawings of maps and digital synthesis	Excel Table (complementation) Graphical Analysis
Go-Along	Influence factors <i>Reflection of results from the interviews, access to sub-conscious perceptions, more profound understanding of critical or uncertain results</i>	Transcriptions of audio-notes and notes	Semi-inductive Coding

them to reflect upon this trip. This tool allowed a more in-depth insight into considerations and perceptions that might otherwise not be mentioned (Kusenbach, 2003). This tool was explicitly used to deepen the understanding of the women's perception of their mobility. Due to restrictions of schedule, only five go-alongs were conducted after the interviews.

The objective of the analysis was to generate a dense and thorough description of the daily practices and the subjective perception of the women from the available material. Mayring's (2008) principles of qualitative content analysis were used to analyze the material in a systematic way and close interrelation with the theoretical framework.

The data was analyzed following the specific topics of interests. As the two main ways of analyzing the data, tables of excel and coding was used. Tables of excel served as a way to connect information and find correlations between results and with socio-economic characteristics. All the data that could be synthesized was therefore analyzed in this way. Besides the socioeconomic data, this was also done for some of the influence-factors that came up in the narratives, or to compare answers of specific interview questions. For the analysis of the travel patterns, all the trips were collected and classified according to origin, destination, purpose, frequency, time of day, mode(s) of transport, and with whom the trip was taken. Graphical analysis of the maps was used to complement the table. This allowed characterizing the women's travel patterns through filtering and sorting trips. For the analysis of the relevant factors and their implications on daily life, the transcriptions of the interviews and the go-alongs were coded. Assumed possible influence factors preliminarily served as codes. In the sense of open coding, in the process, further categories were added, therefore including elements of inductive coding (as suggested by Mayring, 2008). From the coded transcriptions for every factor, the tendencies and contradictions were elaborated and put into context with the travel patterns.

4. Mobility of women in the Villa 20

4.1. The Villa 20

The Villa 20 is a consolidating slum with basic infrastructure and services inside (GCABA, 2017). In the front sector, streets are paved and can be used by cars, while in the back, streets partially consist just of mud or stones. Some blocks inside this sector contain systems of winding, narrow passageways with a very high density. The slum is relatively accessible by road and public transport but has very low values of transport offer per person in terms of capacity per time unit (Salerno, 2012). A tramway, the so-called *premetro*, provides basic mobility in the close living environment and is effectively free of charge (see Fig. 2).

4.2. The women in the sample

The sample consisted of 23 women of ages between 19 and 79 from different parts of the slum. Six are housewives, one retired, and the rest of the women is working; about half of them work outside of the Villa. The majority works in the informal sector. All women have children of their own. Only three live in households without children under the age of 14. Five women raise them without a partner. One woman is currently pregnant. Educations levels range from not having completed primary school to a completed tertiary education, while the majority has dropped out of secondary school. The household sizes differ significantly, from

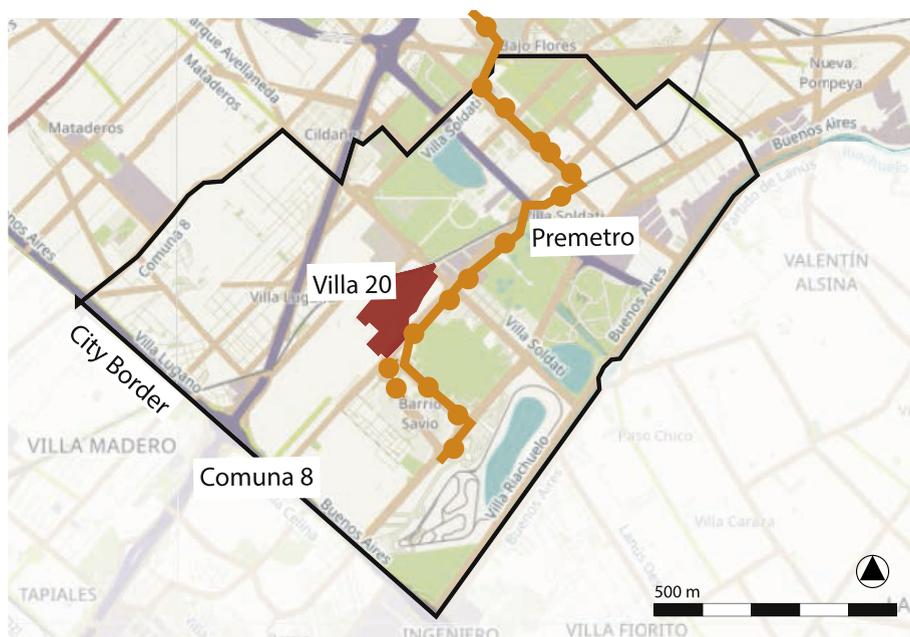


Fig. 2. Location of the Villa in the district 8 (own illustration, © OpenStreetMap contributors).

one person up to nine; Income likewise differs but does not rise with household size. Some women are born in the Villa; others have moved there at some point in their lives. Two women have disabled children. One woman has a disability that makes walking difficult; another has a brain damage.

