Shared Micro-mobility Adoption: A Qualitative Investigation of User Motives for Electric Scooters and E-Bicycles

Khouloud Gammoudi[1*], Kaouther Saied Benrached[2]

[1]PhD in Marketing Faculty of Economic and Management of Tunis Research Laboratory: Business and Marketing Research (ERMA)

[2]University Professor Faculty of Economic and Management of Tunis Research Laboratory: Business and Marketing Research (ERMA)

***Corresponding Author**

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ABSTRACT

In response to environmental challenges and increasing urban congestion, micro-mobility emerges as a sustainable solution for short-distance urban travel. It reduces the carbon footprint while offering speed and flexibility. This study investigates user motivations for adopting electric bicycles and electric scooters based on 21 semi-structured interviews. The results reveal four key motivations: utilitarian (practicality and time savings), environmental (reducing ecological impact), hedonic (enjoyment and travel comfort), and social (peer influence and social image). The adoption of micro-mobility extends beyond mere practical function; it reflects a considered choice that combines efficiency, ecological responsibility, and social valuation. These findings identify the determining factors for supporting the expansion of these transport modes and offer strategic guidance for designing urban policies and innovative, sustainable mobility solutions tailored to the actual needs of users.

Keywords: shared micro-mobility – electric bicycles and scooters – motivations – usage .

INTRODUCTION

Cities worldwide face increasing urban congestion, driven by rapid urbanization and a continuous rise in the number of private vehicles. This situation leads to frequent delays, heightened air pollution, noise disturbances, and considerable pressure on transport infrastructure (Cheng., 2024). Confronted with this urgency, rethinking urban mobility is no longer an option but an absolute necessity to ensure sustainable and livable cities (Kalašová & Čulík., 2023). In this context, micro-mobility presents itself as an innovative and promising solution. It encompasses lightweight transport modes such as bicycles, electric scooters, and other micro-vehicles, whether privately owned or shared. These new forms of urban mobility enable rapid, flexible travel suited for shortdistance trips and contribute to reducing dependence on private cars and the ecological footprint of cities (Kazemzadeh & Ronchi, 2022). Their growth is accompanied by significant technological advances, particularly the development of connected rental systems and smart applications that facilitate the management and optimization of travel.

In Tunisia, micro-mobility is developing progressively, but through modalities distinct from those observed in European countries. In Europe, the use of light vehicles such as electric scooters or bicycles relies on digital platforms that facilitate geolocation, reservation, and instant unlocking via a mobile application. The Tunisian model, however, remains largely based on a centralized approach. In practice, users must go to a rental point or physical store to rent the scooter or bicycle and then return it to the same location at the end of their journey.

Although numerous studies have already analyzed the impact of shared micro-mobility (electric bicycles, scooters, and mopeds) on the environment in developed countries, the phenomenon remains emergent in Tunisia.

This underscores the importance of the present study for better understanding user behaviors within this specific context. Against this backdrop, the current research examines the determinants for adopting shared micromobility, specifically the use of shared electric bicycles and scooters by Tunisians. It aims to answer the following question: *What factors motivate individuals to adopt and use shared electric bicycles and scooters?* The objective is to understand the motivations guiding the choice of these transport modes and the levers likely to foster their integration into daily mobility. To achieve this, a qualitative study, based on semi-structured interviews with users, will be adopted. This methodology will enable a deep understanding of the motivations for using electric bicycles and scooters and provide concrete pathways to encourage regular and environmentally respectful usage.

LITERATURE REVIEW

The Sharing Economy and Shared Micro-Mobility

The sharing economy constitutes a genuine paradigm shift from traditional models based on the ownership of goods (Schlagwein et al., 2020). It promotes the utilization of underused resources and transforms sometimes idle assets into collective services capable of meeting an immediate need (Felländer et al., 2015). The principle of sharing applies to several domains, such as accommodation (Airbnb), vehicles (car-sharing, ride-sharing), and material goods (tools, DIY, or electronic equipment), and has more recently expanded to urban mobility with micro-mobility.

