www.gssrjournal.com
Global Social Sciences Review
exploring humanity

p-ISSN : 2520-0348 | e-ISSN : 2616-793X
DOI(Journal): 10.31703/gssr
DOI(Volume): 10.31703/gssr/.2024(IX)
DOI(Issue): 10.31703/gssr.2024(IX.II)

GSSR

GLOBAL SOCIAL SCIENCES REVIEW

HEC-RECOGNIZED CATEGORY-Y

VOL. IX, ISSUE II, SPRING (JUNE-2024)

Double-blind Peer-review Research Journal
www.gssrjournal.com
© Global Social Sciences Review

HumanityPublications
sharing research
www.humapub.com
US | UK | Pakistan

Humanity Publications(HumaPub)
www.humapub.com
Doi:https://dx.doi.org/10.31703

Article Title

Pedestrian Experiences in a Megacity: A Case Study of Walkability in Johar Block-15, Karachi, Pakistan

Global Social Sciences Review

p-ISSN: 2520-0348**e-ISSN:** 2616-793x
DOI(journal):10.31703/gssr
Volume: IX (2024)
DOI (volume):10.31703/gssr.2024(IX)
Issue: IISpring (June 2024)
DOI(Issue):10.31703/gssr.2024(IX-II)

Home Page
www.gssrjournal.com

Volume: IX (2024)
https://www.gssrjournal.com/Current-issues

Issue: II-Spring (June-2024)
https://www.gssrjournal.com/Current-issues/9/2/2024

Scope
https://www.gssrjournal.com/about-us/scope

Submission
https://humaglobe.com/index.php/gssr/submissions

Google Scholar

Visit Us

Abstract

In the dynamic urban landscape of Johar Block-15, Karachi, this research investigates residents' perceptions of walkability, a crucial aspect of urban life. Survey data reveals significant concerns about safety, overall walkability, cleanliness, infrastructure adequacy, and connectivity to amenities. Most respondents express dissatisfaction and emphasize prioritizing and investing in enhancing walkability. Accessibility problems resulting from choking and poor roads also affect the area's pedestrian host factor in terms of traffic and maintenance. However, 68.18% of the respondents use walking for small distances, showing the relevance of walking in developed countries' mobility systems. These recommendations will be helpful to urban planners and policymakers in putting a focus on improving the quality of life of the people living in Johar Block-15 and every other block.

Keywords: Pedestrian Accessibility, Environment, Karachi City, Live Perception; Pedestrian Movement, Environment, Urban Planning, Sustainable Environment

Authors:

Afraz Ahmed Memon: (Corresponding Author)
MCRP (Master of City and Regional Planning), Department of City and Regional Planning, Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan.
(Email: afrazamemon@gmail.com)

Imtiaz Ahmed Chandio: Professor, Department of City and Regional Planning, Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan.

Rabia Soomro: Assistant Professor, Department of Civil Engineering, Mehran University of Engineering and Technology Shaheed Zulfiqar Ali Bhutto Campus, Khairpur Mir's, Sindh, Pakistan.

Pages: 115-124
DOI:10.31703/gssr.2024(IX-II).12
DOI link:https://dx.doi.org/10.31703/gssr.2024(IX-II).12
Article link: http://www.gssrjournal.com/article/A-b-c
Full-text Link: https://gssrjournal.com/fulltext/
Pdf link: https://www.gssrjournal.com/jadmin/Auther/31rvIolA2.pdf

©2024 The Author(s). This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 InternationalLicense.

