

Sustaining Walkability in the Future City: With Special Reference to Central Business District of Colombo, Sri Lanka

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Abstract

Colombo was founded as an outpost by Portuguese in 1505. Later it fell in the hands of Dutch and British colonial powers. This non-organically produced city later became the capital of independent Ceylon. Throughout history, this colonial structure was in constant negotiation with its indigenous communities.

Despite its historical prominence, the city's very existence is now under significant threat. The most pressing issue in modern Colombo is its severe traffic congestion, which negatively impacts the environment, economy, and overall well-being of the community. Termed as the 'urban crisis', this situation was once common to most developed cities from around the world. The primary cause of this crisis is the city's automobile-centric development. To address this issue, promoting 'walkability' emerges as the most viable alternative. This study aims to assess compatibility of the walkability concept within Colombo's socio-spatial structure. Location-specific walkability indicators, identified through a questionnaire survey, along with universal indicators derived from literature, were used to assess four selected case studies within Colombo's Central Business District (CBD). This evaluation aimed to identify the prospective and retrospective aspects embedded in the city's socio-spatial structure.

Since the number of prospective aspects outweighs the retro-prospective ones – and many of the retro-prospective aspects can be transformed into prospective – walkability can be sustained in Colombo's CBD. To achieve this, a shift in planning concepts, innovative approaches to mixed land use, and enhancements to physical attributes are essential.

Keywords: Walkability, Colombo CBD, Sustaining

Introduction

The city of Colombo, the commercial capital of Sri Lanka, was once a dominant location in the Indian Ocean. Consequently, it has inherited a rich and sophisticated history. Its significance as an ancient port city, combined with its economic and defence strengths, positioned Colombo as the driving force behind Ceylon's global standing (Perera, 1994). Unlike other Sri Lankan cities, Colombo is a distinctive urban entity, as it was not an organic creation of the local community. Instead, its elevation to city status was a direct result of colonial rule (Munasinghe, 2016). As Brohier (1984) asserts, "[Colombo] is a city forced on the peoples of Ceylon in spite of themselves.

It was never a creation of their own choice or making". Established as a Portuguese outpost in 1505, Colombo was successively ruled by the Portuguese, Dutch, and British for centuries. Following independence in 1948, modern Colombo remained a foreign implant, lacking both a hinterland that nurtured its development, and an organic historical evolution tied to the local populace. This in turn, resulted in multitude of architectural representations of hybridity that competed for dominance in a backdrop where a new modern architectural identity was sought (Wijetunge, 2010, 2011, 2012, 2013, 2014, 2015, 2018, 2020, 2021, 2022, 2023, 2024a, 2024b, 2024c, Wijetunge et al., 2024). Consequently, the city's very existence and identity were deeply intertwined with European metropolises (Perera, 2002). However, despite its colonial origins, Colombo became the capital of independent Ceylon, and later, the commercial capital of present-day Sri Lanka. The adaptation of this colonial city by the local population has been a complex and ongoing process, characterized by a continuous negotiation between its imposed colonial structure and indigenous Ceylonese influences. This dynamic has ultimately transformed Colombo into a contested, hybrid, and liminal space (Perera, 1994). The modern urban planning interventions towards Colombo, rather than fostering inclusivity, have contributed to the transformation of this historically-diverse city into a fragmented one with socially-alienated communities.

Urbanization has been a widespread process across most countries since the beginning of the 21st century (Pacione, 2001). However, the contemporary urbanization trend has led to an urban crisis. In the course of research and studies aimed at addressing this crisis, urban planning professionals have identified urban transportation as the primary factor influencing urban sustainability (Pacione, 2001). As a response to the challenges posed by urban transportation, professionals introduced the 'walkable city model' as a viable alternative for achieving sustainable urban mobility (Turon et al., 2017), giving rise to the urban planning concept of 'walkability'. Walking, as the most fundamental and primary mode of transportation, offers extensive benefits that positively impact individuals as well as the broader community. Walkable cities present a viable solution to many pressing issues faced by urbanized areas today, including automobile dependency, pollutant emissions, loss of green spaces, diminished social interactions, rising health concerns, and economic decline. By prioritizing walkability, cities can foster more sustainable, healthier, and socially-vibrant urban environments (Rafiemanzelat et al., 1999).