4.3. Characteristics of daily travel patterns

The daily travel patterns of the interviewed women, especially those with young children, are characterized by a very high share of gender-specific trips, mainly to accompany children to and from school and to go shopping. Almost all the women are responsible for these trips irrespective of their family or employment situation. Since the women make work trips as well as reproduction trips on a daily or almost daily basis, their average number of daily trips is high. Trip chaining hardly plays a role, and many of the trips start or end at home. Recreation trips are scarce and irregular.

Trips are generally short. Especially women without work or those who work from home do in some cases hardly leave the Villa and even less the district. However, some trips are very long in terms of distance and duration. This is the case for trips where the women cannot choose the destination freely. These differences are reflected in daily travel times, which are very high for a few women, very low for others, while an intermediate amount results through the addition of many daily very short trips.

Most trips take place in the direct walking distance of the home. Main modes are walking and public transportation, especially the *premetro* and the bus. Only one woman uses the bike regularly, and trips by private motorized modes only play a role for specific purposes, mostly in the form of the *remis*, an informal taxi service. None of the women has a driver's license.

4.4. Impacts of lands use, transportation offer and urban design

The interviews reveal that several factors determine mobility patterns. Firstly, aspects of the built environment like **land use and transportation offer** play a role, although sometimes not reflected consciously. Social infrastructure close-by enables the fulfillment of basic needs; while at the same time, the lack of certain specialized possibilities and work opportunities make longer trips necessary. The transportation offer extends the direct range of movement, especially since the *premetro* allows access free of charge. Issues of capacity and quality of transport offer and urban design deficits hardly play a role but are commented on. For the woman with a walking disability, the bad quality of sidewalks means that some connections are not usable for her. While for the other women, this does mostly not seem to affect travel patterns, it is an issue of comfort and safety:

“You don't have a choice, you have to walk on the street anyway, because you don't have a sidewalk. And it's a danger, it's a danger for the moms, for the older people, for the little ones who come out of the school, from the pre-school, they should walk on the sidewalks, but there are no sidewalks.” (Female interview partner P 5 Sonia, 2017; own translation)

4.5. Financial restrictions

Money is perceived as a restriction for mobility since it is the reason for many women not to own a car in their family and to avoid taking a *remis*. **Travel expenditure** clearly influences decisions on which connection of public transport to take since interchanging modes make the journey more expensive. However, not all of the women mentioned the issue of money in relation to transport. A correlation was found between the differences in trip lengths and travel radius, and therefore also the cost of traveling, which is very low (or zero) for those not using other modes than the *premetro* and hardly going to other places, and high for those having to make their daily trips in public transportation.

4.6. Long trips as a “necessary evil”

Similarly, the duration of the trip and the lack of reliability of the transportation offer are a restriction for those women traveling frequently and making long trips. Especially for official errands, it is often necessary to keep appointments at exact times. Long trips and especially the lack of reliability of the connections cause frustration since to keep an appointment, travel time must be calculated very generously due to possible disruptions of the service. However, since there usually is no other option, trips are made by public transportation anyhow. Only in the case of recreation trips, it influences the decision whether to take a trip or not (those trips are often sacrificed), in other cases, the choice of destination, route, connection, etc. does not depend on the duration of the travel.

4.7. Tight schedule and constant movement

The high number of reproduction-related trips mentioned earlier lead to difficulties in synchronizing daily activities and restrict available time. Picking up or dropping off the children usually does not take a very long time. However, the schedules are fixed and often create short periods of time in between the trips, which cannot be used for moving away from the house to engage in other activities (as an example, see Figs. 3 and 4). Especially in the case of more than one child that go to different schools, i.e. that start and end at different times, possibilities for work and education are significantly limited and can only be realized under difficulties and with sacrifices.

