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Urban congestion and transport inefficiencies: Implications for livability in Dhaka City

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Abstract
Urban livability refers to the degree to which urban environments foster long-term well-being and satisfaction among residents through adequate environmental quality, safety, accessibility, and sufficient social infrastructure, including housing, healthcare, education, green spaces, and transportation. This study assesses the impact of urban congestion and transport inefficiencies on livability in Dhaka City. It specifically explores indicators for measuring urban livability, analyzes the interrelationship between livability and transportation systems, and identifies associated challenges. Employing a qualitative approach, the research relies on secondary data from books, peer-reviewed journal articles, official reports, and reputable news portals. The findings indicate that urban congestion and transport inefficiencies significantly undermine livability in Dhaka. Rapid population growth exacerbates issues such as inadequate public transportation, missing essential infrastructure, and safety concerns. These problems cause substantial economic losses, impair public health through pollution and stress, and stem from overlapping institutional responsibilities and poor planning of housing and roadways. The study proposes targeted recommendations to address these challenges and enhance residents' quality of life in Dhaka City.

Keywords
Urban Congestion, Transportation Inefficiency, Urban Livability, Quality of Life, Dhaka City.

1 | INTRODUCTION

Urban congestion and transport inefficiencies represent major barriers to sustainable urban growth. They severely degrade quality of life by elevating pollution levels, increasing economic costs, and limiting mobility, thereby restricting access to employment, services, and social opportunities (Filippi, 2022). Rapid urbanization and industrialization offer significant opportunities for personal and societal advancement, fostering economic prosperity in cities. However, this dual nature also imposes substantial strain on welfare systems, residents' overall well-being, and environmental conditions in metropolitan areas worldwide. Congested roadways have emerged as a global issue, driven by rising urban populations and vehicle ownership. For instance, traffic congestion costs the European Union economy approximately 100 billion euros annually Li et al., (2024), while also contributing to energy inefficiency and environmental degradation (Bao et al., 2023).

Urban design often overlooks micro-scale elements of transportation infrastructure, such as bus stops, sidewalk configurations, pedestrian perceptions, and features like traffic-calming measures and parking provisions. These aspects frequently receive insufficient attention due to competing priorities. Sustainable urban transitions demand long-term, visionary changes in practices, technologies, infrastructures, markets, and institutions, supported by flexible governance and adaptive policies. Urban streets serve multiple functions—transport, recreation, socialization, and more—evolving into vital social spaces that foster community interaction and cohesion (Rui & Othengrafen, 2023a). Considering these dynamics of urban growth and their links to transport challenges, this study examines the implications of transport inefficiencies and congestion on livability in Dhaka City and explores feasible strategies to reduce such inefficiencies for a more livable urban environment.

This research provides a novel contribution by adopting an integrative framework that links urban livability indicators with transport inefficiencies in a high-density, rapidly urbanizing city. Unlike prior studies that largely examine congestion or livability in isolation, this study explicitly investigates the reciprocal relationship between transport systems and quality of life, encompassing social, environmental, and infrastructural dimensions. Furthermore, it emphasizes context-specific policy and design solutions, offering actionable recommendations for urban planners and policymakers to enhance resilience, equity, and livability in Dhaka and similar metropolitan areas.

The primary objective of this study is to assess the impact of urban congestion and transport inefficiency on urban livability in Dhaka City. To support this broader objective, the study aims to (1) explore the indicators used to measure urban livability and quality of life, (2) analyze the interrelation between urban livability and transport in Dhaka City, and (3) identify the challenges associated with urban congestion and transport inefficiencies in relation to the city's urban livability (Bailey & Otsuki, 2025).

2 | REVIEW of LITERATURE

2.1 | Urban Livability- the Concept

Urban livability refers to the extent to which a city or metropolitan area supports an adequate standard of living for its residents. It encompasses the degree to which a city's infrastructure, services, policies, and built environment promote the mental, social, and physical well-being of its inhabitants (Hedayatnezhad Kashi et al., 2025). However, the concept remains contested, as "livability" can hold different meanings for different individuals and stakeholders (Lopes Balsas, 2023).

Quality of life, while widely understood intuitively, is similarly difficult to define universally. A livable community is generally characterized as safe, clean, attractive, economically vibrant, accessible to diverse populations, and well-managed. Such communities typically feature abundant green spaces, active cultural institutions, reliable public transportation, plentiful employment opportunities, and robust infrastructure, all of which contribute to a strong sense of community (Mei et al., 2022).