Rapid urbanization in Colombo is occurring at an unprecedented rate. Since its inception, majority of the city's users have resided in dormitory suburbs, commuting daily to the city for work. Over 250,000 vehicles enter Colombo's city limits each day, leading to severe congestion due to the limited road capacity and insufficient parking spaces, as highlighted by Kumarage (1995). Consequently, traffic speeds within the city are steadily declining, with vehicle engines idling for extended periods, significantly increasing air pollution. Notably, 70% of Colombo's CO₂ emissions are attributed to vehicular traffic (Chandrasiri, 1995). The only natural mechanism to filter these pollutants is urban greenery. However, Colombo's green cover is shrinking at an alarming rate of 0.4 km² per year. Despite this environmental crisis, there is little public intervention to mitigate the issue, while unchecked urban expansion continues. This cycle of increasing activities, rising population inflows and escalating vehicle numbers are exacerbating the city's already unsustainable conditions (Kumarage, 1995).

Currently, walking in Colombo is largely confined to recreational activities, with pedestrian infrastructure focused on creating aesthetically-pleasing jogging tracks, rather than integrating walkability into daily urban mobility. The most concerning reality is that residents of dormitory suburbs wake up early to jog before spending long hours stuck in traffic on their way to work. If these two activities – walking for health and commuting – could be integrated to some extent, Colombo could foster a more sustainable urban transportation system, while enhancing the city's overall sustainability (Chandrasiri, 1995).

Thus, the research problem identified is the negative impacts of urban transportation in Colombo, which result in unnecessary time spent commuting daily. This inefficiency leads to higher economic costs, while simultaneously degrading the physical environment, diminishing public well-being, and adversely affecting both mental and physical health. The study is based on the hypothesis that sustaining walkability within Colombo's city limits will help alleviate the prevailing urban crisis. The research aims to evaluate the compatibility of Colombo's socio-spatial structure with this hypothesis. In this study, 'walkability' serves as the independent variable, while 'user experience', 'physical attributes', and 'land use mix' are the dependent variables, as established in the literature.

The study is structured in two main phases: the initial phase examines the relationships between these variables within the context of Colombo, while the latter phase assesses the city's compatibility with them. Since walkability is a multifaceted concept that cannot be directly measured in an urban context, the study employs an analytical approach to determine whether Colombo's future sustainability can be achieved through enhanced walkability. The study's primary aim is to explore the potential of a walkable Colombo, supported by the following objectives:

- To understand the urbanization process and urban crisis
- To study the sustaining process of urban mobility
- To identify the vitality of the concept of 'Walkability'
- To identify the influential criteria of Walkability
- To assess the criteria of walkability on four case studies

The research spans various domains, including urbanization in the third-world countries and Colombo, urban crisis in modern cities, sustainability of urban mobility, walkable city model as a sustainable alternative, concept and assessment of walkability, and Colombo's urban morphology. While the study does not aim to propose a master plan or design solutions, it will conclude by identifying the prospective and retro-prospective aspects of Colombo's urban fabric, evaluating its potential to sustain itself through walkability.

Research Background

Historical Evolution of Cities

Historical studies have identified three major transformations that have fundamentally altered the course of human civilization. The first was the development of agriculture and the emergence of Neolithic settlements around 7,000 B.C. (Pacione, 2001). The second transformation was the pre-industrial revolution, occurring prior to the 18th century, during which cities began to take shape, as noted by Lynch (1981). The third and most influential transformation was the Industrial Revolution that kicked off in the 18th century, which significantly reshaped urban environments.

Cities are believed to have originated during the pre-industrial era, and later evolved into modern urban centres during Industrial Revolution. The Italian philosopher Botero (as cited in Kostof, 1991), writing in the 16th century, described the city as "*[an] assembly of people, a congregation drawn together to the end they may thereby the better live at their ease in wealth and plenty. And the greatness of the city is said to be, not the largeness of the site or the circuit of the walls, but the multitude and number of the inhabitants and their power.*"

During the Renaissance, scholars began studying cities as artistic and structural entities, leading to an understanding of the underlying urban processes. This intellectual movement

introduced key concepts such as urbanization, urbanism, and urban growth. The evolution from primitive pre-industrial cities to the early forms of modern urban centres was further articulated by (Wheatley, 1971), who defined pre-industrial cities as "[that] particular set of functionally integrated institutions which were first devised some 5,000 years ago to mediate the transformation of relatively egalitarian, ascriptive, kin-structured groups into socially stratified, politically organized, territorially based societies". The institutional changes he highlighted were pivotal to the formation of modern urban civilization, driving major socio-political restructuring. This transformative process, though universal, manifests differently across geographical regions and continents, with variations in visibility between developed and developing countries.

