



WALKABILITY DRIVERS ON SUBURBAN HIGH STREET: SOCIO-DEMOGRAPHIC AND ECO-INFRASTRUCTURE LINKAGES

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Abstract: Walkability is a measure of how easily accessible a built-up environment is to practice walking and quantify the level of physical activities. A sustainable suburban requires improvements in quality and safe access to active walkability, and understanding of pedestrian perception, their walking behaviour and walkability drivers. This requires analysis of the elements and methodologies for examining suburban sustainability and its influence and impact on well-being of people who live there, with the goal of minimizing environmental impacts and improving quality of life and environmental conditions.

Walkability is influenced by a complex interplay between socio-demographic factors (e.g., age, gender, socio-economic status, etc.) and eco-infrastructure elements (e.g., green spaces, pedestrian pathway, street connectivity, etc.). Understanding the relationship between socio-demographic characteristics and eco-infrastructure is essential for enhancing walkability and encouraging sustainable transportation modes.

This study investigates the primary walkability and the drivers of walkability in suburban high-street contexts, emphasizing the interaction between socio-demographic drivers and eco-infrastructure drivers. Therefore, this research focuses on identifying the eco-infrastructure requirements for various users to create a good walkability high street and pedestrian-friendly environment. Specifically, this study investigates how to enhance walkability on high streets in suburban areas by utilizing these walkability drivers.

This study focuses on walkability and walkability impact on high streets and focusing on proving necessary eco-infrastructure needed to create an optimal walking environment. This study utilizes matrix linkages between socio-demographic drivers and eco-infrastructure drivers to determine the infrastructure requirements for different socio-demographic user groups.

IndexTerms – Walkability, Suburban Highstreet, Pedestrian-friendly environment, Street Infrastructure, Socio- Demographic factors, Eco-Infrastructural.

I. INTRODUCTION

Walkability is a multidimensional concept that explains the various factors contributing to pedestrian-friendly environment. It is an important part of planning a sustainable street and depends on understanding people's walking behavior and how it relates to the layout of the space. "The real challenge is not to create walkable environment, but to create great walkable streets that encourage activity, observation and experience, beauty, and visual interest".

1.1 WALKABILITY IN HIGH STREET

High streets are linear urban corridors where commercial, transit, and social activities intersect, and their walkability determines how people experience and use these spaces. Historically, high streets have served as the social and economic backbone of urban settlements, serving as spaces for commerce, mobility, community interaction, and civic identity.

Walkability is a foundational determinant of high-street vitality, influencing economic performance, social life, environmental quality, and sub-urban adaptability. According to Livi and Clifton, "walkability is defined by factors such as the ease of street crossings, sidewalk continuity, local street network characteristics, and topography". So, improved walkability leads to increases accessibility, health benefits, community livability, sustainable environment, economic and community growth in high street areas.

1.2 SUBURBAN WALKABILITY

Suburban walkability is a key element of suburban behaviour and is characterized by both the physical infrastructure that supports walking and the social factors that influence people's motivation to walk in urban spaces. It is the measure of how the physical and social characteristics such as street connectivity, land use diversity, pedestrian infrastructure, and urban form encourage everyday walking activity. It is shaped by drivers such as safety, accessibility, connectivity, mixed uses, and the presence of vibrant and active street life.

Walkability in suburban settings is increasingly recognized as a critical determinant of public health, social equity, and sustainability. Suburbs characterized by lower residential densities, separated land uses, wide streets, and limited pedestrian infrastructure tend to produce lower pedestrian mode share and shorter walking trip lengths than compact urban areas.