These guidelines outlined the basic standards for assessing human settlements and formed the cornerstone of later livable city assessment frameworks (Bedi et al., 2023). The determination of livability furthermore considers intricate social, economic, and environmental aspects that are accompanied by ambivalence and contradictio. Recognizing the intricacies of urban governance requires a multidisciplinary approach that incorporates expertise from disciplines such as environmental science, sociology, and urban planning (El-Kholei et al., 2025).

2.2 | Indicators of Urban Livability and Quality of Life

The assessment of living standards has become a prominent focus in the growing body of both empirical and theoretical studies in recent years (Ngo, 2018). Nevertheless, it is evident that no universally agreed-upon criteria exist for evaluating livable cities or communities. This stems primarily from the subjective nature of livability, which entails a comprehensive evaluation of cities or communities as complex socio-technical systems. Consequently, livability assessment metrics are commonly categorized into objective and subjective indicators. In the context of urban planning and design, however, quality of life represents a multifaceted concept encompassing environmental, macro-socio-economic, and other dimensions. It addresses virtually every aspect of urban existence, including transportation, housing, green spaces, education, and infrastructure development (Francesconi et al., 2023). Table 1 presents and organizes indicators across major urban domains (e.g., economy, land, transportation, environment, and social aspects). By doing so, it reveals the interconnections among different facets of urban life and their combined contribution to overall well-being.

Table 1. The indicators of urban livability and quality of life

Topic	Indicators	Livability Factors	Quality of Life Benefits
Urban Economy	Economic Vitality	Job Opportunities, Availability of Services	Income Generation, Financial Security
Urban Land	Lands Conserved	Housing, Location, Affordability	Shelter, Safety & Security
Urban Transportation	Congestion, Freight Transport	Mobility, Safety, Regular Communication	Independence of Movement, Reasonable Travel Times
Urban Environment	Air Quality, Lake/River/Groundwater Quality, Biological Diversity	Parks, Open Space, Aesthetics, Noise, Greenhouse Gases	Physical and Mental Health, Protection from Natural Hazards
Urban Social	Cultural Assets, Outdoor Recreational Access, Walkability	Equitable Distribution of Amenities	Social Justice, Equality, Access

This structured presentation highlights that urban livability emerges from the interplay of objective urban conditions (livability factors) and the resulting subjective experiences and benefits for residents (quality of life outcomes). By grouping indicators into key domains, the table reveals interconnections such as how improved transportation reduces congestion and travel times while enhancing mobility and independence ultimately supporting more integrated, sustainable, and resident-focused urban planning.

2.3 | Indicators of Urban Livability and Quality of Life

The relationship between urban livability and transportation can be understood through several interrelated dimensions that illustrate how mobility systems shape quality of life in cities (Rui & Othengrafen, 2023b). Transportation serves not only as a means of moving people and goods but also as a key determinant of accessibility, equity, social cohesion, and economic productivity. A well-integrated and sustainable transport system enables residents to access essential services—such as healthcare, education, and employment—while promoting inclusivity for marginalized groups and helping to reduce socioeconomic disparities (Cottrill et al., 2020). Furthermore, urban design approaches such as Transit-Oriented Development (TOD) prioritize compact, connected, and people-

centered cities, in which transportation infrastructure fosters both community interaction and environmental sustainability. At the same time, effective transport planning enhances economic competitiveness by alleviating congestion, reducing travel costs, and bolstering long-term urban resilience. The following points elaborate on these key dimensions to demonstrate how transportation directly influences urban livability (Baobeid et al., 2021).

Global demand for inclusive, responsive, and sustainable cities has emerged alongside rapid urbanization (Goel & Vishnoi, 2022). Accessibility, safety, and environmental sustainability constitute key dimensions of quality of life that are integral to urban livability. Transportation significantly influences residents' daily experiences and living conditions, making it a critical determinant of overall livability. A highly efficient, inclusive, and environmentally responsible transportation system enhances productivity, social inclusion, public health, and environmental quality by mitigating deterioration.

Strengthening the linkages between transportation and urban livability is essential for building robust, people-centered cities. Quality-of-life considerations have long been recognized as a foundational principle in development planning literature (Hrivnák et al., 2021). While life itself is fundamental, so too is its quality particularly in discussions of urban well-being. Transportation infrastructure profoundly affects access to healthcare, employment, education, and recreational opportunities. Inadequate infrastructure leads to persistent traffic congestion and limited service availability, whereas well-designed systems reduce travel times, costs, and stress. Transportation plays a pivotal role in urban livability by enabling people to reach jobs, services, and opportunities. Robust public transit systems empower lower-socioeconomic groups and help narrow wealth disparities. Without equitable transportation, certain populations risk isolation, which in turn deepens socioeconomic divides and perpetuates cycles of urban poverty (Toolis, 2021).