Shared micro-mobility now represents one of the major innovations in urban transport. It refers to the collective use of lightweight, low-speed vehicles such as bicycles, scooters, and mopeds, which allow users to travel without assuming the costs and constraints associated with individual ownership (Cohen & Shaheen., 2018). These micro-vehicles, typically weighing less than 350 kg and limited to 45 km/h, offer multiple advantages, particularly in terms of flexibility, rapid access, efficiency, noise reduction, and limited use of urban space (Yanocha & Allan., 2019). From this perspective, free-floating electric bicycle and scooter services are fully aligned with the growing dynamic of the sharing economy applied to mobility. They constitute a recent evolution of shared mobility systems, extending and enriching the experiences of car-sharing and bike-sharing developed in recent years (Weschke., 2022). Their massive deployment in many major cities across America, Europe, and Asia reflects their strategic role in contemporary transport networks. These solutions are particularly well-suited to addressing first- and last-mile travel needs. This refers to trips between home or workplace and public transport stops, areas often difficult to access by conventional vehicles, and they help facilitate access to collective transport in areas often poorly served by traditional vehicles (Tzouras., 2025).

Behavior related to the use of free-floating electric bicycles and scooters remains largely dependent on individual perceptions, local constraints, and the socio-cultural specificities unique to each territory. These observations justify the implementation of an in-depth empirical investigation to identify the factors that structure the daily use of these solutions. It is within this perspective that the present methodological approach, detailed below, is situated.

METHODOLOGY

To address the research objective and understand user motivations for shared electric bicycles and scooters, an exploratory qualitative study was conducted with a sample of 21 users of free-floating electric scooters and bicycles. The participants, aged 17 to 42, consisted of 11 men and 10 women from diverse professional backgrounds, which enabled the collection of a variety of perspectives and usage patterns. Semi-structured interviews served as the data collection tool, allowing the discussion to be guided around predefined themes while giving participants the freedom to express their perceptions and motivations. The interview guide (Table 1) was structured around three main areas: travel habits, motivations regarding shared micro-mobility, and usage behavior.

A preliminary syntactic analysis of the corpus was performed to examine the structure of the respondents' discourse. This step, based on a careful reading of the verbatim transcripts, enabled the identification of recurrent

expressions, discursive oppositions, and initial linguistic patterns (Delacroix et al., 2021). It constituted an essential preparatory phase prior to the thematic analysis, providing an initial understanding of how individuals construct and articulate their discourse concerning their micro-mobility practices and perceptions.

To analyze the collected data, a thematic content analysis was employed, in accordance with the methodological recommendations of Thiétart (2025). This technique facilitated the identification and grouping of recurring ideas within the discourse. The themes retained for analysis were those mentioned at least twice by the respondents.

Table 1: The Interview Guide

Theme	Objectives	Questions
Travel Habits	To understand the respondents' general mobility context.	Can you tell me about your daily moiblity habits? Which means of transport do you use most frequently? In which situations do you choose an electric scooter or bicycle?
Usage Motivations	To explore the full range of motivations that lead users to adopt these transport modes.	What motivates you to use an electric scooter or bicycle rather than another means of transport? What do you like or find appealing about this mode of travel? What does using this type of transport represent for you? What do you feel when you use them? Why do you continue to use them today?
Comportement d'usage	To understand the respondents' current usage behavior, their intention to continue using electric scooters or bicycles, and their willingness to recommend these transport modes to others.	How frequently do you currently use an electric scooter or bicycle? In which situations or for what types of trips do you use them most often? Do you plan to continue using them in the future? Why or why not? Would you recommend the use of an electric scooter or bicycle to other people? Why?