Humanity Publications (HumaPub)
www.humapub.com
Doi: https://dx.doi.org/10.31703

Citing this Article

12	Pedestrian Experiences in a Megacity: A Case Study of Walkability in Johar Block-15, Karachi, Pakistan						
	Author	Afraz Ahmed Memon Imtiaz Ahmed Chandio Rabia Soomro		**DOI**	10.31703/gssr.2024(IX-II).12		
Pages	115-124	**Year**	2024	**Volume**	IX	**Issue**	II
Referencing & Citing Styles	**APA 7th**	Memon, A. A., Chandio, I. A., & Soomro, R. (2024). Pedestrian Experiences in a Megacity: A Case Study of Walkability in Johar Block-15, Karachi, Pakistan. *Global Social Sciences Review*, *IX*(II), 115-124. https://doi.org/10.31703/gssr.2024(VII-II).12					
	CHICAGO	Memon, Afraz Ahmed, Imtiaz Ahmed Chandio, and Rabia Soomro. 2024. "Pedestrian Experiences in a Megacity: A Case Study of Walkability in Johar Block-15, Karachi, Pakistan." *Global Social Sciences Review* IX (II):115-124. doi: 10.31703/gssr.2024(VII-II).12.					
	HARVARD	MEMON, A. A., CHANDIO, I. A. & SOOMRO, R. 2024. Pedestrian Experiences in a Megacity: A Case Study of Walkability in Johar Block-15, Karachi, Pakistan. *Global Social Sciences Review,* IX, 115-124.					
	MHRA	Memon, Afraz Ahmed, Imtiaz Ahmed Chandio, and Rabia Soomro. 2024. 'Pedestrian Experiences in a Megacity: A Case Study of Walkability in Johar Block-15, Karachi, Pakistan', *Global Social Sciences Review*, IX: 115-24.					
	MLA	Memon, Afraz Ahmed, Imtiaz Ahmed Chandio, and Rabia Soomro. "Pedestrian Experiences in a Megacity: A Case Study of Walkability in Johar Block-15, Karachi, Pakistan." *Global Social Sciences Review* IX.II (2024): 115-24. Print.					
	OXFORD	Memon, Afraz Ahmed, Chandio, Imtiaz Ahmed, and Soomro, Rabia (2024), 'Pedestrian Experiences in a Megacity: A Case Study of Walkability in Johar Block-15, Karachi, Pakistan', *Global Social Sciences Review,* IX (II), 115-24.					
	TURABIAN	Memon, Afraz Ahmed, Imtiaz Ahmed Chandio, and Rabia Soomro. "Pedestrian Experiences in a Megacity: A Case Study of Walkability in Johar Block-15, Karachi, Pakistan." *Global Social Sciences Review* IX, no. II (2024): 115-24. https://dx.doi.org/10.31703/gssr.2024(VII-II).12.					

e-ISSN:2616-793x Volume: IX (2024) Issue: II-Spring (June-2024) p-ISSN:2520-0348

Global Social Sciences Review
www.gssrjournal.com
DOI:http://dx.doi.org/10.31703/gssr

Pages: 115-124 URL: https://doi.org/10.31703/gssr.2024(IX-II).12 Doi: 10.31703/gssr.2024(IX-II).12

Title

Pedestrian Experiences in a Megacity: A Case Study of Walkability in Johar Block-15, Karachi, Pakistan

Authors:

Afraz Ahmed Memon: (Corresponding Author)
MCRP (Master of City and Regional Planning), Department of City and Regional Planning, Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan.
(Email: afrazamemon@gmail.com)

Imtiaz Ahmed Chandio: Professor, Department of City and Regional Planning, Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan.

Rabia Soomro: Assistant Professor, Department of Civil Engineering, Mehran University of Engineering and Technology Shaheed Zulfiqar Ali Bhutto Campus, Khairpur Mir's, Sindh, Pakistan.

Contents

- Introduction
- Aim of the Research
- Research Methodology
- Result and Discussion
- Conclusion
- References

Abstract

In the dynamic urban landscape of Johar Block-15, Karachi, this research investigates residents' perceptions of walkability, a crucial aspect of urban life. Survey data reveals significant concerns about safety, overall walkability, cleanliness, infrastructure adequacy, and connectivity to amenities. Most respondents express dissatisfaction and emphasize prioritizing and investing in enhancing walkability. Accessibility problems resulting from choking and poor roads also affect the area's pedestrian host factor in terms of traffic and maintenance. However, 68.18% of the respondents use walking for small distances, showing the relevance of walking in developed countries' mobility systems. These recommendations will be helpful to urban planners and policymakers in putting a focus on improving the quality of life of the people living in Johar Block-15 and every other block.

Keywords: Pedestrian Accessibility, Environment, Karachi City, Live Perception, Pedestrian Movement, Environment, Urban Planning, Sustainable Environment