Transportation equity is essential to ensure that all city dwellers have access to safe and affordable mobility, regardless of their economic class, gender, or ability (Hail & McQuaid, 2021). By addressing the specific mobility challenges faced by women, children, the elderly, and people with disabilities, gender-inclusive and participatory planning approaches can significantly enhance urban livability. Inclusive transport planning in livable cities reduces discriminatory barriers to mobility and guarantees safe, affordable transit for all demographic groups, thereby fostering social cohesion and a stronger sense of community belonging. Compact cities worldwide such as Barcelona, Spain exemplify superior urban design through shorter commutes via public transportation, higher densities, greater land-use diversity, and improved accessibility (Dasgupta et al., 2022). These cities often benefit from increased use of public transport, walking, and cycling, alongside reduced energy consumption, fewer pedestrian fatalities, greater physical activity, and lower overall transportation costs. A city's vision for safe, efficient, and enjoyable mobility directly influences its livability. Transit-oriented development (TOD), by promoting mixed-use, high-density development near public transport hubs, shortens commute times and strengthens community engagement (Islam, 2018). Public transportation systems facilitate interaction across diverse demographic groups, while strategic infrastructure investments shape daily routines, enhance social interactions, and improve urban aesthetics, safety, and inclusivity (Schiller & Kenworthy, 2017).

Well integrated transportation networks streamline logistics, reduce travel times, alleviate traffic congestion, and thereby enhance urban productivity and economic growth (Sahu et al., 2022). Poorly managed transportation systems, by contrast, generate significant financial losses through fuel wastage, delayed deliveries, and reduced operational efficiency. Cities such as Singapore, Tokyo, and Copenhagen demonstrate how strategic investments in public transportation can confer competitive advantages, attract talent, generate revenue, and strengthen long-term urban resilience.

In the context of Dhaka, Bangladesh, research has shown that improvements to existing road conditions and intersection features can substantially reduce congestion. Intersections form a critical component of the urban traffic system, and targeted interventions at key city crossroads have proven effective in minimizing vehicle delays.

The findings indicate that flyovers, in particular, can significantly alleviate intersection-level congestion by reducing waiting times and shortening overall commute durations (Rachmat Mudiyono, 2025). Although conventional, supply-side infrastructure approaches are increasingly inadequate, there remains limited research exploring the linkages between urban livability and sustainable transportation. A deeper understanding of this relationship is essential for implementing targeted, sustainable transport strategies that integrate considerations of social equity, economic prosperity, the built and natural environment, education, and recreation—ultimately contributing to more livable communities (Hariram et al., 2023).

3 | METHODS

This study adopts a qualitative research approach through a systematic literature review to examine the impact of urban congestion and transport inefficiencies on urban livability in Dhaka City. The methodology is exploratory and descriptive in nature, relying exclusively on secondary data sources to synthesize existing knowledge, identify patterns, and draw evidence-based conclusions.

3.1 | Data Collection

Secondary data were collected from credible and publicly accessible sources to ensure the reliability and relevance of the information gathered for this study (Ranney et al., 2015). These sources encompassed a wide range of materials, including peer-reviewed journal articles that provide empirical insights into urban congestion and transport issues, as well as books offering theoretical frameworks on livability and urban planning (Schlunegger et al., 2024). Additionally, official reports from international organizations such as the Economist Intelligence Unit, World Bank, and Asian Development Bank were utilized to incorporate global perspectives and statistical data on urban development challenges in megacities like Dhaka.

Government publications played a key role in providing localized context, with documents from entities like the Bangladesh Road Transport Authority (BRTA) and Dhaka Metropolitan Police (DMP) offering detailed insights into regulatory frameworks, infrastructure statistics, and enforcement practices. Reputable news portals were also consulted to capture real-time developments, public opinions, and case studies on transport inefficiencies. This diverse selection of sources helped in triangulating data to mitigate biases and enhance the comprehensiveness of the analysis.

Key databases and search engines facilitated the systematic retrieval of these materials, including Google Scholar for academic papers, ResearchGate for collaborative research outputs, JSTOR and Scopus (where accessible) for indexed journals, and official institutional websites for direct access to reports and policies. The search process was conducted between January and June 2025, focusing on recent publications to align with evolving urban dynamics in Dhaka, ensuring the data remained current and applicable to the study's objectives.

