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WOMEN'S DAILY MOBILITY: CASE STUDY OF CONSTANTINE, ALGERIA

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ABSTRACT
Daily mobility is a crucial issue for women, shaping their access to opportunities and their experience of the city. This paper presents the preliminary results of a study on mobility of women who live and work in Constantine (Algeria). The aim is to provide answers to the following questions: What are the daily mobility patterns (analogies or differences) of women in this city? What types of mobility do women prefer, depending on where they live? What difficulties and/or obstacles do women face in accessing urban space? The adopted methodology is based on a questionnaire survey coupled with observations of the daily journeys of women between the domestic sphere and the urban space. The results showed how access to space is conditioned, managed and even governed by their displacement. Moving around becomes the first conscious act that connects them to space. And within this relationship to space, the notion of mobility is a strong link, one of the 'tools' linking them to the city. Moreover, the 'motor skills' available to the women in Constantine are experienced as both a mean and a constraint in everyday life. For some of them, it is an intermediary mean of accessing spaces both inside and outside the city. This study opens up avenues for research related to understanding urban dynamics and promoting inclusive planning.

KEYWORDS
Mobility, Urban Space, Women, Observation, Interview.


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I Introduction.

Mobility is a key factor in women's quality of life. Although the difficulties encountered by women are greater than those encountered by men, much less is known about the differences between these two groups in terms of mobility. Ensuring smooth and equitable mobility for all is essential to the integration and smooth running of communities. However, existing research suggests that women often face unique challenges and constraints when it comes to their daily commutes and access to transportation options.

Understanding gender-related barriers and disparities to mobility is essential to developing effective strategies and policies that address the diverse needs and experiences of different population groups.

By shedding light on the mobility patterns and barriers faced by women, this study aims to contribute to a better understanding of the complex interplay between gender and mobility, ultimately informing efforts to create more inclusive and accessible urban environments for all residents. Daily mobility is a crucial issue for women, shaping their access to urban opportunities and their experience of the city.

To introduce our approach, we consider it important to discuss the role of mobility in urban space, which is both a vector and a key player in the urban fabric. Mobility serves as an undeniable link between the domestic sphere and urban space, enabling us to interpret a range of forms of territoriality that help define women's "right to the city". This concept, as defined by Henri Lefebvre and further developed by Pierre Bourdieu, highlights the social dynamics that influence how women navigate and inhabit urban environments. As an example, we can cite Bourdieu’s (Bourdieu, 1990) observations of the different ways in which men and women walked in a Kabyle village in Algeria:

The man of honour walks at a steady, determined pace. His walk, that of a man who knows where he is going and knows he will get there on time, whatever the obstacles, expresses strength and resolution... (Bourdieu, 1990).

Studying women’s daily mobility in different cultural contexts is crucial because gender and mobility are inseparable and constantly influencing one another. When thinking about mobility and gender, it is essential to consider the social, cultural, and geographical context. Susan Hanson's work (Hanson, 2010) demonstrated this interplay by identifying two critical strands of thought. The first question, "How does mobility shape gender?" explores how processes of mobility and immobility illuminate the shifting power relations embedded in gender. The second question, "How does gender shape mobility?" examines how gendered processes create, reinforce, and alter patterns of daily mobility. Understanding these dynamics is vital for addressing gendered inequalities and enhancing women's rights in urban spaces.

This work was motivated by the observation of a significant change in the Algerian urban landscape, marked by the increasing presence of women in various spheres throughout the city. This shift has led to an upheaval in women's practices, which is now visible in all Algerian cities. Despite these noticeable changes, there is a paucity of research involving the notion of gender in urban studies in Algeria. The results of research carried out during my doctorate highlighted this gap and revealed the importance of examining mobility as a key factor. Today, I am eager to develop this avenue further, focusing on how mobility shapes and is shaped by the evolving role of women in urban Algerian contexts.

The study has a main objective is to highlight mobility of women who live and work in Constantine (Algeria).

The main research questions are: What are the daily mobility of women in Constantine? What types of mobility do women prefer? What difficulties and/or obstacles do women face in accessing urban space?

I.1. Literature review on gender and mobility.

Literature has extensively investigated the relationship between gender and mobility, paying particular attention to the differences between men and women and to gender-specific transport mode choices.