1.2.1 Walkability impact in suburban high street

Walkable suburban neighbourhoods promote increased physical activity among residents, resulting in improved health. Elements such as street connectivity, higher residential density, and mixed land use create environments that encourage walking and eliminate the need for a car. Walkability on high streets impacts economic vitality, public health, safety, and social interactions. In a suburban street, incorporating greenery and landscaping plays a key role in enhancing thermal comfort and air quality and improving visual appeal and psychological health. Streetlights improve safety, security, and comfort for pedestrians, particularly during the evening and nighttime and provide lighting that supports evening walks and social gatherings. Eco-friendly infrastructure encourages walking, reduces vehicle speeds, and provides various public transportation along suburban high streets by focusing on well-planned public spaces and pathways.

1.3 THE DRIVERS OF WALKABILITY

A total of 45 drivers were identified and grouped the suburban walkability drivers into four categories. These drivers are (i) socio-demographic drivers, (ii) eco-infrastructural drivers, (iii) biophysical drivers, and (iv) policy and planning drivers based on "Exploring the drivers of Walkability: Implications for enhancing perception and policy to livable cities" by B.M. Mengiste. Among these drivers, (i) socio-demographic drivers and (ii) eco-infrastructural drivers are the focus of this study. These two drivers contribute to better understanding of walkability on suburban high streets.

1.3.1 Socio-Demographic Drivers

Differences between men and women, young and older people, and active and inactive people have shown variations in walking and mobility experience. In suburban younger people, male, and active people tend to have shorter walking paths and travel distances compared to older people, female, and inactive individuals. Understanding factors like community perception and lifestyle, safety and security of suburban neighborhoods, helps to promote suburban walkability along with household areas. Socio-demographic factors, such as age distribution, income levels, household structures, and travel behavior preferences, strongly influence perceptions and usage of walkable environments.

1.3.2 Eco-Infrastructural Drivers

Suburban high streets with better infrastructure have a higher likelihood of walking and promote walkability. Additionally, investing in public spaces and infrastructure designed for pedestrians can enhance walkability in suburban environments. Sustainable and ecological sub-urbanism highlight eco-infrastructural drivers and aim to incorporate green spaces, pedestrian pathways, and transit networks to promote walkability. Eco-infrastructural factors such as green cover, permeable surfaces, street trees, and climate-responsive design are major contributors to walkability in suburban high streets.

II. METHODOLOGY:

2.1 Method 1

Creating 9 categories based on Socio-demographic drivers in suburban high street and their impacts on walkability.

Creating 10 categories based on Eco-infrastructural drivers in suburban high street and their impacts on walkability.

2.2 Method 2

Creating a matrix for Suburban walkability drivers for designing a good high street based on linkages between socio-demographic drivers and eco-infrastructure drivers. The methodology for developing good walkability in suburban high streets combines theoretical research with computational analysis.

III. METHOD 1

3.1 Creating 9 categories based on the human age Socio-demographic drivers.

1. Age & Sex:

Gender influences perceptions of safety and walking habits of residents.

2. Gender:

Different age groups and genders have distinct mobility needs.

3. Socio-economic Status:

lower-income may rely more on walking.

4. Education:

The level of education affects awareness of health benefits.

5. Employment Status:

Unemployed or retired individuals may walk more for leisure purposes.