In the interviews, the women describe this constant movement as exhausting, even though it sometimes just applies to one part of the day and not necessarily means that the women are “time-poor” in an absolute sense.

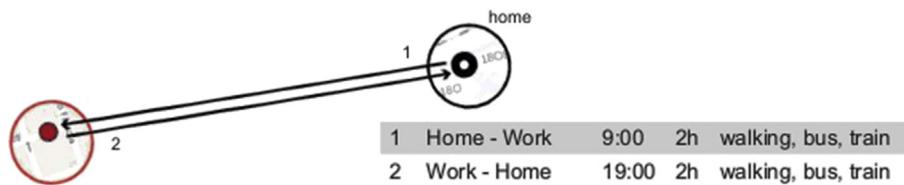


Fig. 3.

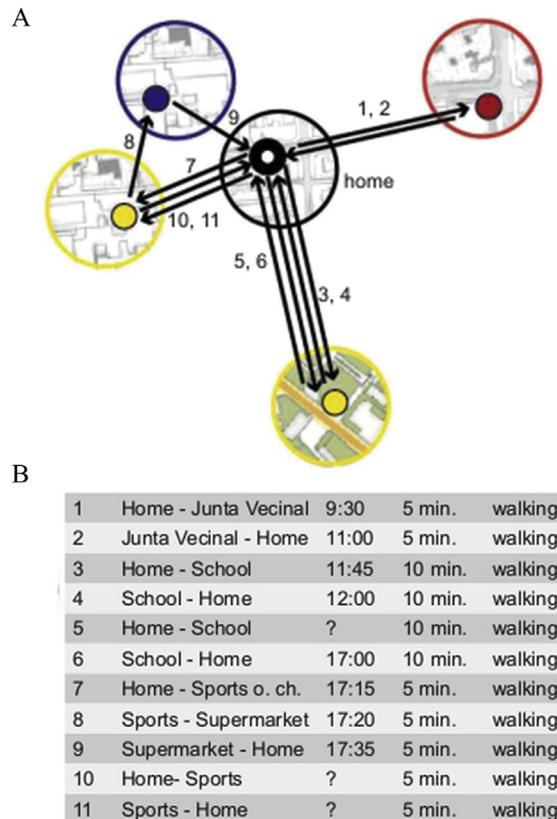


Fig. 4. Different kinds of time restrictions: While Martina (Fig. 3) has two very long trips everyday, Luna's (Fig. 4) day is structured by many short trips close to her house (own illustrations, based on Female interview partner 6 Martina and 23 Luna, 2017).

“Well, fortunately, I have people here who help me, I have my friend, if not, I wouldn't know ... I can't pick up my daughter from school on the days I go to the hospital with my son, it would be impossible to organize it by myself, and I'm not even working now. I used to, I worked at night, but now with my son ... I gave it up, it's impossible with the organization of all those trips, also with my daughter and with the errands ... but you see how it's impossible like this to do anything else, it's like, I'm always on the move!” (Female interview partner P 11 Patricia, 2017; own translation).

4.8. Insecurity as a constant companion

Insecurity was found a critical restriction factor for mobility. Hardly any of the women go out at night or in the evening because of feeling insecure, and if they cannot avoid it, they use specific strategies to protect themselves, like talking to somebody on the phone, asking somebody to pick them up or even taking a *remís*. While a few women reported experiences of violence, almost everybody can tell a story of somebody who has been affected. For reasons of security, the women accompany children to school even at an age where this might in other contexts not be necessary. Many of the women generally avoid specific parts of the Villa, especially those areas with narrow passages that are hard to overlook or areas with lack of lighting. Even though being known in the Villa is perceived as a positive factor, the whole Villa is explicitly perceived as a dangerous place and, more implicitly, the city as a whole as well. One 59-years old woman describes this point:

“Don't go out, don't go out, and don't go out. From the workplace to home, from home [to the workplace]. This is not living; this is not

living, to live like this. The young people want to enjoy themselves, go out, to stroll, drink mate in the street, but you can't, you can't, you can't leave the door open, not open, not closed, not secured, nothing. It's terrible. [...] It makes you sick." (Female interview partner P 6 Martina, 2017; own translation)

4.9. Orientation issues

Another relevant factor was found to be **orientation**. The relevance of orientation problems became apparent in the interviews and the go-alongs when many of the women were not able to orient themselves on the map of their Villa and the surroundings, and often could only explain a trip by naming a bus they take or by referring to landmarks. This finding is supported further by some women who described traveling in the city as challenging due to not knowing it well because they are not used to go out a lot. Many of the women do not rely on maps or their smartphone for orientation, as described by 26-years old student Camila:

"I'm a little scared, because I don't know how to move on the street, you know, and sometimes when they give me strange directions, last time I asked the girl who works in the kiosk over there, she knows me, she explained to me how to go to go [somewhere] [...] and I got lost, and I arrived late. Yes, I did arrive, but I arrived really late, and the secretary tells me that the director had already left [...]. So I tell her, no, give me one closer, here in the Villa, because if they give me one far away, I get lost, and if I get lost, what do I do?" I already tried many times [to use the cellphone], but I got confused ... what an embarrassment! Yes, I got confused, it's like a labyrinth, you have to know how to move ... so what I do is ask, more than anything else, thank god that at least there are helpful people around." (Female interview partner P 10 Camila, 2017; own translation)

4.10. Priority for mobility of care

Quite clearly, many of the factors that the women identified appear to have a restricting effect. Despite the perception of these restrictions, most of the women perceive their own mobility as positive. Most women do not "travel in the head." The most dominant "not-fulfilled need" was finishing the education for those women who have young children and suffer restrictions of schedule. The women set priorities: trips for the education or the health of children are given higher priority than for the women themselves, and recreation or education for themselves can hardly be realized. Compromises are necessary, and dangerous or uncomfortable situations have to be accepted.

5. Discussion

Transport theory commonly appropriates time and cost as the main determinants that explain travel choices. In line with more recent views outlined in the theory section of this paper, we have taken a somewhat broader perspective. We have looked at mobility as the capacity of persons to be mobile in social and geographic space, or as to how entities access and appropriate the capacity for socio-spatial mobility according to their circumstances. The use of this concept to analyze and understand the choices of women in low-income neighborhoods in Buenos Aires leads to a differentiated perspective and some novel insights about the underlying causes of travel choices.

Even though **time and costs** have found to be very common and decisive determinants of travel choices, they **are by far not equally relevant to the women**. This especially applies to financial considerations. We have found that quite some women do not spend money on transport and therefore, despite their small budget do not perceive it as a restriction or an influencing factor. Even though money in some cases influences the modes taken, the decision to walk instead of taking transit for financial reasons does not play a role in this case, since the close-by transport (*premetro*) is effectively free of charge. This also means that, while money right now might not be a relevant factor for many of the women, this would likely change with an extension of travel radius.

The issue of time is similar. Duration of a trip plays a role and those who have to travel for long times perceive it, however, to fulfill needs outside the district is usually due to an active setting of priorities (quality) or an obligatory trip. It is interesting to see that in some cases, the lack of information and reliability of the transportation offer aggravates the problem of long travel times since especially for official errands where punctuality is essential, the extra time has to be calculated to guarantee to arrive on time. Since there are usually no options of choice concerning the mode, long durations and a lack of reliability have to be accepted. Many needs are fulfilled close by – which is also due to the long duration of trips. Since this leads to many women staying in very close vicinity of their home, many of the women do not perceive travel duration as a relevant factor.

The other kind of time restriction works in a completely different way. The fixed schedules that shape the entire day of many of the women are in the current situation more relevant than travel duration. Gendered trips often have to be made several times per day, structure the day, and leave only short time windows. In most cases, distances are short and can be made by foot or the *premetro*. These pre-structured schedules make it difficult to pursue other activities, especially since this would require further trips. As a consequence, those trips often start or end at home. While some women take this for granted and do not mention this as a problem, it is notably often the reason for not working or finishing an education, and it is relevant especially for women with young children.

Security issues affect mobility and travel choices of almost all women. Experiences have an impact, but also women who have not experienced violence stress this point. The women especially mention the lack of security in their immediate vicinity. This may be because it is their main space of movement or because the feeling of insecurity becomes evident in an environment that should be a safe environment. Feelings of insecurity pose restrictions in terms of destinations and whether to travel at all. It structures the time of

movement and has relevance in consideration processes almost universally before taking into account money and time. In some cases, insecurity leads to the situation where women decide to actually spend money to travel, for example taking an expensive *remís*. The insecurity further increases dependencies, since the women have to accompany children.

The feeling of fear is a restricting factor that excludes certain options almost wholly. While a lack of lighting and social control aggravate the problem, the perception of danger clearly goes beyond urban design aspects and seems to be an omnipresent feeling connected with mobility and urban space. Almost all of the women seem to perceive traveling as a necessary evil, something that cannot be avoided, and it appears that many women have a perception of the city as hostile.