Robin Law (Law, 1999) offers an extensive and multidisciplinary synthesis of scholarly research
on gender and mobility since the early 1970s, drawing from a diverse array of fields including the social sciences, human geography, urban planning, and environmental studies. It provides a comprehensive overview of the vast and rich body of literature exploring the intricate intersections between gender dynamics and mobility’s in various contexts.

Key works in this field include "Territoires du quotidien et espaces sexués. Du voisinage résidentiel aux espaces d’anonymat" (Coutras, 2008), which explores everyday territories and gendered spaces through the case of the “unplanned and exceptional” interactions that men and women establish in anonymous spaces. It deals with those which, in opposition to or as a complement to everyday interactions, represent the other side of the coin. The work entitled "Gender and Mobility: New Approaches for Informing Sustainability" (Hanson, 2010) offers innovative perspectives on how gender dynamics influence sustainable mobility practices.

Additionally, the book "Gendered Mobilities: Towards an Holistic Understanding" (Cresswell & Uteng, 2016) offers a fresh perspective by applying the emerging "mobility turn" in social sciences to explore the intricate connections between mobilities and gender. It delves into a wide-ranging array of issues, underscoring the inherent complexity of mobility as a multifaceted phenomenon. The central argument put forth is that social/spatial/existential mobility should be recognized as a distinct capability, a conceptualization that carries profound implications for research on justice and gender across numerous scholarly domains.

More recently, the study named "Gender Gaps in Urban Mobility" (Gauvin & al, 2020) investigates urban mobility through a gendered lens by integrating commercial and open data sources for the city of Santiago in Chile, by analyzing call detail records from a large cohort of anonymized mobile phone users to unveil a distinct gender divide in mobility patterns. The findings reveal that women tend to visit a fewer number of unique locations compared to men, and allocate their time less evenly across these locations. This highlights the persistent disparities in urban transportation experiences between genders, underscoring the need for gender-sensitive urban planning.

In this section, a review of the main existing research and works exploring the relationship between gender and everyday mobility in Algeria is presented. It aims to situate the subject of study in its local context, and to highlight the specific issues and challenges facing Algerian women in terms of access to and use of urban space. The relationship between gender and mobility in Algeria has been explored by a few scholars, highlighting the unique challenges and dynamics faced by women in urban spaces. This review synthesizes key works that have contributed to our understanding of how gender influences spatial practices in Algerian cities.

Zineb Benzerfa-Guerroudj (Benzerfa-Guerroudj, 1992) examines the presence of Algerian women in public spaces, addressing how architectural designs and societal norms have historically limited their visibility and participation. Her study underscores the cultural and structural barriers that have shaped women's mobility in Algeria. Similarly, the impact of gender segregation on urban spaces, contributing to the anthology "La Place des femmes", Bekkar's analysis (Bekkar, 1995) highlights how urban planning and social expectations reinforce gendered spaces, often restricting women's access to various urban areas.

The study "Fabrique de la ville et pratiques spatiales dans la ville nouvelle Ali Mendjeli (Constantine): Une approche par le genre," conducted by Nawel Aouch-Bouakkaz and Salah Eddine Cherrad (Aouch-Bouakkaz & Cherrad, 2016) investigates how urban planning in new cities affects women's daily lives and mobility. The authors argue that while new urban spaces offer opportunities for greater mobility, they also perpetuate existing gender disparities through design and spatial organization.

Ghaliya Djelloul (Djelloul, 2018) explores the spatial mobility of women on the outskirts of Algiers in her article "Entre enserrement et desserrement, la mobilité spatiale des femmes en périphérie d’Alger," published in Métropolitiques. Djelloul's research highlights the dual forces of enclosure and release that characterize women's mobility in these peri-urban areas. Her findings suggest that while women are increasingly present in public spaces, their movements are still heavily influenced by social norms and safety concerns.

Recent studies have continued to investigate the complexities of gender and mobility in Algeria, such as "Se mouvoir, s’arrêter, s’afficher dans l’espace public: les stratégies de mobilité des Algéroises" (Zitoun, Boussaïd, Bentoudert, & al, 2020) which provides a detailed analysis of the strategies employed by women in Algiers to navigate public spaces. Their research reveals the adaptive techniques women use to assert their presence in the city while managing societal expectations and potential threats.
Moreover, this collective work broadens the scope by examining the intersection of gender and mobility across various Algerian cities. This study underscores the ongoing gender gaps in urban mobility, advocating for more inclusive urban policies that address the specific needs of women.