The interviews were conducted in person and lasted an average of 25 to 40 minutes. All interviews were recorded with the prior consent of the participants and subsequently transcribed in full to ensure a rigorous analysis of the discourse. The data analysis relied on a thematic analysis method, which involves identifying, coding, and grouping recurrent ideas into conceptual categories. This approach enabled the emergence of the explanatory factors that influence the adoption of shared mobility.

RESULTS

The analysis of interviews conducted with 21 users highlighted several key factors influencing the use of shared micro-mobility services. These results reflect an evolution in mobility behaviors, characterized by a search for practicality, accessibility, and flexibility, alongside a growing commitment to more sustainable and environmentally responsible transport solutions.

Utilitarian Motivation: Time Savings and Practicality

Users indicated that electric scooters and bicycles enable them to travel quickly and without physical exertion for daily trips, such as grocery shopping or accessing nearby services. This flexibility makes urban transport more practical and better suited to immediate needs. As explained by Mohamed, age 22: "*I rent the scooter to do all my shopping in one trip, at the supermarket or the pharmacy, and I also get to let off a little steam; it's much simpler and more pleasant than taking the car.*" For him, as for many users, these transport modes offer time savings, allowing them to avoid traffic and the constraints associated with parking, and to complete multiple tasks in a single journey. Daily commutes thereby become faster, simpler, and more efficient.

Users appreciate the freedom to travel at their own pace, choosing their own route and departure time. This autonomy allows them to organize their trips according to their personal needs and daily contingencies, without relying on buses or taxis. As Houda (age 26) emphasizes: "*I like being able to leave whenever I want and take the fastest route, without having to wait for a bus or chase after a taxi.*" According to users, this independence makes daily mobility less stressful and more enjoyable. The simple ability to decide one's own route provides a sense of control and comfort that transforms an ordinary trip into a fluid and personalized experience. It is this simple ,yet valuable freedom that encourages users to regularly choose shared electric bicycles or scooters.

Hedonic Motivation

The interviews reveal that the use of electric scooters and bicycles extends beyond mere transportation to become an experience that is a source of pleasure and well-being. These transport modes help reduce daily stress and integrate light physical activity into daily commutes. This combination makes mobility a solution that is simultaneously practical, enjoyable, and beneficial for health. Participants describe these trips as freer and more dynamic than those made using traditional transport. According to Salma: "*Using the electric bike relaxes me and allows me to get a bit of exercise during my city commutes,*" while Ahmed states: "*Riding a scooter is practical, it lets me blow off steam and makes my trips more pleasant.*" For Mehdi (age 20), "*A short daily ride on a scooter with my friends allows me to get around, enjoy the city, and relax at the same time.*" The hedonic dimension associated with using these services appears as a key factor in their adoption, transforming daily commutes into more stimulating and enjoyable moments.

Environmental and Ethical Motivation

Environmental awareness emerged as one of the fundamental factors for using shared electric scooters and bicycles. Several users stated a desire to reduce their personal carbon footprint and contribute to the fight against pollution and global warming. Sami (age 39) illustrates this point by declaring: "*I try to limit my car trips to favor more ecological alternatives.*" This ecological sensitivity is accompanied by an adherence to the logic of the circular economy, where sharing a single vehicle among multiple users is perceived as a responsible act. As Selim (age 35) emphasizes: "*Using shared vehicles helps optimize available resources and reduce waste.*" Finally, some users integrate this shared mobility into a sustainable lifestyle, combining ecological practices with urban travel. Maher confirms: "*I rent an electric bicycle at least once a week because it aligns with my sustainable lifestyle and my ecological choices.*"

Social Motivation

During the interviews, participants mentioned that the use of shared electric scooters and bicycles is not limited to practical aspects. For several of them, these transport modes also, allow them to affirm their belonging to a modern, connected urban generation that is open to new ways of living. As Manel (age 17) indicates: "*When I rent a scooter, it's also to show that I am part of a generation that lives differently in the city and adopts innovative practices.*" This social motivation fits within a contemporary perspective of collaborative consumption and the sharing economy, where the adoption of micro-mobility transcends a purely utilitarian function. It offers users a means to express their identity, position themselves within a modern urban community, and participate in innovative and shared practices.