Urbanization and Colonial Cities

Urbanization is driven by both the natural increase in the urban population and net migration to urban areas. The ultimate outcome of urbanization is the emergence of urbanism (Pacione, 2001). The socio-spatial impact of this process is most evident in the transformation of land use patterns. Recognizing this, Conzen (1960) categorized the urban landscape into three primary components – land use, buildings and town plan (street layout) – to analyse urban morphogenesis. A key component of a given city's urban land use is the CBD, commonly known as downtown, which serves as the economic and commercial hub of a city. However, the trajectory of urban development from the pre-industrial era to postmodernism, particularly as observed in Europe, is not a universally-shared experience. The urbanization process varies significantly depending on geographical location and historical context. The rapid rate of urbanization seen across the world today is a relatively recent phenomenon. For many cities, urbanization remains a contemporary and ongoing process (Pacione, 2001). In the so-called 'Third-World' countries, urbanization was largely influenced by the actions of Britain and other European powers that colonized them. The most prominent impact of European influence on these regions was the establishment of new cities strategically located for transportation efficiency, export-oriented trade, and defence purposes. Often, these cities were not only imposed upon local landscapes, but also introduced entirely new urban forms, disrupting indigenous urbanization patterns. Many of these colonial-era cities remain the primary metropolitan centres of their respective regions, even today (Pacione, 2001).

<i>Chronological phases</i>	<i>Major features of urbanisation</i>
Pre contact	Small organically patterned towns predominate
1500, Mercantile colonialism	Limited colonial presence in existing ports. Trade usually in natural products of local region
1800, Transitional phase	Reduced European interest in investments in overseas. Great profits to be made in industrial revolution
1850, Industrial colonialism	European need for cheap raw materials and food. Colonialism takes territorial form, new settlement patterns and morphology created
1920, Late colonialism	Intensification of European morphological influence. Extension to smaller towns in hierarchy. Increased ethnic segregation
1950, Early independence	Rapid growth of indigenous populations through migration in search of jobs. Expansion of slums and squatter settlements.
1970, New international division of labour	Appearance of multinational corporation factories. Further migrational growth of cities. Increasing social polarization.

Table. 01: Phases of Urbanisation. Source: Drakakis- Smith (1987).

As in other regions of Asia, South Asian cities also bear the imprint of both colonial and indigenous influences. Pacione (2009) presents two models depicting this hybrid urban form seen in South Asian cities: the colonial-based city and the bazaar-based city.

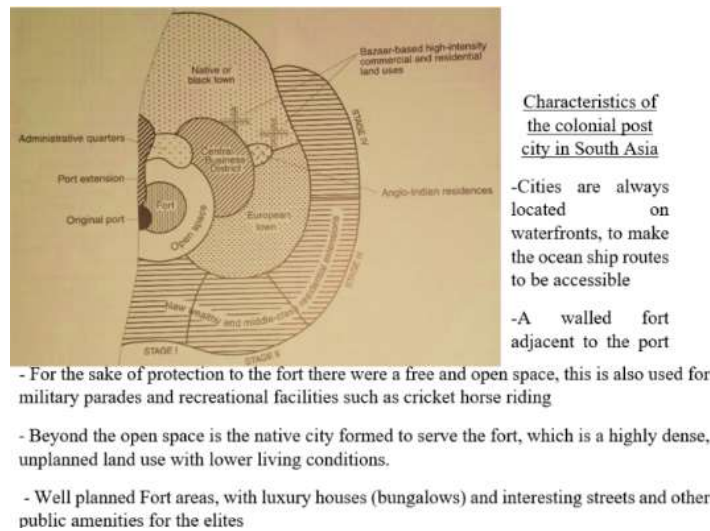


Fig. 01: The Model of the Colonial-based city form.

Source: Pacione (2001).

The fort or colonial city remains a well-planned urban settlement, featuring spacious urban quarters, tree-lined avenues, and essential service facilities. As the colonial city expanded, local elites settled on its periphery, gradually reorganizing the physical, social and political structures of the ancient administrative systems.

Urbanization and Colombo

By the 1420s, European explorers began perceiving the seas as a unified entity, transforming the world from an infinite space into a finite, knowable and controllable place. These discoveries led Europe to focus on long-distance maritime trade, gradually connecting the world (Pacione, 2009).

As early as the 16th century, Sri Lanka experienced European invasions, beginning with the Portuguese, followed by the Dutch and British. Sri Lanka, a naturally rich country with a self-sufficient and sophisticated history spanning approximately 2,500 years, had its own urban planning system, centered in the agriculturally rich North Central Province. However, the development of the colonial city in Colombo marked a significant shift from these ancient town planning traditions (Perera, 1994).