Introduction

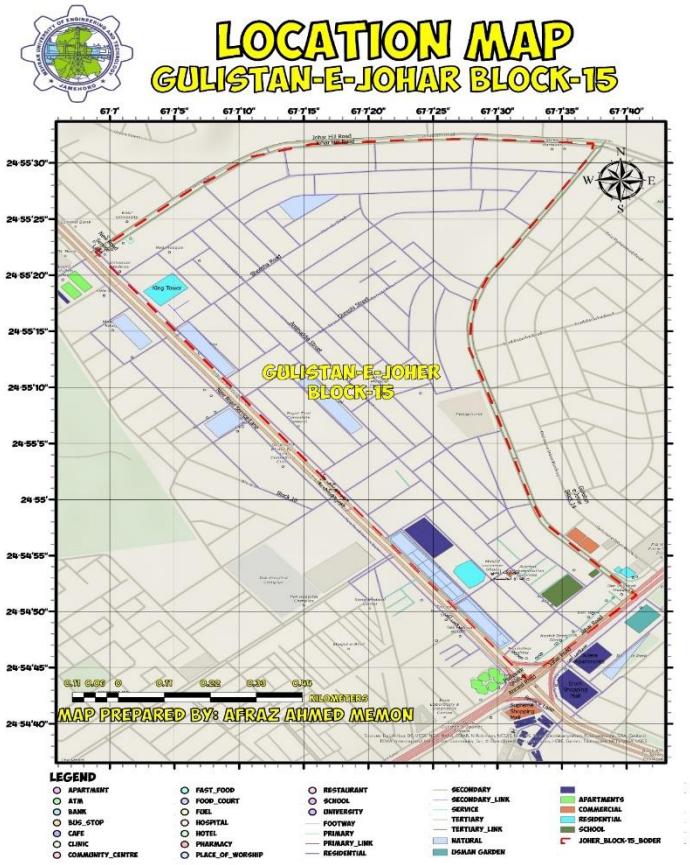
Spaces in urban areas today are experiencing dramatic metamorphoses globally due to urban expansion, population increase, and shifts in human life cycles. (Lo, 2009; Marvi et al., 2024). Regarding the quality of life in the urban environment, walkability is one of the most essential factors receiving focused attention recently. (Bhatti et al., 2021; Brohi et al., 2023; Memon et al., 2020; Soomro et al., 2021; Tahseen, n.d). This means the level to which an area accommodates movement through walking is easily accessible and safe for pedestrians to use walking as a mode of transport. (Qureshi et al., 2022; Van Dyck et al., 2008).

©2024 The Author(s). This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 InternationalLicense.

Within the city of Karachi, Pakistan, applying the Johar Block-15 focus, the experience of urban lifestyle is alive yet highly intricate (Brohi et al., 2021; Gill et al., 2021; Jun & Hur, 2015; Talpur et al., 2014). Whereas there are still changes that are physically happening in the city, or as the city changes, it becomes more important to know the community's perception of walkability (Gul, 2017; Gul et al., 2016; Kalwar et al., 2021; Kalwar et al., 2019; Khan & Khan, 2018; Memon et al., 2014; Sarkar & Webster, 2017). Walkability is not just the structure of available sidewalks and crossways only but also a broader context comprising of connectivity, safety, pleasant appearance of the streets and other requirements of streets and availability of other necessary facilities (Khan & Khan, 2018; MEMON, 2018; Memon, Kalwar, Sahito, Talpur, et al., 2021; Memon, Napiah, Talpur, et al., 2016; Memon et al., 2022).

This research aims to establish an understanding of different aspects of the perception of walkability among people in Johar Block-15, Karachi. In this study, the relations between the architectural design features and the community's choice on one hand, and the walkability and the differently oriented daily life of the residents on the other hand are investigated to reveal useful information on the factors based on the context of walkability. The present study has been conducted in the context of Karachi due to the following reasons: First, Karachi is one of the most populous cities globally, which calls for a large and heterogeneous sample for the study Second, Karachi being an urban centre has different cultural, socio-economic and urban concerns, which makes the setting appropriate for the research questions (Gota et al., 2010; Gul et al., 2020; Irfan Ahmed et al., 2016; Memon, Kalwar, Sahito, & Napiah, 2021; Memon et al., 2021; Memon, Napiah, Hussain, et al., 2016; Soomro et al., 2022). As such, it is believed that the conclusions of this research will not only serve the purpose of filling a gap in the discourse literature of urban studies but also assist urban planners, policymakers, and authorities of Johar Block-15 and other regions to design better accessibility to neighborhoods and making those areas healthier, sustainable, and more livable for the communities that live there.

Figure 1



Aim of the Research

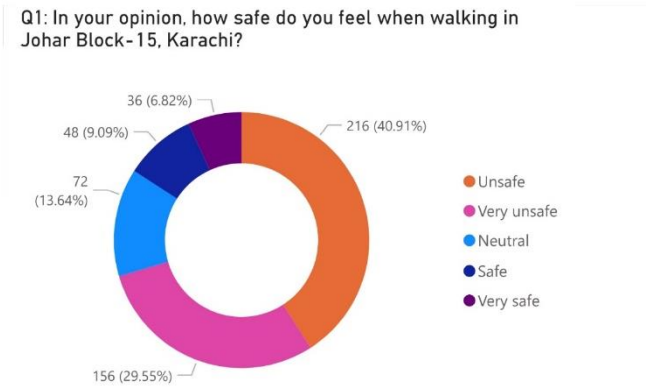
Therefore, this research aims to measure and analyze residents' perception of walkability in Johar Block-15, Karachi, Pakistan.