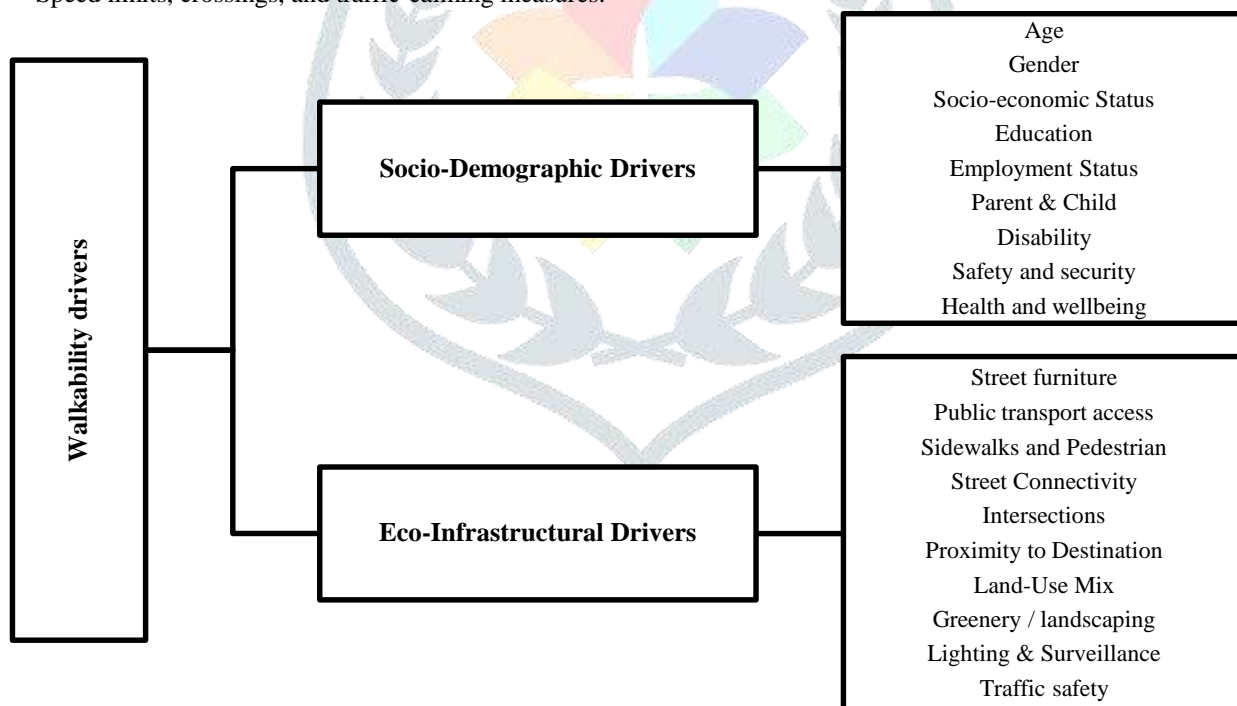
6. Parent & Child:

Family structure affects walking needs and safety concerns.

- 7. **Disability**
Number of people with mobility or sensory impairment.
- 8. **Safety & Security:**
Actual and perceived crime and traffic risks.
- 9. **Health and wellbeing:**
Level of awareness of health benefits.

3.2 Creating 10 categories based on human age Eco-infrastructural drivers.

- 1. **Infrastructure:**
Availability of roads, utilities, and transit services in the neighborhood.
- 2. **Public Transport Access:**
Walkable access to transit stations encourages walking.
- 3. **Sidewalks and Pedestrian Paths:**
Well-maintained and continuous walking paths.
- 4. **Street Connectivity:**
High intersection density allows for shorter and direct walking routes.
- 5. **Intersections:**
The number and frequency of street crossings.
- 6. **Proximity to Destination:**
Distance to shops, parks, schools, and services.
- 7. **Land-Use Mix:**
Proximity of residential, commercial, and public spaces.
- 8. **Greenery/street landscaping:**
Presence of trees, plants, and green spaces along the paths.
- 9. **Lighting and Surveillance:**
Quality of street lighting and security measures.
- 10. **Traffic Safety:**
Speed limits, crossings, and traffic-calming measures.



3.3 Walkability on Socio-Demographic Drivers

Table 3.3 Shows the Walkability and impact on walkability on Socio-Demographic Drivers

Socio-Demographic Drivers	Impact on Walkability
1. Age	Older adults and women may require safer, more accessible routes.
2. Gender	Women may be more cautious, Affects walking at night and route choice.

3. Socio-economic Status (SES)	Can increase walking by choice.
4. Education	Influences transport choices and area walkability.
5. Employment Status	Time availability impacts walking frequency.
6. Parent & Child	Parents may choose safer routes; walking with children may increase walking.
7. Disability	Requires inclusive infrastructure like curb cuts, signals, and tactile paths.
8. Safety & Security	High safety increases walking; unsafe areas reduce it.
9. Health and well being	Encourages family to walk in clean and health environment.