However, Sri Lanka currently finds itself in an urban paradox. According to the *United Nations World Urbanization Prospects* (2018), Sri Lanka ranked as the 11th least urbanized country in the world, with only 18.2% of its population classified as urban. Yet, considerable evidence suggests that the actual urban population is significantly higher than stated in this report. For instance, using the agglomeration index, which incorporates multiple indicators, Sri Lanka's real urban population is estimated to be between 35% and 45% (Uchida and Nelson, 2010). Sri Lanka's urban paradox is most evident in its capital, Colombo, which is the largest urban conurbation on the island (SoSLC, 2018).

Once a small trading post frequented by merchants from Arabia, Morocco and Persia, Colombo later evolved into the capital city (Dayaratne, 2010). Successive European colonial powers then occupied it (Perera, 1994). Due to its strategic location along maritime trade routes, Colombo developed into a key node in the international trade network during colonial rule (Dayaratne, 2010). With the fall of the Sinhalese stronghold in Kandy to the British, which ensured their complete colonization of the island, as Perera (1994) tells us, Colombo subsequently became

both the commercial and administrative centre of Sri Lanka (Dayaratne, 2010). The prioritization of Colombo by colonial rulers led to its central role in the urbanization of the entire island. Perera (1994; 95) addresses this phenomenon in his discussion of Decolonizing Ceylon, stating that “*Colombo made Ceylon, but not vice versa*”.

Several key milestones significantly influenced the urbanization of Ceylon, including its integration into the capitalist economy in the 19th century, establishment of Colombo Municipal Council in 1865, and enactment of *House and Town Improvement Ordinance* in 1915 (Perera, 1994; Weerakoon, 2013). The centralized emphasis on colonial Colombo paved the way for it to become the capital of independent Ceylon in 1948. However, with growing interest in relocating the seat of government in the 1980s, *Kotte* was declared the administrative capital. This shift transformed Colombo into the commercial capital, with the fort area developing into the CBD (Perera, 1994).

Currently, Sri Lankan cities are expanding at a rate of 6.2%, surpassing the growth rates observed in European countries (SoSLC, 2018). Urban sprawl is the predominant form of urban expansion in Sri Lanka, leading to overcrowding, unplanned development, and deteriorating infrastructure in provincial capitals – challenges most apparent in Colombo. At the time of independence, Ceylon, with Colombo as its capital, was an aspiring Third World nation. However, decades of unidirectional urbanization have led to an urban crisis in Colombo, which has since extended to other provincial capitals (Dayaratne, 2010).

Sustaining the Urban Built Environment via Walkability

As discussed by many, including Graces (1998), Glancey (1999), Dymnicka (2017), Badach (2017), McArthur (2007), and Sisson (2023), the modern urban world is facing a crisis – financially, socially, and environmentally. In response, various collective efforts to sustain cities have focused on promoting sustainable urban transportation and reducing dependence on automobiles. Within this context, Speck (2012), along with many other urban designers, have identified the ‘walkable city form’ as a viable alternative or remedial strategy for urban sustainability. Speck (2012, p.6), in particular, underscores the critical role of walkability in urban sustainability, stating that “[*after*] several decades spent redesigning pieces of cities, trying to make them more liveable and more successful, I have watched my focus narrow to this topic as the one issue that seems to both influence and embody most of the others... GET WALKABILITY RIGHT AND SO MUCH OF THE REST WILL FOLLOW”. Walking is generally recognized as the simplest and most fundamental form of transportation and has historically been the primary mode of urban mobility (Rafiemanzelat et al., 2016). The cities were designed to accommodate walking until industrial revolution took place (Newman and Kenworthy, 1999). In urban contexts, walking is typically defined as short-distance movement from one point to another (Razali et al., 2017). However, following the major transformation of transportation systems after the industrial revolution, private vehicle ownership became widespread in the 20th century as Bilyamin (2014) tells us, leading to a decline in the prioritization of both public transportation and pedestrian infrastructure in urban planning agendas (Razali et al., 2017).