Research Methodology

Self-completed survey questionnaires were given to the residents of Johar Block-15, Karachi, Pakistan, to understand their awareness of walkability. The questions included in the inquiry were intended to cover all aspects of the walkability facilities already built in Johar Block-15. In essence, the general purpose of this work is to provide more profound explicatory knowledge of essential factors antecedent to walkability and its implications on the daily activities of dwellers.

Result and Discussion

Figure 2



According to a recent questionnaire survey conducted on the residents of Johar Block-15, Karachi, a poor perception of security was observed when walking in the neighborhood. Regarding the fear level, 42.4% of the respondents felt unsafe or unsafe while walking, and 28.06% felt slightly unsafe while walking. Watches data shows that insecurity is a persistent feeling among residents.

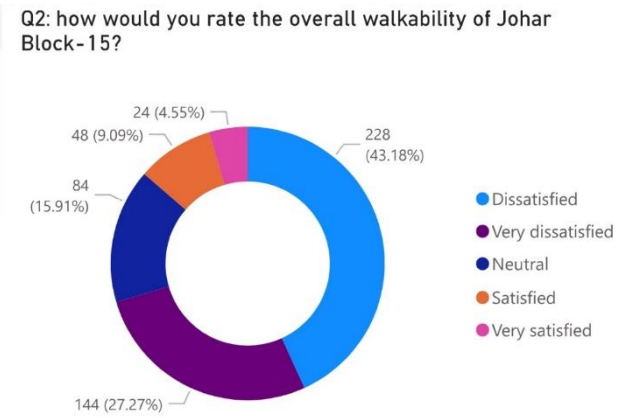
More specifically, respondents assigned a rating of 3.91 to the area, which indicates some level of concern about a 'somewhat safe' and a 'somewhat unsafe' area. However, 29.55% of respondents rated the area as very unsafe, which even then underlines that a part of the population perceives increased danger when walking.

Slightly over half (13.64%) were neutral on the area's safety, whereas only 15.91% of Cardiotrans lobbyists regarded the area as safe or very safe. This shows that only a meager number of residents are assured of safety every time they walk at night within Johar Block-15.

There are underlying factors that can be identified from the survey related to safety concerns, including the following: These may, therefore, include poor lighting at night, perceived absence of security personnel, occurrence of criminal activities, or feelings of social incivility. Consequently, these root causes are addressed if the area is to be made safe in the view of the community.

Conclusively, the outcomes of this survey provide helpful information for community-oriented admins, authoritative bodies, and police departments. This calls for specific measures to improve safety actions to involve the public and increase safety for the occupants of Johar Block-15. When treated according to the viewpoints indicated by the survey, authorities stand a chance to enhance the well-being of society and general community health.

Figure 3

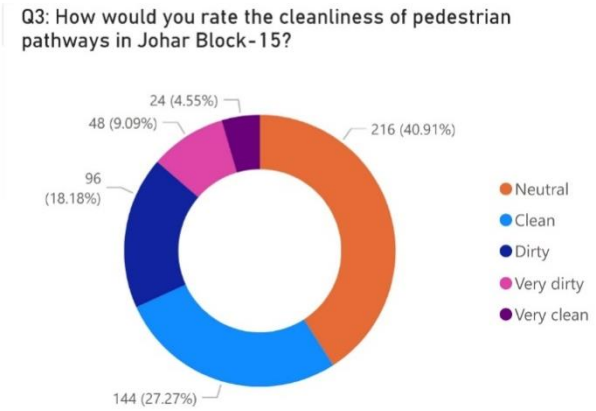


From the data provided on the question about the rate of overall walkability of Johar Block 15, we have the following breakdown:

- Dissatisfied: 43.18%
- Very dissatisfied: 27.27%
- Neutral: 15.91%
- Satisfied: 9.09%
- Very satisfied: 4.55%

Analyzing this data, it can be seen that a significant majority, comprising 70.45%, of the respondents expressed dissatisfaction with the overall walkability of Johar Block 15. The survey responses indicate a prevailing discontent with walkability in this area.