3.4 Walkability on Eco-Infrastructural drivers

Table 3.4 Shows the Walkability and impact on walkability on Eco-infrastructural drivers

Eco-Infrastructural drivers	Impact on Walkability
1. Street furniture	Improves mobility and ease of movement for pedestrians.
2. Public Transport Access	Supports multimodal trips.
3. Sidewalks & Pedestrian Pathway	Provides safe and comfortable walking routes.
4. Street Connectivity	Allows direct, varied routes; reduces walking distances.
5. Intersections	More route options and better access.
6. Proximity to Destination	Makes walking practical and attractive for errands.
7. Land-Use Mix	Reduces car dependency. Encourages walking for daily tasks.
8. Greenery / Street landscaping	Enhances comfort, shade, and aesthetics for walkers.
9. Lighting & Surveillance	Increases safety, especially at night, encouraging walking.
10. Traffic Safety	Increases pedestrian safety and reduces fear.

3.4.1 Street furniture

Eco-infrastructural walkability drivers of street furniture focus on enhancing pedestrian comfort, safety, and environmental quality, which encourage walking as an eco-friendly mode of transport. Street furniture includes seating, lighting, trash bins, signage, bike racks, bollards, children's play elements, and similar urban elements that contribute to the comfort, safety, and visual appeal of walking routes. It positively improves walkability by providing resting areas, improving safety through lighting, and adding visual interest and convenience for pedestrians. These elements support walkability by enabling people to walk longer or more frequently,

3.4.2 Transportation access

When essential services, retail outlets, and recreational amenities are located within a comfortable walking distance, residents can conveniently access daily necessities, without the need of car. A safe, comfortable, and visually appealing pedestrian network connecting homes and workplaces to transit hubs significantly increases the likelihood of individuals choosing public transit over private vehicles. Moreover, public transit systems fundamentally depend on the walkability of their surrounding environment.

3.4.3 Sidewalks and pedestrian

Well-designed sidewalks are continuous, well-lit, and physically separated from vehicular traffic, encouraging greater pedestrian activity while promoting sustainable transportation and improving public health on suburban streets. To enhance the public-private interface, sidewalks should be positioned adjacent to home fronts, fostering visual interaction and a safer community.

Well-designed sidewalks should include the following:

- (i) Adequate width to accommodate diverse users, including wheelchair users, strollers, and groups walking side by side.
- (ii) The surface should be smooth, even, anti-skid materials and well-maintained surfaces that ensure safety and comfort.
- (iii) Continuous paths with minimal interruptions for consistent pedestrian movements.
- (iv) Accessibility features, such as curb ramps, tactile paving, and safe crossings, to support elderly and disabled users.

3.4.4 Street connectivity

Street connectivity refers to the degree to which streets are linked within a transportation network, providing direct, alternative, and multiple routes between destinations. Good connectivity can navigate different areas of the subdivision in a suburban area

through continuous loops and small block sizes that encourage walking and cycling. A well-connected road network, continuous sidewalks, and shorter block lengths enhance pedestrian-friendly streets and increase comfort, accessibility, safety, and walkability.

3.4.5 Intersections

In suburban high streets, well-connected intersections with active frontages and safe crossing infrastructure create safer pedestrian experiences and encourage social interactions. Having more intersections generally shortens the travel distance between residences, offices, parks, and transit stops, making walking a more convenient, efficient, and time-saving mode of travel.

3.4.6 Proximity to destination

Proximity to destinations between residential areas and key suburban amenities, such as shops, schools, parks, cultural facilities, and public transport, is a critical eco-infrastructure driver of suburban walkability. However, locating homes near retail outlets does not create foot traffic unless the stores are strategically positioned on pathways that experience the highest levels of movement in relation to adjacent areas.