The literature on gender and mobility in Algeria presents a nuanced picture of how women interact with urban spaces amidst cultural and structural constraints. From historical analyses to contemporary studies, these works collectively highlight the persistent challenges and evolving strategies of Algerian women as they navigate their cities. By understanding these dynamics, we can better inform urban planning and policy-making to create more inclusive and equitable urban environments.

II Materials and methods.

The study was conducted with a group of 62 women over a six-month period to ensure a comprehensive understanding of the variations in mobility patterns. The research was designed in two distinct stages to leverage both quantitative and qualitative methodologies for a holistic understanding of the subject matter.

The aim of the first stage of quantitative research was to collect numerical data and identify trends and patterns in women's mobility. To this end, an online questionnaire was distributed via Google Forms. Participants were a diverse sample of women from different urban areas of Constantine, Algeria. Data was collected using multiple-choice and Likert-scale questions, covering daily mobility practices, transport mode choices, travel frequency and perceived safety in different urban spaces. The quantitative stage involved the distribution of a structured questionnaire through Google Forms. This platform was chosen for its accessibility and ease of use, allowing for efficient data collection and management. The questionnaire was designed to cover key aspects of mobility, including:

- Daily mobility patterns
- Preferred modes of transport
- Accessibility difficulties in urban space
- factors that most influence your choice of daily mobility

The women surveyed completed the questionnaire, which was sent out and shared, with the following main sections:

I. Access to urban space
II. Types of Mobility
III. Constraints and aspirations

The preliminary results from the quantitative stage were analyzed using statistical methods to identify significant patterns and correlations. The data was interpreted to understand the overarching trends in women's mobility, such as:

- Common transport modes used by women to access space
- Key factors influencing transport choice
- The main obstacle to walking and cycling

The second stage of qualitative research aims to gain deeper insights into women's experiences and perceptions of their mobility. To achieve this objective, in-depth interviews and focused group discussions will be conducted. Scheduled to take place in September 2024, this phase will involve a selected group of participants from the first quantitative stage, chosen on the basis of their responses to ensure a representative sample. Data will be collected through open-ended questions and thematic discussions designed to explore the personal and social factors influencing women's mobility, including cultural norms, safety concerns and urban infrastructure.

These initial findings will inform the qualitative stage, guiding the development of interview guides and discussion topics. The combination of quantitative and qualitative data will provide a comprehensive understanding of the mobility experiences of women in Algerian urban contexts, ultimately contributing to more gender-sensitive urban planning and policy-making.
III Results.

According to the data collected, 55.5% of women in Constantine are under 40. In terms of occupation, 29.6% of women are students and 22.2% are employed. In terms of residence, 59.3% of respondents live in downtown (Figure 1).

![Group profile](Constantine, Algeria)

- 55.5% under 40 ans
- 29.6% students
- 22.2% employees
- 60% downtown

**Figure 1. Rate of access to urban space by women.**

Source: Survey 2023-2024.

In Constantine, for the first section related to access to space, we can make the following observations (Figure 2):

- 74.1% of women rated their access to spaces as moderately difficult, compared with only 11.1% who rated it as easy.
- A small percentage (14.8%) rated access as “Difficult”.

Thus, the results indicate that, while access is not considered particularly difficult by most, it is not generally perceived as easy in Constantine either. The majority of respondents fall into an intermediate zone, considering access to the urban space to be of moderate difficulty.

These perceptions may be influenced by factors such as urban planning, transport infrastructure, population density and socio-economic disparities within the city.

![Figure 2. Rate of access to urban space by women.](Source: Survey 2023-2024.)
Further analysis, combining this data with other contextual information, would enable us to better understand the specific reasons behind these assessments and identify potential areas for improvement to facilitate access to urban space in Constantine.

In her study of gender relations in Algiers, Ghaliya Djelloul (Djelloul, 2018) begins by analyzing interior spaces in order to identify the prior constraints affecting women's outward spatial mobility. She describes a dual dynamic of confinement and liberation that governs women's mobility: faced with the strategy of expanding the domestic order into urban public spaces, justified by religious normativity, women develop subtle strategies to protect themselves when they move around town.

