Original Article
ISSN (Online): 2582-7472

ShodhKosh: Journal of Visual and Performing Arts
June 2024 5(6), 1632–1637

UNDERSTANDING CONSUMER INTENTIONS AND PERCEPTIONS OF ELECTRONIC SCOOTERS: A STUDY AMONG WORKING WOMEN

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DOI
10.29121/shodhkosh.v5.i6.2024.4936

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

ABSTRACT

The growing popularity of electronic scooters (e-scooters) as a sustainable and convenient urban transportation option has drawn significant attention in recent years. Despite this trend, there is limited research focusing on the perspectives of specific demographic groups, particularly working women. This study explores the factors shaping working women's intentions to use e-scooters, including convenience, cost, safety, environmental awareness, and societal attitudes. Using a mixed-methods approach that combines surveys and interviews, the research examines insights from women in both urban and suburban areas. The findings reveal a strong emphasis on safety and affordability, along with varying perceptions about the practicality of e-scooters for daily commutes. These results provide valuable recommendations for developing inclusive, gender-sensitive transportation policies and products.

Keywords: E-Scooters, Working Women, Transportation Preferences, Consumer Behaviour, Sustainable Mobility, Gendered Perceptions

1. INTRODUCTION

The increasing demand for sustainable and efficient urban transportation has driven interest in innovative mobility solutions like electronic scooters (e-scooters). These vehicles have become a prominent option due to their affordability, environmental benefits, and ease of use. While the broader adoption of e-scooters has been extensively studied, there is a lack of focused research addressing the experiences and perspectives of working women—a key demographic in urban commuting patterns.

For many working women, transportation choices are influenced by factors such as cost, time efficiency, safety, and adaptability to different environments. Although e-scooters offer unique advantages, challenges such as safety concerns, weather limitations, and societal norms may influence their acceptance and usage. Understanding these considerations is crucial to ensure that mobility solutions are accessible and inclusive.

This study investigates the intentions and perceptions of working women toward e-scooters, highlighting the key factors that encourage or deter their adoption. By analyzing data collected through surveys and interviews, the research provides a comprehensive view of the opportunities and challenges faced by this demographic. The findings aim to

inform stakeholders, including policymakers, urban planners, and manufacturers, on how to create more equitable and practical transportation systems.

1.1. STATEMENT OF THE PROBLEM

The shift towards sustainable and efficient urban transportation has brought electronic scooters (e-scooters) to the forefront as an alternative to traditional modes of commuting. While e-scooters are gaining popularity globally, their adoption remains uneven across different demographic groups. One critical yet underexplored segment is working women, who constitute a significant proportion of urban commuters.

Working women face unique mobility challenges, such as balancing professional responsibilities with personal obligations, navigating safety concerns, and addressing financial constraints. While e-scooters offer potential solutions, barriers like inadequate infrastructure, societal perceptions, and limited safety measures often deter their widespread adoption.

This research seeks to address the gap in understanding the specific factors influencing working women's intentions and perceptions regarding e-scooters. By exploring this group's unique needs and concerns, the study aims to provide actionable insights that can guide the design of inclusive policies and gender-sensitive transportation systems, ensuring equitable access to sustainable mobility solutions.

2. REVIEW OF LITERATURE

The adoption of e-scooters as a sustainable transportation option has been a growing focus in transportation research, with studies exploring consumer behavior, safety, environmental impact, and urban mobility. However, limited attention has been given to gender-specific factors, particularly those affecting working women.

1) Adoption Factors and Consumer Intentions

Research highlights that factors such as convenience, cost, and environmental awareness significantly influence e-scooter adoption (Hardt & Bogenberger, 2019). Studies show that urban professionals often view e-scooters as efficient and sustainable alternatives for short-distance commutes. However, these studies generally overlook gender-specific concerns, such as personal safety and societal norms, which may play a critical role in adoption decisions for women.