3.4.7 Land use

Mixed land-use configurations promote walkability by enabling people to easily travel on foot between their homes, workplaces, and major shopping centers. Walkability also encompasses walking for leisure, recreation in parks and playgrounds, shopping errands, and physical exercise. Areas featuring mixed land use and higher proportions of green and open spaces are significantly associated with more frequent walking behavior and greater physical activity levels. Moreover, physical characteristics such as building aesthetics, streetscapes, vistas, porches, and other architectural features influence the walkability of suburban streets.

3.4.8 Greenery / Street landscaping

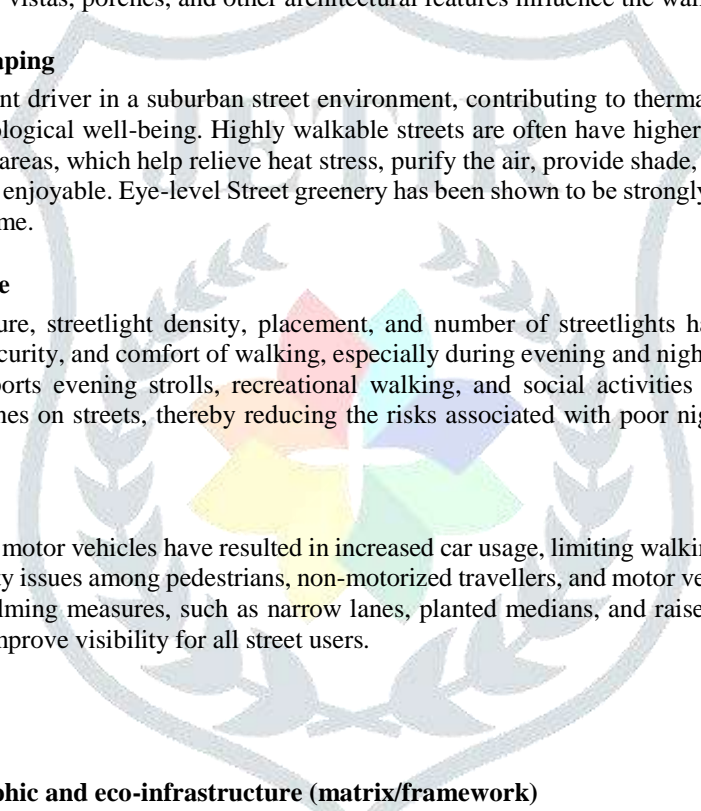
Street greening is an important driver in a suburban street environment, contributing to thermal comfort, improved air quality, and enhanced visual and psychological well-being. Highly walkable streets often have higher street lined with greenery, such as trees, shrubs, and landscaped areas, which help relieve heat stress, purify the air, provide shade, and create aesthetically pleasing settings that make walking more enjoyable. Eye-level Street greenery has been shown to be strongly linked to individual's decisions to walk and to longer walking time.

3.4.9 Lighting and Surveillance

Among various street furniture, streetlight density, placement, and number of streetlights have been found to significantly improve the perceived safety, security, and comfort of walking, especially during evening and nighttime hours. Streetlights provide essential illumination that supports evening strolls, recreational walking, and social activities after sunset. Adequate lighting minimizes dark or poorly lit zones on streets, thereby reducing the risks associated with poor nighttime visibility, such as crime rates and accidents.

3.4.10 Traffic safety

Traffic regulations that favor motor vehicles have resulted in increased car usage, limiting walking and non-motorized travel, and creating direct conflicts and safety issues among pedestrians, non-motorized travellers, and motor vehicles. To reduce these conflicts, the implementation of traffic-calming measures, such as narrow lanes, planted medians, and raised pedestrian crossings, can help slow down vehicle speeds and improve visibility for all street users.



IV. METHOD 2

4.1 Purpose of socio-demographic and eco-infrastructure (matrix/framework)

Socio-demographic drivers help in understanding the walkability needs of different users, while eco-infrastructure helps in determining the type of infrastructure required for different users to create good suburban walkability.