3.2 | Search Strategy and Inclusion Criteria

The literature search employed targeted keywords and Boolean operators, such as Dhaka traffic congestion, Dhaka transport inefficiency, urban livability Dhaka, Dhaka Global Liveability Index, Dhaka road infrastructure, and Dhaka public transport challenges, combined with terms like impact on quality of life, economic effects, health implications, and governance issues to ensure comprehensive coverage of relevant themes. To maintain recency and alignment with current urban dynamics in Dhaka, inclusion criteria focused on publications released between 2015 and 2025, sources written primarily in English as the main language of analysis, materials that directly addressed urban congestion, transport systems, livability indicators, or associated challenges in Dhaka or comparable South Asian megacities, and high-credibility outlets such as peer-reviewed journals, reputable reports, and official statistics.

Exclusion criteria eliminated non-empirical opinion pieces, outdated data from before 2015 unless serving as foundational references, and studies lacking a direct focus on Dhaka or without meaningful comparative value to its context. Through this rigorous process, approximately 60-70 sources were initially screened for relevance, resulting in more than 45 selected for in-depth analysis and synthesis. This approach allowed for a balanced,

evidence-based exploration of the interconnections between transport inefficiencies and urban livability while prioritizing reliable and up-to-date information.

3.3 | Data Analysis

A thematic content analysis was conducted to systematically identify and interpret recurring themes across the collected literature, including key indicators of urban livability, the interrelations between transport systems and quality of life, major challenges such as institutional overlap and infrastructure deficits, and various proposed solutions for mitigating congestion in Dhaka. The data were synthesized narratively to build a cohesive understanding of these elements, with supporting tables incorporated for clearer comparative visualization of critical aspects like the Economist Intelligence Unit rankings over time, responsibilities of key government agencies, and the multifaceted impacts of congestion on economic, health, environmental, and social dimensions. To enhance reliability and reduce potential bias from any single source, cross-verification was applied by comparing findings from multiple independent publications, reports, and datasets, ensuring a balanced and evidence-based representation of the research findings (Dawson, 2002; Gibson, 2017; Ranney et al., 2015).

This analytical process allowed for the emergence of patterns that link transport inefficiencies directly to declining livability scores, while highlighting governance and infrastructural gaps as persistent barriers. By organizing the synthesis around thematic clusters rather than isolated facts, the analysis provided deeper insights into how urban congestion exacerbates broader quality-of-life issues in a rapidly growing megacity context. Overall, the approach maintained objectivity through rigorous triangulation of sources, enabling credible conclusions and actionable recommendations grounded in the reviewed body of evidence.

4 | FRESULTS AND DISCUSSION

This study demonstrates how urban congestion and transport inefficiencies profoundly affect residents' quality of life in Dhaka City (Conceição et al., 2023). Rapid population growth continues to exert intense pressure on green spaces, infrastructure, and housing, further exacerbating environmental degradation. According to the Economist Intelligence Unit's Global Liveability Index, Dhaka has consistently ranked among the least livable cities worldwide in recent years (see Table 2). The city's low scores are particularly evident in infrastructure, healthcare, and environmental quality.

Table 2. The rank of Dhaka City in recent years

Year	Rank	Index	Stability	Health Care	Culture and Environmental	Education	Infrastructure
2025	171	41.7	45.0	41.7	40.5	66.7	26.8
2024	168	43.0	50.0	41.7	40.5	66.7	26.8
2023	166	43.8	50.0	41.7	40.5	75.0	26.8
2022	166	39.2	55.0	29.2	40.5	41.7	26.8
2021	137	33.5	55.0	16.7	30.8	33.3	26.8
2019	138	39.2	55.0	29.2	40.5	41.7	26.8
2018	139	38.0	50.0	29.2	40.5	41.7	26.8
2017	137	38.7	50.0	29.2	43.3	41.7	26.8
2016	137	38.7	50.0	29.2	43.3	41.7	26.8
2015	139	38.7	50.0	29.2	43.3	41.7	26.8
2014	139	38.7	50.0	29.2	43.3	41.7	26.8
2013	139	38.7	50.0	29.2	43.3	41.7	26.8
2012	140	38.7	50.0	29.2	43.3	41.7	26.8

To begin with, one of the clearest impacts of urban congestion is reflected in the low livability index rating of South Asian cities. The factors considered while evaluating livable cities - infrastructure, education, culture and environment, health care, and sustainability (Saeed et al., 2022). The Economist Intelligence Unit's edition of 2021 has declared that both Dhaka & Karachi, both are among the top ten least livable cities in the Asia-Pacific region (Anjum, 2022). Despite its high cost, Dhaka has a low livability index rating primarily because of the insufficient planning. This is due to the weakness of our planning and governing the body. The city is becoming progressively unlivable as it gets more expensive over time and additional people moving thither (Onetto Pavez, 2023). According to the Economist Group's 2024 Global Livability Index, Dhaka fell two spots to 168th place.