Managerial Implications

The findings of this study enable the proposal of concrete recommendations to strengthen the development of shared micro-mobility in Tunisia, for both public authorities and service operators. Public authorities can foster this evolution by implementing suitable public policies, clear regulatory frameworks, and incentives for the adoption of sustainable transport modes.

For electric scooter and bicycle service managers, opportunities lie in optimizing vehicle accessibility and availability, as well as in enhancing the user experience through innovative digital solutions. These include booking applications, real-time tracking, flexible pricing offers, and personalized services. Furthermore,

communication and awareness campaigns can highlight the environmental and practical benefits of these transport modes, thereby encouraging regular use. By combining these initiatives, public and private stakeholders can establish shared micro-mobility as a central pillar of a modern, sustainable, and efficient urban mobility system, capable of addressing the environmental and socio-economic challenges faced by cities.

CONCLUSION

This study has illuminated the motivations underlying the use of shared electric bicycles and scooters and offers perspectives for developing strategies that promote the use of these innovative transport modes. A qualitative study involving 21 users identified that the primary motivations are utilitarian, hedonic, social, and environmental. These results demonstrate that the adoption of these mobility modes is not limited to functional needs but is also embedded in personal, social, and sustainable considerations. The findings offer pathways for developing strategies and policies aimed at encouraging regular, sustainable, and environmentally respectful usage.

Despite its contributions, this study has certain limitations. It is based on a limited qualitative sample, which restricts the generalizability of the results to the entire population of shared electric scooter and bicycle users. Furthermore, the collected data reflect motivations at a single point in time, preventing an understanding of their evolution over the long term.

To strengthen these findings, it would be pertinent to conduct longitudinal research to track the evolution of motivations and behaviors over the long term, alongside quantitative studies to measure the relative importance of different motivations and to generalize the conclusions. Such work would contribute to a better identification of the levers capable of fostering regular, sustainable, and environmentally respectful usage. In particular, it would provide important strategic recommendations for urban policymakers and micro-mobility operators seeking to promote alternative, efficient, and ecological transport modes.

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APPENDICES

Appendix 1:

Table : Example of the Lexical Analysis of Usage Motivations for Micro-Mobility Among Users

Interview	Gender	Age	SocioProfessional Category	Verbatim	Themes
Manel	Female	**17**	Student	*"When I use the scooter, it is also to show that I belong to a generation that lives differently in the city and adopts innovative practices."*	**Social**
Ahmed	Male	**25**	Employee	*"I go out in a group on scooters to let off steam and enjoy the journey together."*	**Hedonic**
Asma	Female	**22**	Student	*"It is cool and modern to use the shared bike, it shows that I am up-to-date and modern."*	**Social**
Sami	Male	**39**	Sales Agent	*"Trips on an electric bicycle are pleasant, they relax me and allow me to stay physically active."*	**Hedonic**
Nour	Female	**19**	Student	*"...It is fun and allows me to enjoy the journey."*	**Hedonic**
Hanen	Female	**26**	Administrative Assistant	*"It is fast, flexible, and I save time every day."*	**Utilitarian**
Mohamed	Male	**22**	Student	*"I rent the scooter to do all my shopping in one go, at the supermarket or the pharmacy, and I also take the opportunity to let off a little steam; it is much simpler and more pleasant than taking the car."*	**Hedonic**
Selim	Male	**35**	Dentist	*"Using shared vehicles makes it possible to optimize available resources and reduce inefficiency."*	**Environmental**
Tarek	Male	**41**	Business Owner	*"I prefer the shared bicycle because it is economical and environmentally friendly."*	**Environmental**
Mehdi	Male	**20**	Student	*"A short daily ride on a scooter with my friends allows me to get around, enjoy the city, and relax at the same time."*	**Hedonic**