Figure 4

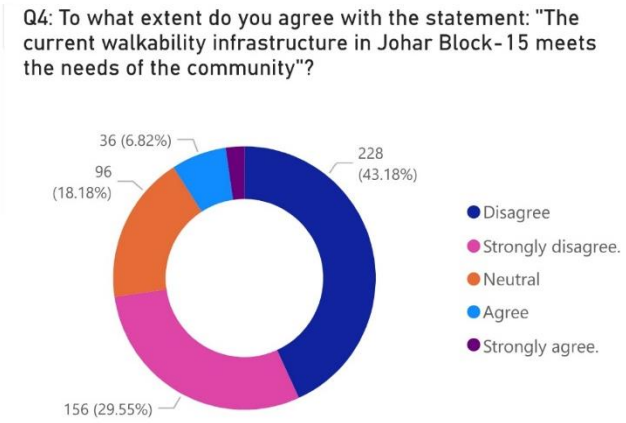


Based on the data from the question about the rate of cleanliness of pedestrian pathways in Block 15, the following analysis can be made:

- Neutral: 40.91%
- Clean: 27.27%
- Dirty: 18.18%
- Filthy: 9.09%
- Very clean: 4.55%

From this data, it can be analyzed that the majority of the respondents, 40.91%, chose the "neutral" option, indicating a lack of strong opinion about the cleanliness of pedestrian pathways in Block 15. However, the combined percentage of those who expressed negative views (dirty and very dirty) is 27.27%, slightly higher than the 27.27% who chose "clean." This suggests some concern about the cleanliness of pedestrian pathways in the area, but a significant portion of respondents did not express a strong opinion on the matter.

Figure 5

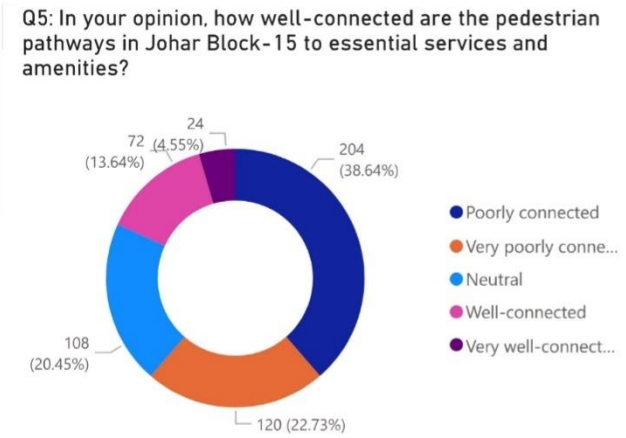


Based on the responses to the question about the extent to which the current walkability infrastructure in Johar Block 15 meets the needs of the community, the following analysis can be made:

- Disagree: 43.18%
- Strongly disagree: 29.55%
- Neutral: 18.18%
- Agree: 6.82%
- Strongly agree: 2.27%

From this data, it can be analyzed that a majority of the respondents, 43.18%, disagreed with the statement, indicating that they believe the current walkability infrastructure does not adequately meet the community's needs. Furthermore, combining the percentages of those who expressed strong disagreement and disagreement amounts to 72.73%, signifying a prevalent dissatisfaction with the current walkability infrastructure in Johar Block 15.

Figure 6



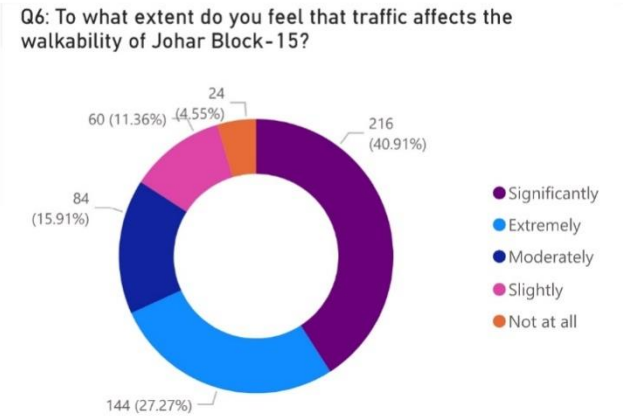
Based on the responses to the question about the connectivity of pedestrian pathways in Johar Block-15 to essential services and amenities, the following analysis can be made:

- Poorly connected: 38.64%
- Very poorly connected: 22.73%
- Neutral: 20.45%
- Well-connected: 13.64%
- Very well-connected: 4.55%

From this data, it can be analyzed that most respondents, 38.64%, feel that the pedestrian pathways in Johar Block-15 are poorly connected to essential services and amenities. Furthermore, when combining the percentages of those who

expressed poor and very poor connectivity, it amounts to 61.37%, indicating a prevalent dissatisfaction with the connectivity of pedestrian pathways to essential services and amenities in the area.