Walkability and Image of urban Space

The growing recognition of walking as a critical component of urban life has prompted planners worldwide to promote walkability (Su et al., 2017). More recently, walkability has become a central focus in the sustainable development of cities (Razali et al., 2017). This emphasis on urban sustainability has led scholars to study walkability in relation to various urban issues, identifying key indicators for assessing pedestrian-friendly environments. These indicators include land use mix, land use patterns, street layout, public transport supply, attractiveness, connectivity, proximity and urban design (Razali, Rizali et al., 2017; Mustafiz et al., 2018). On the other hand, Ewing et al., (2006) discern that none of the elements of built environment are as

crucial to walkability as streets. As Kostof (1992:220) elaborates, “[the] street is a mere traffic channel, ensconced within the city’s solid mesh; the street is a complex civic institution, culture-specific and capable of dazzling formal variation and calculated nuance”. Streets function both as an urban form, and also as an institution. Traditionally, their purpose has encompassed traffic circulation, the exchange of goods and communication. In urban planning, streets are primarily considered in relation to settlements, as they are defined by the buildings that shape them (Kostof, 1992).

Aside from streets, the other two key physical environment factors influencing walkability are street block design and land use mix. It is even suggested that the traditional urban arrangement – where residential and office spaces are positioned above ground-floor shops facing the street (*i.e.* shop-houses) – naturally reduces the need for excessive mobility. This underscores the importance of minimizing unnecessary travel in contemporary cities, with street block design and land use mix being the two primary determinants of mobility patterns in modern urban settings (Moughtin, 1996). The size, function as well as structure of a street block shape public spaces, and thereby significantly contribute to their vitality (Moughtin, 1996). Man cannot separate himself from space; from his inner psyche to his physical existence, he is deeply embedded in it. Through existential space, humans shape their surroundings to meet their needs and solve problems. This fundamental instinct led early humans to transform caves into dwellings during the Neolithic era, evolving over time into the sophisticated architectural spaces built today (Norberg-Schulz (1971).

Whether built or unbuilt, every space has the ability to evoke emotions, creating what can be described as a ‘*sixth sense*’ in human perception. The way a person’s emotions shift based on spatial experiences is broadly referred to as ‘*perception*’. In urban environments, however, perception is not merely an individual’s psychological response to space, but rather a shared mental image formed collectively by city dwellers. This ‘*majority perception*’ of urban space is known as ‘*the Image*’. The common way in which people perceive a city is simply referred to as the ‘*image of urban space*’ (Lynch, 1970). A city can be perceived in multiple dimensions – social, political, economic, or physical. However, in this context, only physical perception is discussed. Lynch (1982) conducted extensive research on user perception and urban imagery, identifying five primary elements that define a city’s image: Paths, Edges, Districts, Nodes, and Landmarks.

Path	Paths are the channels in through which observers, customarily, occasionally or potentially move. The streets, railway tracks, pathways, transit lines and canals can be a path in an image and for most of the observers, this is the most crucial element
Edges	These are too linear elements as paths, but which are not identified as the walking paths by the observer which is rather a physical boundary between two districts
Districts	These are the sections of the cities, or specific areas which the observer mentally enters ‘inside of’, these are always identifiable from the inside yet used for external referencing.
Nodes	Are the strategic spots in a city into which an observer can get into, which are the focal point to and from which he is traveling. Nodes can be simply a junction, a place of break in transport etc.
Landmarks	Are the identifiable spots, which basically act as a symbol or a sign. Landmarks mostly act as reference point in this cognitive image of the city

Table. 02: Elements of the Image.

Source: Lynch (1982).

Methodology

The study employs a mixed-method approach. The independent variable (*i.e.* walkability) here encompasses both quantitative and qualitative aspects. The study examines the relationship between the dependent and independent variables, specifically within the context of Colombo. The research applies a set of universal walkability criteria to Colombo, and concludes with a list of prospective and retro-prospective factors essential for sustaining walkability in it.