IV. Discussion.
Constraints on women's mobility in Constantine and Rome.
From the results presented (figure 3) for the question on gender-related difficulties in accessing urban space in Constantine, we can make the following observations:
1. A large majority of respondents (77.3 %) said they had encountered difficulties in accessing urban space because of their gender.
2. Only 22.7% of respondents had not encountered such gender-related difficulties.

These figures are quite striking, and reveal that gender-based accessibility problems in urban spaces in Constantine seem to be a reality for a large part of the population, particularly for women. This underlines the importance of taking the gender dimension into account in urban planning and development, in order to guarantee equitable access to the city's various spaces and services for all citizens, regardless of their gender.

The reasons for these difficulties can be manifold, ranging from socio-cultural norms and safety issues to a lack of suitable infrastructure or adequate public transport. A more detailed analysis, combining this quantitative data with qualitative studies, would enable us to better understand the specific challenges encountered and identify concrete courses of action to promote a more inclusive city accessible to all, regardless of gender.

In order to explore in more depth, the obstacles and difficulties women face in their daily travels, we asked them to indicate the main obstacles they encounter in terms of accessibility to urban space in Constantine due to their gender. Based on the answers provided by the women surveyed (figure N°4), the following interpretations can be made:
1. The absence of suitable infrastructure (sidewalks, crosswalks, etc.) is the most frequently cited obstacle, with 37% of responses.
2. A feeling of insecurity and the presence of harassment tied for second place, each accounting for 29.6% of responses.
3. Lack of lighting does not appear to be a major problem, with 0% of responses in this category.
4. A small proportion (3.7%) mentioned other unspecified obstacles, such as:
These results highlight that the main challenges concern both physical aspects (inadequate infrastructure) and aspects related to feelings of safety and harassment in public spaces. Urban planning seems to be a crucial point for improvement, but it is also essential to tackle the issues of safety and harassment to enable equitable access to the city for all, regardless of gender. A comprehensive approach combining physical interventions (landscaping, lighting, etc.) and efforts in terms of awareness-raising, safety enhancement and anti-harassment seems necessary to meet these multidimensional challenges.

According to the figure 5, the following observations can be made regarding the main perceived disincentive to walking and cycling:

1. The most frequently cited obstacle is the lack of safe pedestrian facilities, with 40.7% of responses.
2. The second most-mentioned barrier is the lack of bicycle lanes, accounting for 29.6% of responses.
3. Only 18.5% of respondents cited personal attitude as the main obstacle.
4. No respondents (0%) cited lack of nearby services and activities as the main obstacle.
5. A small proportion (11.1%) cited other unspecified obstacles.
These results clearly show that the main constraints to active mobility (walking, cycling) in Constantine are linked to shortcomings in infrastructure and facilities dedicated to pedestrians and cyclists. The feeling of insecurity linked to the lack of suitable infrastructure seems to be a determining factor, much more so than the lack of local services or personal attitudes.

This underlines the need to invest in the development of safe, secure and continuous pedestrian and cycling infrastructures to encourage these sustainable and active modes of travel in Constantine.

The following section (figure 6) illustrate the constraints (as women see them) but above all highlights the higher frequency of use of the terms insecurity and harassment. This is in line with the results of similar studies in terms of the difficulties encountered in the public space, whether in the Algerian or international context.

![Figure 6. Word cloud of main obstacles experienced by women when travelling in the city. Source: Survey 2023-2024.](image)

Based on the word cloud, it appears that the main obstacles encountered by women when traveling in the city revolve around issues of harassment, insecurity, and lack of safety. Words like "harassment," "insecurity," "unsafe," "alone," "physical," "verbal," and "night" stand out prominently, suggesting concerns about personal safety, especially when traveling alone or during nighttime hours.

The words "public transport," "lack," and "spaces" also feature prominently, indicating potential issues with insufficient or unsafe public transportation options and a lack of secure public spaces for women to move freely. Other words like "traffic," "pedestrians," and "vehicle" hint at challenges related to navigating urban traffic and transportation infrastructure that may not be adequately designed or maintained with women's safety and accessibility in mind.