Figure 7

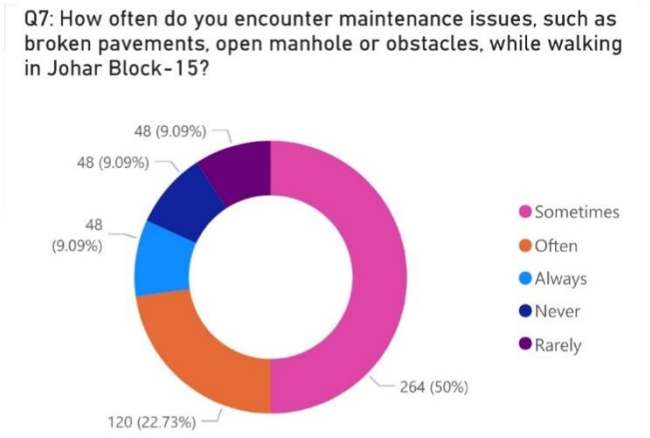


Based on the responses to the question about the extent to which traffic affects the walkability of Johar Block-15, the following analysis can be made:

- Significantly: 40.91%
- Extremely: 22.27%
- Moderately: 15.91%
- Slightly: 11.36%
- Very not at all: 4.55%

From this data, it can be analyzed that the majority of the respondents, 40.91%, feel that traffic significantly affects the walkability of Johar Block-15. Additionally, when combining the percentages of those who chose significantly and excessively, it amounts to 63.18%, indicating a prevalent sentiment of the substantial impact of traffic on the walkability of the area.

Figure 8



Based on the responses to the question about the frequency of encountering maintenance issues while walking in Johar Block-15, the following analysis can be made:

- Sometimes: 50%
- Often: 22.73%
- Always: 9.09%
- Rarely: 9.09%
- Never: 9.09%

From this data, it can be analyzed that the majority of the respondents, 50%, encounter maintenance issues such as broken pavements, open

maintenance holes, or obstacles sometimes while walking in Johar Block-15. Additionally, when combining the percentages of those who encounter these issues often and consistently, it amounts to 40.82%, indicating a prevalent occurrence of maintenance issues that impact walkability in the area.

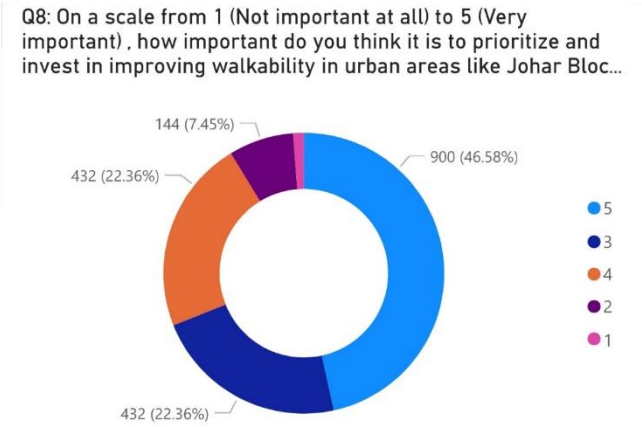


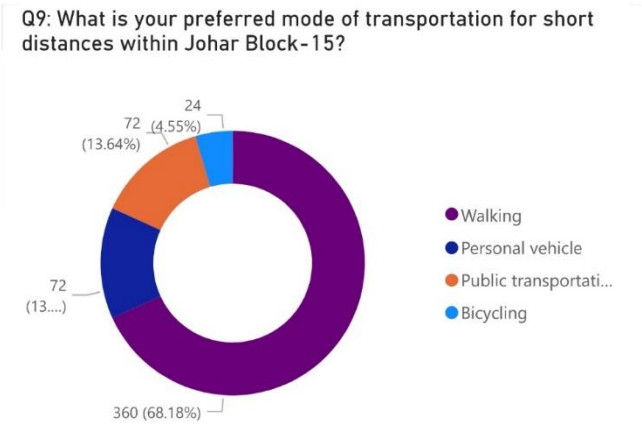
Figure 9

Based on the responses to the question about the importance of prioritizing and investing in improving walkability in urban areas like Johar Block-15, the following analysis can be made:

- 1 (Not important at all): 7.45%
- 2: 7.45%
- 3: 22.36%
- 4: 22.36%
- 5 (Very important): 46.58%

From this data, it can be analyzed that the majority of the respondents, 46.58%, believe it is essential to prioritize and invest in improving walkability in urban areas like Johar Block-15 and additionally, combining the percentages of those who chose 4 and 5 amounts to 68.94%, indicating a significant emphasis on investing in enhancing walkability in urban areas.