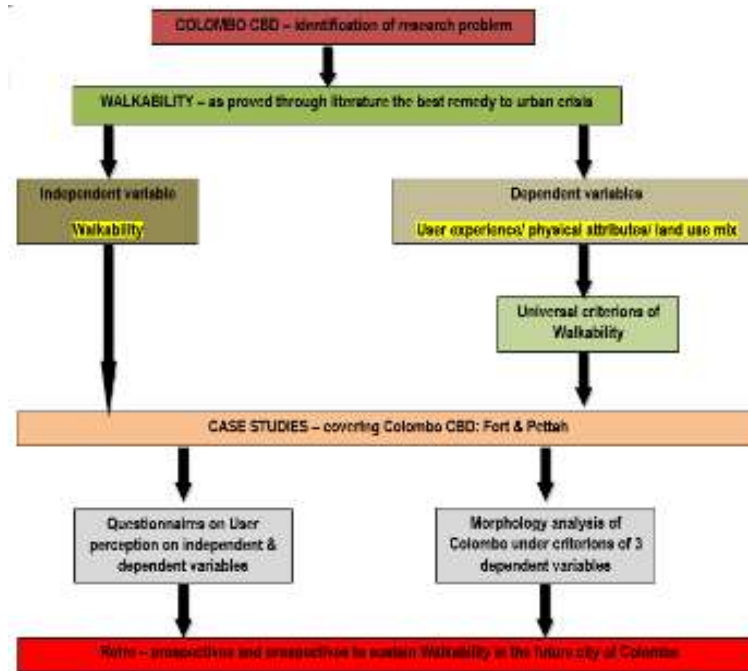


Fig. 02: The Framework of the Study.

Source: Author (2023).

Case Studies

The study is limited to the CBD of Colombo. The CBD comprise two parts as, Fort and Pettah. As these two parts are different from one another in nature, origin and function, four case studies are selected for the overall study, including 2 from Fort and 2 from Pettah. The selection criteria for locations are as follows.

- Located at a node where two or three prominent streets (including one primary) are crossed
- Highly used and with rich activity patterns
- Accommodating many types of activities
- Noticeable spatial and social character

A questionnaire survey is conducted with 40 participants per case study, totalling 160 respondents. The survey population is restricted to visitors, excluding shop owners and hawkers, as their prolonged engagement with the city may lead to biased, overly positive responses. The questionnaire is structured into two main segments, evaluating both positive and negative criteria under the three dependent variables. Participants will assess whether they perceive the area as walkable or not, based on these factors. The two categories are outlined as follows:

GROUPS	FACTORS	INDICATORS (FACTORS-POSITIVELY INFLUENCING WALKABILITY)
1	Experiences of pedestrian activities	Trade and other activities
		Storage of window shopping
		Safe walking beside road
		Quick and easy transit access
		Interesting and adequate food stalls
		No obstacles from construction/construction materials
		Clean pedestrian ways
		Non-disturbing hawkers' activities
2	Configuration or physical features of pedestrian way	Adequate pedestrian width
		Manageable road width and vehicular movements
		Continues pedestrian circulation
		Even level changes
		Roadside barriers for safety
		Maintained surfaces
		Cleanness of the pedestrian paths & roads
		Proper locating of electric posts and billboards
3	Walking for land use mix patterns	Quality of paving material
		Public amenities (shopping, hospitals, restaurants)
		Recreational activities
		Commercial activities (business, banks, office)
		Public transport connectivity

Table. 03: Factors influencing Walkability.
Source: Author (2023).

The questionnaire study is to gather the overall perception of participants on walkability. Then it is to rate the above criteria to identify the particular relationship between dependent and independent variable in the physical and socio-cultural context of Colombo.

Results and Discussion



Fig. 03: Detailing of Case Study 1 and Primary Data Input.
Source: Author (2023).

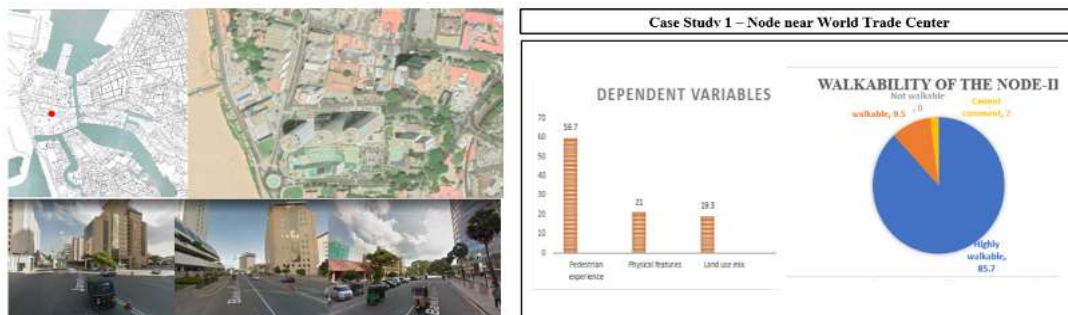


Fig. 04: Detailing of Case Study 2 and Primary Data Input.
Source: Author (2023).