4.2 Structure of matrix

Socio-demographic drivers based on age, gender, socio-economic status, education, employment status, disability, health and well-being, parent and child, safety, and security.

Eco-infrastructure drivers based on street furniture, transport access, sidewalks and pedestrians, street connectivity, intersections, proximity to destination, land-use mix, greenery street landscaping, lighting and surveillance, and traffic safety.

Table 4.2 The matrix below highlights the walkability drivers, emphasizing the Socio-Demographic drivers and Eco-infrastructure drivers.

SOCIO-DEMOGRAPHIC DRIVERS ECO-INFRASTRUCTURAL DRIVERS	Age (e.g., Older Adults)	Gender (e.g., Women)	Socio-economic Status (SES)	Education	Employment Status	Parent & Child	Disability	Safety & Security	Health & well being
Street furniture	Elderly need benches, ramps, toilets; teens need hangout zones, parks.	Lighting, public toilets.	Seating, green spaces, toilet.	Separate zones, seating.	Raised crossing, seating.	Play areas, hangout zones.	Barrier free design, ramps, railing.	Ramp, railings, bollards.	Seating, green spaces, toilets, dustbin.
Public Transport Access	Shorter distances.	Safety at stops.	Quick routes.	Connective links.	Connectivity, quick routes.	Safe access.	Barrier free design.	No isolated stops.	Maintenance, cleanliness
Sidewalks & Pedestrian Pathway	Smooth non-slippery pavement, continuous sidewalk, railings.	Wider sidewalks	Quality sidewalks	Maintenance, separate zones.	Continuous paths, Separate zones.	Smooth surfaces, railings, separate bicycle lane.	Ramps, tactile paving, railing.	Dark or broken paths feel unsafe	Non-slippery pavement railings, continuous sidewalk
Street Connectivity	Direct routes.	Shortcuts, stroller access.	Continuous and linked paths.	Better routes.	Safe walking access, quick routes.	Direct or shorter routes.	Continuous pathway ramps, barrier free design.	Clear sightlines	Continuous pathway, safe walking access.
Intersections	Safe signals.	Clear sightlines.	Signages.	Speed bumps, Signages.	Raised crossing.	Safe crossing, Speed bumps.	Curb ramps, Audible signals.	Crossing times.	Raised Crossing, barriers.
Proximity to Destination	Close by amenities.	Safer close-by destination.	Nearby services.	Nearby amenities.	Continuous and linked pathway.	Close-by destination.	Shorter distances.	Nearby amenities.	Nearby emergency services.
Land-Use Mix	Mixed-use near home. (shops, health)	Open ground floor users.	Nearby services.	Higher mixed use.	Services need to be reachable.	Parents run errands while walking kids.	Shorter trips possible.	Lively areas feel safer reduces isolated spots.	Nearby amenities and services.

Greenery / Street landscaping	Shade critical, parks.	Comfort, visibility.	Feel safer more pleasant, parks.	Greener suburbs.	More pleasant.	Shaded walks, pleasant paths, parks.	Environmental comfort.	Improved barrier, increases safety.	Shaded walks, greenery mental comfort.
Lighting & Surveillance	Poor lighting deters walking after dark.	Lighting for safety.	Need brighter lights.	Lighting improvements.	After-work walking.	Night safety, no dim lights.	Vital for visual impairment needs.	Crime risk or fear elevated at night.	Good lighting.
Traffic Safety	Speeds limit, raised crossing.	Speed limit, crossing time.	Speed bumps, raised crossing.	Crossing time.	Speed limit, crossing time.	Signages, speed limit.	Visual and audible signals, speed limit, crossing time.	Surveillances, barriers free.	Signages, raised crossing.