Figure 10



Based on the responses to the question about the preferred mode of transportation for short distances within Johar Block-15, the following analysis can be made:

- Walking: 68.18%
- Personal vehicle: 13%
- Public transport: 13.64%
- Bicycling: 4.55%

From this data, it can be analyzed that the majority of the respondents, 68.18%, prefer walking as their mode of transportation for short distances within Johar Block-15. This indicates a firm reliance on pedestrian mobility for short trips within the area.

Conclusion

An analysis of the self-generated survey data shows a high level of agreement on the dire need for enhancement of the walkability infrastructure of Johar Block-15. Most respondents felt that current conditions are not entirely satisfying regarding pedestrian facilities, and they stressed that pedestrian facilities should be considered a priority and that investment should be made to encourage people to walk more in a city.

The survey results support the importance of walkable infrastructure in creating a healthier, sustainable, and equitable neighborhood. Concerning pedestrians' concerns, the following improvements were recommended: the expansion of sidewalks, access to good footpaths, and enough good lighting at night and secure pedestrian crossings. Such improvements would not only improve the overall quality of the pedestrian scape but also benefit in the reduction of traffic and boosting proactivity of the populace.

Moreover, the survey responses clearly indicated strong support for using walking as the most preferred mode of transport for short distances. This fact underlines the importance of the pedestrian environment in providing access across the local area and managing car dependency. Suppose authorities want to improve the quality of life within the community. In that case, they will need to support such concepts as walkability Because, through such measures, authorities can make a positive shift towards sustainability within a society.

Therefore, the above survey findings support a strong and mandating rationale for enhancing walkability in the Johar Block-15. So when authorities recognize the shortcomings of pedestrian improvement and put more money into infrastructure to encourage pedestrians, authorities can help make the urban environment lively, more robust, and equitable for all.

References

Bhatti, L., Talpur, M. a. H., Memon, I. A., Chandio, I. A., & Shaikh, F. A. (2021). The challenges faced in the collection and disposal of municipal solid waste (MSW) management: a case study of Sanghar City. *Sukkur IBA Journal of Computing and Mathematical Sciences*, *5*(1), 59–72. https://doi.org/10.30537/sjcms.v5i1.762
Google Scholar Fulltext

Brohi, S., Kalwar, S., Memon, I. A., & Ghaffar, A. (2021). Using the theory of planned behavior to identify the behavioral intention to use public transportation service: The case study of Karachi circular railway. *International Journal of Emerging Technologies*, *12*(6).
Google Scholar Fulltext

Brohi, S., Kalwar, S., Memon, I. A., Gill, R., & Khuhro, T. A. (2023). Assessment of municipal solid waste management in the city of Dadu, Sindh, Pakistan. *International Journal of Environment and Sustainable Development*, *22*(2), 167. https://doi.org/10.1504/ijesd.2023.129886
Google Scholar Fulltext

Gill, R., Kalwar, S., & Memon, I. A. (2021). Yeh's satisfaction Index modelling of tenants in rental appartments (A case study of Latifabad Hyderabad). *Sukkur IBA Journal of Computing and Mathematical Sciences*, *4*(2). https://doi.org/10.30537/sjcms.v4i2.654
Google Scholar Fulltext

Gota, S., Fabian, H. G., Mejia, A. A., & Punte, S. S. (2010). Walkability surveys in Asian cities. *Clean Air Initiative for Asian Cities (CAI-Asia)*, *20*, 2017–2021.
Google Scholar Fulltext

Gul, Y. (2017). *Effects of neighbourhood environment on physical activities in gated and non-gated neighbourhoods in Karachi, Pakistan* (Master's thesis). University Technology Malaysia, Johor Bahru.
Google Scholar Fulltext

Gul, Y., Jokhio, G. A., & Bibi, T. (2020). Walk towards sustainability: Improved neighbourhood street connectivity helps. *E3S Web of Conferences*, *211*, 01004. https://doi.org/10.1051/e3sconf/202021101004
Google Scholar Fulltext