Overall, the word cloud highlights that the main obstacles for women traveling in the city seem to be deeply rooted in gender-based safety concerns, feelings of insecurity, and inadequate or unsafe infrastructure and public spaces. Addressing these issues through improved urban planning, transportation policies, public awareness campaigns, and stronger security measures could potentially help create a more inclusive and accessible city for women.

Preferences of women for mobility in Constantine.

Based on the results presented for the city of Constantine, the following observations can be made concerning the modes of transport mainly used (figure 7):

1. By far the most popular mode of transport is the private car, with 70.4% of respondents.
2. Use of public transport (bus, metro, etc.) is relatively low, with only 14.8% of respondents.
3. Active modes of transport such as cycling (3.7%) and walking (7.4%) are used very little.
4. A small proportion (3.7%) mentioned other unspecified modes of transport.
The graph illustrates a very marked dependence on the car for travel in Constantine. The low use of public transport and active modes raises questions about the accessibility, reliability and safety of these alternatives to the private car.

This predominance of the car also raises challenges in terms of environmental impact, road congestion and accessibility for populations without access to a private car. To encourage more sustainable and inclusive modes of transport, it seems necessary to improve the supply and quality of public transport, as well as to develop safe and connected pedestrian and cycling infrastructures. Incentives and awareness campaigns could also be envisaged to promote these alternatives to the car.

In the aim to gain a better understanding of the motivations and trade-offs made by women in their daily mobility choices, according to their particular priorities and constraints. We have asked them about the main factors influencing respondents' choice of commuting mode. The answers provided will make it possible to analyze the relative importance given to different parameters such as time, cost, comfort, practical aspects and environmental considerations.

Examining the responses, it is evident that (figure 8):
1. The most frequently cited factor is speed, with 40.7% of respondents. This suggests that speed and travel time are primary criteria in choosing a mode of transport.
2. The second most important factor is comfort, mentioned by 25.9% of respondents.
3. Safety comes third with 18.5% of responses, indicating that it remains a significant factor, but not the most decisive.
4. Cost (7.4%) and sustainability (3.7%) appear to be minor considerations for most respondents in their choice of daily transport.
5. A small proportion (3.7%) cited other unspecified factors.
This predominance of speed and comfort as criteria could partly explain the high use of the private car observed earlier in Constantine. Public transport and active modes may be perceived as less fast and comfortable. However, the relative importance attached to safety also highlights the need to improve the safety of alternatives to private vehicles (public transport, pedestrian/cycling infrastructure) to make them more attractive. To promote more sustainable modes, it could be beneficial to raise awareness of their advantages in terms of cost and sustainability, but also in terms of safety.

V Conclusion.

This study presents the initial results of research into the mobility of women living and working in Constantine, Algeria. The main objective is to raise the visibility of women's mobility. Otherwise, it targets to identify the daily mobility patterns among women in this city, to investigate the difficulties and/or obstacles faced by women in accessing urban spaces, and finally to understand the types of mobility modes preferred by women.

The methodology employed to address these objectives is based on a questionnaire survey examining women's daily journeys between their domestic sphere and the urban space. By collecting data directly from women through this survey, the research seeks to gain insights into their lived experiences and perceptions surrounding their mobility practices within the urban space.

The profile of the studied population is mainly made up of urban women aged under 40, with a balanced distribution between the different socio-economic levels. With regard to the modes of transport used, the results reveal a clear preference for the use of the private car among the participants, although regular use of other modes was observed. However, a small number of women reported using bicycles in Constantine, which is not representative of the reality in the city. In terms of motivations and constraints, the main reasons for choosing a specific mode of transport were to save time and reduce stress. On the other hand, the principal constraints include safety, harassment and, to a lesser extent, infrastructure quality.

Women's mobility in Constantine is linked to their daily activities. At this stage, the study sheds light on women's mobility practices. However, it remains partial and is worth exploring further in order to reflect the reality experienced by women in this city. The quantitative part of the survey enables us to find out what women think about their daily mobility practices. It will be necessary to supplement it with the qualitative one through observations of what women actually do and in-depth interviews to understand what they say about their practices.
As a conclusion of this research, mobility shapes women's urban life, and women’s urban life in turn shapes their mobility. A thorough understanding of this reciprocal relationship is crucial to promoting a truly inclusive city accessible to all.

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