Results:

The matrix indicate that walkability is strongly influenced by the combined effect of socio-demographic characteristics and eco-infrastructure factors. Solutions like Safe, well-connected, and accessible pedestrian infrastructure, along with proximity to daily destinations and mixed land use, significantly encourages walking. However, poor lighting, inadequate sidewalks, traffic dominance, and lack of maintenance reduce walkability for all user groups, particularly the elderly, women, children, and persons with disabilities which should be avoided. The matrix offers valuable decision-making capabilities at the preliminary design stages by linking socio-demographic needs with eco-infrastructure walkability drivers, enabling designers to prioritize inclusive, safe, and context-responsive pedestrian designs.

V. RESULTS AND DISCUSSIONS

5.1 SOCIO-DEMOGRAPHIC AND ECO-INFRASTRUCTURE LINKAGES

1. Age & Sex:

Children and the elderly need safer, slower, and age-appropriate infrastructure. Women often require safer and more secure walking and biking environments.

Eg: Smooth non-slippery pavement, Seating areas, Raised crossings.

2. Gender:

Women and girls are less likely to (walk/bike) in areas perceived as unsafe or poorly designed.

Eg: Street lighting, Surveillance.

3. Education:

Educated populations are more aware of environmental and health benefits, and infrastructure is needed to support schools and institutions.

Eg: Wayfinding signage, School-cantered paths.

4. Socio-economic Status:

Low-income communities often lack quality infrastructure, although they rely more on walking and biking.

Eg: sidewalks, bike lanes.

5. Employment Status:

Employed individuals, especially in informal sectors, depend on walking and biking; need infrastructure that connects home, work, and transit.

Eg: Continuous and linked pathway, parking.

6. Parent & Child:

Parents are more likely to walk or bike with their children when the routes are safe, shaded, and not traffic-heavy.

Eg: School zones, Safe crossings, Buffer zones.

7. Disability:

People with physical disabilities need inclusive infrastructure; the lack of it excludes them entirely from walkability options.

Eg: Barrier free design, Ramps, non-slippery pavements, Tactile paths.

8. Safety & Security:

Creating a sense of safety, reducing accidents and crime, and encouraging outdoor activities, social interactions, and community trust.

Eg: Surveillance, lighting.

9. Health and wellbeing:

Promoting active mobility, social equity, and access to green spaces improves air quality and encourages physical activity.

Eg: Parks, green corridors, cleanliness.

5.2 DESIGN RECOMMENDATIONS FOR SUBURBAN HIGH STREET**5.2.1 Street furniture**

- Supports age-inclusive mobility: elderly people need seating with back rest, and children need hangout zones.
- Enhances gender comfort by improving visibility and safety in public spaces.
- Communities benefit from basic amenities like benches and toilets.
- Parents prefer shaded seating near school zones and crosswalks.
- Essential for people with disabilities (ramps, railings, and barrier-free edges).
- Improves health and well-being by offering rest spots, greenery, and cleanliness.

5.2.2 Transportation access

- Elderly people and women feel safer at well-lit, non-isolated transit stops.
- The educated and employed groups depend on efficient and well-connected routes.
- Low-income groups rely heavily on walking-to-transit connections.
- Parents require safe access to buses and other public transportation near school routes.
- Disabled users require barrier-free transport entry and clear pathways.

5.2.3 Sidewalks and pedestrian

- Surface: Firm, non-slippery, smooth pavements are crucial for elderly and disabled users.
- Wider sidewalks support women, children, and parents with strollers.
- Low-income areas often lack quality sidewalks despite their higher dependence.
- Continuous, well-maintained paths benefit employed pedestrian.
- Facilities for disabled persons: Tactile paving, ramps, and railings ensure inclusive design.
- Broken or dark sidewalks reduce safety and walkability for all groups of pedestrians.

5.2.4 Street connectivity

- Direct, short walking routes are essential for the elderly, employed, and students.
- Workers rely on connected street systems.
- Parents need stroller-friendly and safe shortcut routes.
- Barrier-free, continuous connectivity supports disabled users.
- Clear, connected networks significantly increase walkability perception.