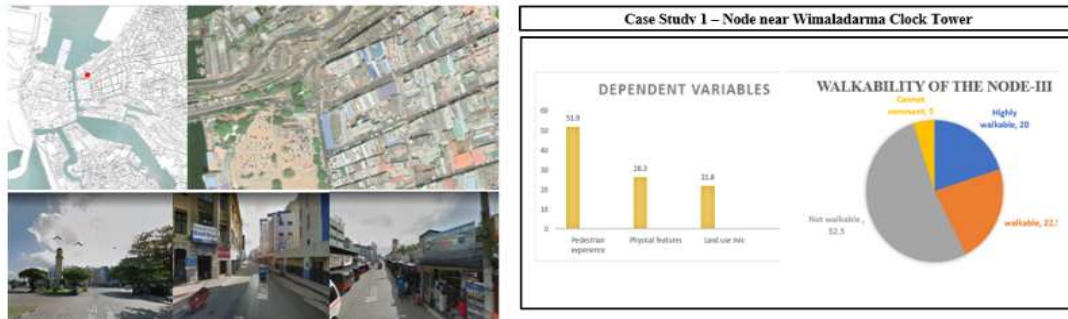


Fig. 05: Detailing of Case Study 3 and Primary Data Input.
Source: Author (2023).

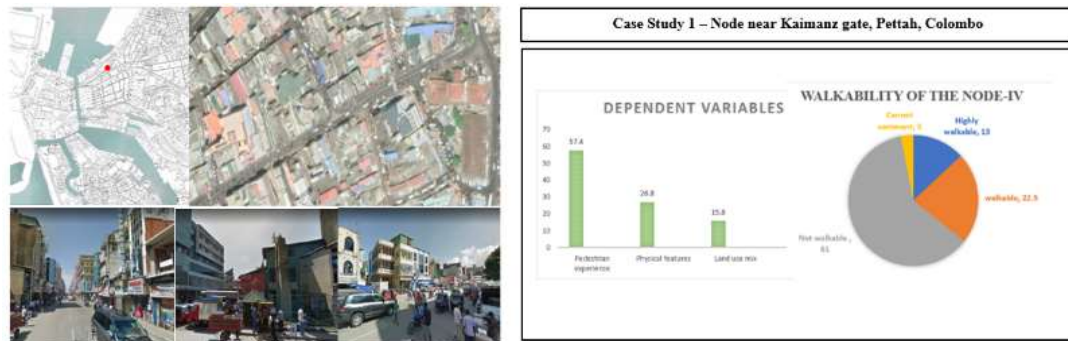


Fig. 06: Detailing of Case Study 4 and Primary Data Input.
Source: Author (2023).

	Highly walkable (1)	Walkable (2)	Not Walkable (3)	Cannot comment (4)	Total Perceived as walkable (Total= 1+2) (5)	Perceived as not walkable (Total= 3) (6)	Least perception (5 or 6) + 4 (7)
CASE STUDY I	32.5	42.5	25	0	75	25	25+0=25
CASE STUDY II	85.7	9.5	0	2	95.2	0	0+2=2
CASE STUDY III	20	22.5	52.5	5	42.5	52.5	42.5+5=47.5
CASE STUDY IV	13	22.5	61	3	35.5	61	32.5+3=35.5

Table. 04: Independent Variables as perceived in the case study.
Source: Author (2023).

	CASE STUDY I	CASE STUDY II	CASE STUDY III	CASE STUDY IV	TOTAL (out of 400)	PERCENTAGE
Dependent variable I- User experience	36.7	59.7	51.9	57.4	205.7	51.42 – 51%
Dependent variable II – Physical attributes	24.3	19.3	21.8	15.8	81.2	20.3 – 20%
Dependent variable III – Land use mix	35.1	21	26.3	26.8	109.2	27.3 – 27%

Table. 05: Contribution of Dependant Variables.
Source: Author (2023).

Based on the location-specific criteria affecting user perception on walkability, and the universal criteria drawn from literature sources, 16 criteria were listed to be applied to Colombo urban morphology, through which, the prospective and retro-prospective are identified.