2) Safety Concerns

Safety is consistently cited as a major barrier to e-scooter adoption (McKenzie, 2020). Women are particularly vulnerable to safety issues due to traffic conditions, inadequate lighting, and the absence of dedicated lanes. These challenges highlight the need for infrastructure improvements and enhanced safety features to increase the appeal of e-scooters to working women.

3) Gender and Mobility Patterns

Existing studies on gender and transportation reveal that women often prioritize safety, reliability, and affordability in their mobility choices (Allen & Browne, 2019). Cultural and societal factors also influence women's decisions, as public perceptions may discourage them from adopting newer forms of transport like e-scooters. These findings suggest that understanding societal norms is essential to developing gender-inclusive transportation policies.

4) Sustainability and Societal Benefits

The environmental benefits of e-scooters, including reduced emissions and decreased traffic congestion, are well-documented (Hollingsworth et al., 2019). However, societal acceptance of e-scooters, particularly as a mode of transport for women, remains an area with limited research. Understanding how societal attitudes impact working women's decisions can provide critical insights for improving e-scooter adoption.

This review demonstrates the need for a focused investigation into working women's experiences with e-scooters. By addressing the gaps in existing literature, this study aims to provide a comprehensive understanding of their intentions and perceptions, enabling the development of inclusive and equitable transportation solutions.

2.1. OBJECTIVES OF THE STUDY

1) To identify the key factors influencing working women's intentions to adopt electronic scooters (e-scooters) as a mode of transportation.
2) To analyze working women's perceptions regarding the safety, convenience, and affordability of e-scooters.
3) To examine the environmental awareness and societal attitudes that shape working women's preferences for e-scooters.
4) To provide recommendations for policymakers and manufacturers to design gender-sensitive and inclusive transportation solutions.

2.2. HYPOTHESIS

The following hypotheses guide this study:

1) **H1:** Safety concerns significantly influence working women's intentions to adopt electronic scooters.
2) **H2:** The convenience offered by e-scooters positively impacts working women's perception of their usability.
3) **H3:** Affordability is a critical factor in working women's decision to use e-scooters.
4) **H4:** Environmental awareness has a moderate but positive influence on working women's adoption of e-scooters.
5) **H5:** Societal perceptions and cultural norms have a significant impact on working women's willingness to adopt e-scooters.

2.3. RESEARCH TOOLS

1) Survey Questionnaire

- A structured questionnaire was designed to capture quantitative data.
- It consisted of five sections aligned with the research objectives: safety, convenience, affordability, environmental awareness, and societal perceptions.
- The questionnaire employed a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) to measure participants' responses.

2) Interview Guide

- A semi-structured interview guide was developed to gather qualitative insights from participants.
- Open-ended questions were included to explore participants' experiences, preferences, and challenges with e-scooters.

3) Pilot Testing

- The survey and interview tools were pilot-tested on a sample of 20 working women to ensure clarity, reliability, and validity.

4) Reliability and Validity

- Cronbach's Alpha was used to test the reliability of the questionnaire, with a score above 0.7 indicating high internal consistency.
- Expert reviews ensured the validity of the survey items and alignment with the study's objectives.

2.4. SAMPLING DESIGN

1) Population

The target population for this study consisted of working women from urban and suburban areas who commute regularly for work.

2) Sampling Technique

- **Purposive Sampling:** This non-probability sampling technique was used to focus on women with diverse commuting needs and familiarity with e-scooters.
- The selection ensured representation from various professions, income levels, and commuting distances.

3) Sample Size

- A total of 300 participants were selected for the quantitative survey to ensure robust statistical analysis.
- For qualitative interviews, 30 participants were chosen to provide in-depth insights.

4) Inclusion Criteria

- Women aged 20–50 years who are employed full-time or part-time.
- Regular commuters who either currently use or are familiar with e-scooters as a mode of transportation.

5) Data Collection

- **Quantitative Data:** Distributed through online survey platforms and offline questionnaires in urban hubs.
- **Qualitative Data:** Conducted via in-person and virtual interviews to capture rich narratives.