5.2.5 Intersections

- Elderly need longer crossing times and raised, safe crossings.
- Women and children benefit from clear sightlines and high visibility.
- Signage and speed control improve safety across socio-economic groups.
- Parents require school-zone crossings with buffers.
- Disabled users depend on curb ramps and audible signals.
- Wide and unsafe intersections discourage walkability.

5.2.6 Proximity to destination

- Elderly, children, and women prefer close-by essential services.
- Low-income groups rely on nearby shops, workspaces, and transit.
- Communities value walkable access to schools and institutions.
- Parents prefer short-distance routes for errands and school drops.
- Close destinations improve safety and encourage daily walking.
- Proximity strongly influences overall walkability perception.

5.2.7 Land use

- Mixed use reduces travel time for elderly and women, increasing safety.
- Low-income groups benefit from nearby services and workspaces.
- Parents can run errands while walking children, increasing convenience.
- Mixed-use reduces isolated areas and improves natural surveillance.
- Diverse land-use patterns directly boost walkability.

5.2.8 Greenery / Street landscaping

- Green spaces make walking more pleasant, improving gender comfort.
- Shade is critical for elderly, children, and parent's makes walking comfortable.

- Provides mental comfort and environmental quality for all demographics.
- Supports disabled mobility through protective shading and clear pathways.
- Enhances aesthetics, making areas safer and more inviting.

5.2.9 Lighting and Surveillance

- Supports safety for night-time workers and students.
- Critical for visually impaired users for navigation.
- Reduces crime perception, increasing community trust and walkability.
- Strong lighting provides safety and more active streets after dark.
- Low lighting reduces usage across all socio-demographic groups.

5.2.10 Traffic safety

- Speed limits and raised crossings protect elderly and children.
- Women feel safer in traffic-calmed environments.
- Parents depend on slow-speed school zones for children's safety.
- Disabled users require audible/visual signals at crossings.
- Lower traffic volumes and calming measures increase walkability.

5.3 KEY FINDINGS ON SUBURBAN WALKABILITY DRIVERS

- Features like accessible parking, public transportation, navigation aids, clean restrooms, and even surfaces encourage outdoor walking.
- Stations or mobility hubs located in areas with high connectivity are essential for creating transit-oriented and pedestrian-friendly urban environments.
- Factors such as gender, age, ability, and socioeconomic status, including social norms and comfort, can limit the inclusivity of walking practice.
- High levels of traffic accidents, crime, and air pollution along routes discourage children from walking or cycling to schools.
- Areas with higher deprivation have fewer walkable features, such as green spaces and recreation centers, resulting in reduced walking.
- People walked more in neighbourhood environments with a variety of housing styles, well-maintained sidewalks and landscape, better street lighting and more opportunities for social interaction.
- Improved construction and management, expanding tree pits, widening pedestrian paths, and enhancing road traffic capacity will improve both the comfort and functionality of the street.
- Well-defined interfaces between buildings and streets and between local and regional movement patterns enhance walkability.

VI. CONCLUSION:

Walkability on suburban high streets is influenced by interaction between socio-demographic factors and eco-infrastructure characteristics. When planning walkable suburban areas, it is vital to consider Eco-infrastructure drivers together to create spaces that are safe, accessible, and inviting for people of different ages and socio-demographic backgrounds. Research shows that both objective features (e.g., infrastructure quality and land-use mix) and subjective perceptions (e.g., safety, comfort, and aesthetics) of the built environment are strongly correlated with walking, cycling, and outdoor physical activity.

In conclusion, walkability on suburban high streets is shaped by interconnected intertwined forces of socio-demographics and eco-infrastructure. Research consistently associates higher walkability with increased pedestrian flows, greater retail performance, enhanced health outcomes, and stronger social bonds. Studies indicate that enhancing pedestrian comfort requires not only the physical design of streets but also an understanding of the people who use them. Focusing eco-infrastructure, setting clear objectives of street improvements, and socio-demographic inclusivity can transform suburban high streets into flexible, vibrant, and pedestrian-centric public spaces.

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