Gul, Y., Sultan, Z., & Johar, F. (2016). Effects of neighborhood's built environment on physical activities in gated Communities: a review. *International Journal of Built Environment and Sustainability*, *3*(1). https://doi.org/10.11113/ijbes.v3.n1.112
Google Scholar Fulltext

Irfan Ahmed, M., Madzlan, N., Mir Aftab Hussain, T., & Muhammad Rehan, H. (2016). Influence of factors to shift private transport users to park-and-ride service in Putrajaya. In *Civil, Offshore and Environmental Engineering* (pp. 385–389). CRC Press.
Google Scholar Fulltext

Jun, H., & Hur, M. (2015). The relationship between walkability and neighborhood social environment: The importance of physical and perceived walkability. *Applied Geography*, *62*, 115–124. https://doi.org/10.1016/j.apgeog.2015.04.014
Google Scholar Fulltext

Kalwar, S., Memon, I. A., & Qureshi, S. (2021). Significance of National Spatial Planning for Economic development of secondary Cities in India: Critical Analysis of JNNURM Programme. *Sukkur IBA Journal of Computing and Mathematical Sciences*, *4*(2). https://doi.org/10.30537/sjcms.v4i2.658
Google Scholar Fulltext

Kalwar, S., Sahito, N., Memon, I. A., Hwang, J., Mangi, M. Y., & Lashari, Z. A. (2019). National Planning Strategies for Agro-based Industrial Development in secondary cities of Sindh Province, Pakistan. *Sustainability*, *11*(24), 7066. https://doi.org/10.3390/su11247066
Google Scholar Fulltext

Khan, A., & Khan, M. A. (2018). Groundwater quality assessment for drinking purpose in Gulistan-e-Johar Town, Karachi, Pakistan. *Journal of Geoscience Engineering Environment and Technology*, *3*(4), 200. https://doi.org/10.24273/jgeet.2018.3.4.2086
Google Scholar Fulltext

Lo, R. H. (2009). Walkability: what is it? *Journal of Urbanism International Research on Placemaking and Urban Sustainability*, *2*(2), 145–166. https://doi.org/10.1080/17549170903092867
Google Scholar Fulltext

Marvi, H., Kalwar, S., Talpur, M. a. H., Memon, I. A., Soomro, M., & Ahsan, N. (2024). Cultivating Community: Addressing social sustainability in rapidly urbanizing Hyderabad City, Pakistan. *Societies*, *14*(9), 161. https://doi.org/10.3390/soc14090161
Google Scholar Fulltext

Memon, I. A. (2018). *Mode choice modelling to shift car travelers towards park and ride service in the CBD of Putrajaya and Karachi* (Master's thesis). Universiti Teknologi PETRONAS.

Google Scholar Worldcat Fulltext

Memon, I. A., Kalwar, S., Sahito, N., & Napiah, M. B. (2021). Factors that influence travelers' willingness to use or not use park-and-ride service in Putrajaya and Karachi CBD. *PalArch's Journal of Archaeology of Egypt/Egyptology, 18*(2), 720–734.
Google Scholar Fulltext

Memon, I. A., Kalwar, S., Sahito, N., Qureshi, S., & Memon, N. (2020). Average index modelling of campus safety and walkability: The case study of University of Sindh. *Sukkur IBA Journal of Computing and Mathematical Sciences, 4*(1), 37–44.
Google Scholar Fulltext

Memon, I. A., Kalwar, S., Sahito, N., Talpur, M. a. H., Chandio, I. A., Napiah, M., & Tayyeb, H. (2021). Mode Choice Modeling to Shift Car Travelers towards Park and Ride Service in the City Centre of Karachi. *Sustainability*, *13*(10), 5638. https://doi.org/10.3390/su13105638
Google Scholar Fulltext

Mehran University Research Journal of Engineering and Technology, *41*(1), 157–168. https://doi.org/10.22581/muet1982.2201.16
Fulltext

Sarkar, C., & Webster, C. (2017). Healthy Cities of Tomorrow: the Case for Large Scale Built Environment–Health Studies. *Journal of Urban Health*, *94*(1), 4–19. https://doi.org/10.1007/s11524-016-0122-1
Google Scholar Fulltext

Soomro, F., Kalwar, S., Memon, I. A., & Kalwar, A. B. (2021). Accessibility factor for Boulevard Shopping Mall, Hyderabad City, Pakistan. *International Research Journal of Innovations in Engineering and Technology*, *05*(10), 19–22. https://doi.org/10.47001/irjiet/2021.510004
Google Scholar Fulltext