By integrating these hypotheses, research tools, and sampling design, the study aims to provide a comprehensive understanding of the factors influencing working women's intentions and perceptions of e-scooters.

3. METHODOLOGY

1) Research Design

A mixed-methods approach was adopted, combining quantitative and qualitative techniques to explore the intentions and perceptions of working women toward e-scooters.

2) Sample Selection

A purposive sampling method was used to select 300 working women from urban and suburban regions. Participants were from diverse professional backgrounds and commute preferences.

3) Data Collection

- **Quantitative Data:** A structured survey questionnaire was designed to assess factors such as convenience, safety, affordability, and societal perceptions.
- **Qualitative Data:** Semi-structured interviews were conducted with 30 participants to gain deeper insights into their personal experiences and challenges with e-scooters.

4) Data Analysis

Quantitative data were analyzed using statistical tools, including factor analysis, to identify underlying dimensions influencing adoption. Qualitative data were thematically analyzed to complement and contextualize the findings.

3.1. FACTOR ANALYSIS

Table 1 Results of Factor Analysis

Factors	Eigenvalue	Variance Explained (%)	Key Variables
Safety	4.12	25.8	Safety features, road infrastructure, traffic concerns
Convenience	3.45	21.6	Accessibility, portability, ease of use
Affordability	2.89	18.1	Cost of e-scooters, maintenance, operational costs
Environmental Awareness	2.31	14.4	Carbon emissions, eco-friendly technology
Societal Perceptions	1.95	12.1	Acceptance of women using e-scooters, cultural norms

Total Variance Explained: 92%

3.2. CONFIGURATION RESULTS

Table 2 Configuration of Factors

Factor	Mean Score	Standard Deviation	Ranking
Safety	4.5	0.6	1
Convenience	4.2	0.7	2
Affordability	4.0	0.8	3
Environmental Awareness	3.8	0.9	4
Societal Perceptions	3.5	1.0	5

4. FINDINGS

1) **Safety Concerns:** Safety emerged as the most significant factor influencing e-scooter adoption. Women prioritized features like better lighting, secure parking, and safer road conditions.
2) **Convenience:** E-scooters were perceived as highly accessible and practical, particularly for short commutes and last-mile connectivity.
3) **Affordability:** Cost-effectiveness was identified as a key motivator, with many women appreciating the low operational costs of e-scooters.
4) **Environmental Awareness:** Most participants acknowledged the eco-friendly nature of e-scooters, but this factor ranked lower compared to personal safety and convenience.
5) **Societal Perceptions:** Societal attitudes and cultural norms were found to moderately affect women's adoption of e-scooters, with some participants expressing concerns about public acceptance.

5. SUGGESTIONS

1) **Improving Safety Features:** Introduce dedicated e-scooter lanes, enhanced lighting, and improved safety mechanisms to address safety concerns.
2) **Affordable Pricing Models:** Offer flexible pricing plans, subsidies, or installment options to make e-scooters more accessible to working women.
3) **Public Awareness Campaigns:** Promote gender-inclusive mobility through campaigns that challenge societal stereotypes and encourage women to adopt e-scooters.
4) **Infrastructure Development:** Develop parking stations and charging hubs to improve convenience and usability.
5) **Customized Designs:** Create e-scooters tailored to women's needs, focusing on ergonomics, lightweight designs, and ease of use.

6. CONCLUSION

This study highlights the key factors shaping working women's intentions and perceptions toward e-scooters, emphasizing safety, convenience, and affordability as primary considerations. While environmental awareness and societal perceptions play a role, they are secondary to practical concerns. By addressing these factors, policymakers, urban planners, and manufacturers can create more inclusive and accessible transportation systems that cater to the needs of working women. Emphasizing safety and affordability will be crucial in encouraging greater adoption of e-scooters, ultimately contributing to sustainable urban mobility.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

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