A concern of women that seems to be related to security and that has gone rather unnoted in available studies is the lack of perceived capability of **orientation**. The issue of orientation has been discovered relatively late in the research process. However, the testimonials available suggest that the absence of a mental map and the lack of confidence to learn to move to new destinations is a restriction for present and future travels. This has a direct impact on the evaluation of women whether or not to make a trip. It further increases the perception of the city as dangerous. Especially the lack of skills to use a smartphone or a map for orientation shows a lack of competence that reduces motility.

Also, many factors are perceived as unfavorable, although not affecting travel patterns. This is the case when women have no alternative but to travel. Nonetheless, for some women exactly those “details” - e.g., urban design or the quality of public transportation - have a huge impact, depending on personal limitations, experiences, and alternatives.

In summary, the factors that influence daily travel patterns and mobility for women in slums are mainly restrictions, while the offer of infrastructure and transport provides a frame that pre-determines destinations and possibilities. Security is the strongest restriction-factor and affects all the women. Apart from that, travel expenditure, travel durations, fixed schedules, orientation problems, and issues of walkability due to urban design are restrictions. Their relevance and the effect of the different factors differ across the women since their needs and obligations, as well as their access and competence options and their appropriation of all those factors, differ. The restrictions make the fulfillment of needs difficult, and the women have to make compromises regarding quality and comfort. However, they develop strategies to ensure fulfilling at least the most urgent needs, which are usually those connected with reproductive and sometimes productive work. The restrictions further impact the feeling the women connect with traveling, making it something undesirable, and making it difficult to appropriate the urban environment.

Structurally restricted motility has implications for health beyond physical health and beyond providing access to goods and services. It impacts on subjective wellbeing, autonomy, and the ability to adapt and fulfill potentials and obligations, which we identified as aspects of health (chapter 2). As a result of restrictions to motility, many of the women move through the city with a negative feeling, feeling insecure and anxious while taking public transport or walking. Many perceive traveling or the city as such a threat, and are not able to appropriate and identify with the city – an essential ingredient to citizenship. Orientation issues further contribute to this. Furthermore, spatial immobility often leads to mental immobility. Especially in our mobile society, those aspects clearly limit health, and it seems likely they reinforce themselves by limiting future motility.

6. Conclusions and possible recommendations

Looking at the structural restrictions for women, slum dwellers, and especially women living in slums – the intersection of gender and poverty - it becomes evident that “motility represents a new form of social inequality” (Kaufmann et al., 2004 p. 754). Improving the mobility of women is an essential step for healthier and more inclusive communities. The outlined insights into the factors that influence mobility for women in low-income settlements provide some hints that might be relevant for policy in different fields of sustainable development. They likewise leave some open questions worth to be followed up further.

The research shows that interventions should include transport offer and living environment, but also the motility of the women, meaning factors of access, capacity, and appropriation. Infrastructure is just one part of the solution, and capacity building needs to be included in social policies like health-care and education programs – to break the cycle of self-enforcement of low motility. Since the majority of trips take place in the direct living environment of the women, the focus should be set here. The relevance of the *premetro* shows the importance of accessible, low-cost (or free) transportation offers, and this is also the right space to approach issues of orientation and security through small, fast and focused interventions.

Not only the kind of intervention but also how it is done matters. Participation with adequate formats and aimed at specific groups is necessary to access the valuable information needed to conceptualize interventions. Studies like ours with an in-depth approach may be useful, as may processes of *re-urbanización* like the one ongoing in the Villa 20.

Also, an integrated approach with different policy fields and areas is needed. Mobility for the women is not only shaped by transport infrastructure but by public space, land use, reproductive health and education policy, and many more. In turn, improving mobility for low-income women is a topic that is relevant for working towards various SDGs and their specific targets – health, sustainable urbanism and gender equality intersect there. Measures that improve mobility, for example teaching women to use their smartphone or a map for orientation, are likely to directly or indirectly impact health by improving well-being and autonomy, and to contribute to gender equality by improving access and choice.

This research shows the benefits of a qualitative methodology for mobilities research. Most of the results would not have been achievable with other approaches. At the same time, quantitative databases about mobility and travel behavior hardly exist for informal settlements and will be needed in the future. Further questions to follow up include the (possible) role of the bicycle for low-income women, the role of orientation, the connection of insecurity with confidence and local culture, and the changes in mobility in the course of the development of a settlement.