1. Safe walk besides roads for pedestrians
2. Mixed land use patterns
3. Residential uses mixed with commercial, trade & recreational activities
4. Integration of the streets
5. Smaller Street blocks with appropriate connections
6. Streets with manageable width and vehicular movement to match human scale
7. No private vehicles parked on the streets or in any other pedestrian spaces
8. Parking for automobiles
9. Improved public transport/ transit connectivity
10. Promote biking facilities
11. Law and policy addressing walkability
12. Friendly and unique streetscapes
13. Identity and character
14. Interesting open spaces
15. Trees shading the streets
16. Lifestyle and culture

PROSPECTIVE	RETRO PROSPECTIVE
1. Existing pavements and roadside barriers in the physical context of Fort and some part of pettah	1. activity patterns at pettah, which does not allow to demarcate pedestrian spaces <i>- can make them fully walkable without vehicles</i>
2. Existing land use mix	2. larger street blocks in the present <i>- occurred pedestrian paths within the street blocks can be developed</i>
3. Existed street block sizes are more walkable than the present expanded ones <i>- the existing pedestrian paths at pettah within one street blocks are a prospective which can be developed in future</i>	3. wide streets and heavy vehicular movement defeating the human scale
4. integration of existing street layout	4. Absence of proper parking slots and vehicles parked on streets <i>- these parking can be designed and can mark the vehicle slots to park more</i>
5. Friendly and unique streetscape in both Fort and Pettah areas	5. Lack of public transport services penetrating to Fort and pettah inlands <i>- implementing shuttle services into Fort and pettah streets</i>
6. Strong identity and noticeable character	6. No provision for biking
7. Vegetation cover shading most of the streets of the Fort	7. Lack of law and policy addressing walkability
	8. Lack of open interesting spaces affordable to all the people <i>- can dedicate few spaces in fort and pettah for this function such as parking</i>
8. Cultural identity that influence people to walk	9. Changed lifestyle of the present generation towards automobile usage and private vehicles
9. Future developments mixing the land use more	

Table. 06: Results summary of Assessing Criteria.

Source: Author (2023).

Conclusion

Colombo possesses significant potential to sustain walkability. However, the elements that can facilitate the aforesaid remain unintegrated due to a lack of appropriate planning conceptions. Ancient Sri Lankan culture and its urban settlements were inherently walkable prior to colonial invasions and globalization that in turn influenced urban development. Over time, with modernization of cities, walkability was gradually diminished.

Despite its importance, none of Colombo's planning interventions have effectively incorporated the concept of walkability. Meanwhile, its success has been demonstrated in the cities belonging to a number of countries. Many of these cities have leveraged factors such as historical significance, strong urban identity, favourable climatic conditions, and preserved colonial structures – qualities that Colombo also inherently possesses. This critical analysis of the four case studies concludes that users in Colombo perceive an environment as walkable, only when it provides a safe pedestrian path/space, complemented by a diverse mix of activities that offer multiple options within a single setting. The results of the analysis clearly indicate that the potential to sustain walkability in Colombo outweighs the challenges that hinder it. Based on user perceptions, the city requires a mixed-use approach to land development, reinforcing street-level activities, while ensuring that the built environment's physical attributes support these functions. This necessity aligns with the theory pertaining to psychology of place (which identifies three fundamental elements of space), as illustrated in the diagram below.

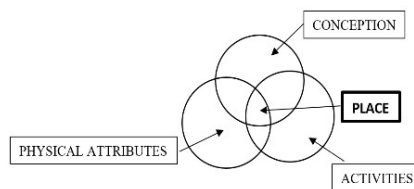


Fig. 07: Basics elements of the space.

Source: Canter (1976).

If Colombo's streetscapes are to be reorganized with walkability as a core strategy for sustaining the city, it will require a diverse mix of activities integrated with safe and adequate pedestrian paths/spaces. Regardless of the specific methods used to achieve walkability, this study demonstrates the high compatibility of Colombo with the concept of walkability.

While sustainability is a complex and multidisciplinary subject beyond the full scope of this study, understanding Colombo's prospective and retro-prospective aspects in relation to walkability can pave way toward a more sustainable urban future. Re-establishing historical and strategic values will not only restore the city's identity, but also encourage people to engage with and appreciate their own urban environment rather than bypassing it.

A walkable city will redefine lifestyles for future generations, fostering social development and strengthening the bond between society, nature and the built environment. In turn, this transformation will contribute to economic growth, enhancing Colombo's role as a thriving urban centre. If Colombo's social, historical, geopolitical and economic assets are reshaped into a walkable future city, it will have everything necessary to truly become a great city.

The study limits its scope to a few selected physical dimensions. Given this, applying the concept of walkability to Colombo's urban landscape as a whole may require extensive research across multiple disciplines. Key considerations beyond this study include climatic factors, sociological and cultural background of the community, perceptions of daily city users (such as shop owners and hawkers) as well as development proposals, policy agendas and regulatory decisions imposed by city authorities. Addressing these broader aspects, which fall beyond the scope of this study, could contribute to a comprehensive and well-founded proposal for implementing walkability in Colombo's CBD.

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