Building on this low livability index, traffic congestion emerges as a critical factor that exacerbates the situation in cities like Dhaka. According to the view of Rahaman et al., (2023), Bangladesh's capital city, Dhaka, is experiencing a serious traffic concern as the consequence of its swift urbanization and surge in population. As the capital of Bangladesh, Dhaka city is experiencing an overcrowding situation where a lot of environmental issues, economic issues as well as social & political issues are uprising at present. However, traffic congestion kills valuable time of the working people, students of different levels, etc. The traffic congestion falls on students, who often arrive late at classes and colleges. In addition to impairing their academic performance, this leads to practical problems for parents and educators who find it difficult to control schedules and guarantee punctuality (Kearney et al., 2023). On the contrary it reduces the option of getting emergency services in time, especially related to health.

The problem of traffic congestion is further intensified by poor spatial and infrastructure planning (Zhao & Hu, 2019). The improper planning of roads & infrastructures in Dhaka city has resulted in the loss of green space, spacious roads, etc. Poor spatial planning and outdated road infrastructure compound the issue. Dhaka's road network covers only 7–8% of the city's area—far below the 25% recommended for major urban centers. Many roads are narrow, poorly maintained, and prone to flooding during monsoons. Ongoing projects such as elevated expressways, flyovers, and metro lines have further reduced available road space in some areas, creating bottlenecks (Subair et al., 2024).

Since public transportation is frequently risky and unreliable, many locals prefer private vehicles including motorcycles and cars (Risdiyanto et al., 2022). Every year, thousands of new cars enter Dhaka's roads, significantly straining the city's already overburdened infrastructure. The unbridled expansion of private transit has only made traffic in the metropolis worse. Urban congestion causes economic loss as it kills hours of the individuals working in different sectors- office workers, business owners as well as daily laborers. They suffer greatly from prolonged commutes, which degrade working efficiency and productivity. Except for causing financial damage, Dhaka's traffic congestion takes a severe toll on public health. Air pollution from vehicular emissions contributes to rising cases of respiratory diseases, cardiovascular problems, and other pollution-related illnesses. Noise pollution, caused by constant honking and gridlocked roads, leads to increased stress and mental fatigue, further diminishing the quality of life. In addition, traffic delays for emergency vehicles often mean the difference between life and death. Hence, urban congestion & transport inefficiency not only hampers the economic sector (Suganya et al., 2025). The findings of this study stating the impacts as summarized below:

Due to the frequent risks and unreliability of public transportation, many residents prefer private vehicles, such as motorcycles and cars (Risdiyanto et al., 2022). Each year, thousands of new vehicles are added to Dhaka's roads, placing immense additional strain on the city's already overburdened infrastructure. This unchecked growth in private vehicle ownership has further exacerbated metropolitan traffic congestion. Urban congestion generates substantial economic losses by consuming productive hours across various sectors including office workers, business owners, and daily laborers. Prolonged commutes significantly reduce work efficiency and overall productivity. Beyond these financial impacts, Dhaka's traffic congestion imposes severe consequences on public health. Vehicular emissions contribute to rising incidences of respiratory diseases, cardiovascular conditions, and other pollution-related illnesses. Persistent noise pollution from constant honking and gridlocked traffic increases stress levels and

mental fatigue, further eroding residents' quality of life. Moreover, delays affecting emergency vehicles can have life-threatening implications.

Consequently, urban congestion and transport inefficiencies not only undermine the economic sector but also compromise public health, environmental quality, and social well-being (Suganya et al., 2025). The key impacts identified in this study are summarized in Table 3 (presented earlier).

Table 3. Key Effects of Urban Congestion in Dhaka

Area of Impact	Consequences
Time & Economy	Loss of Office Hours, Less Productivity, More Cost.
Education, Health & Well-being	Delays, Poor Air Quality, Sound Pollution or Noise Quality, Stress, Illness, etc.
Environment	Pollution Surge, Sprawl, Loss of Green Spaces, Ecosystem Damage, etc.
Infrastructure	Rise of Maintenance Cost, Transit Systems Overstretched, etc.
Lifestyle	Sedentary Habits, Family/Community Strain.
Social Equity & Safety-Security	Pedestrian Exclusion, Delay in Emergency Services, Unequal Healthcare Access, etc.

Over 31 agencies have been established in Dhaka, reflecting the city's growing population and transportation needs. These government agencies play a crucial role in formulating policies, developing infrastructure, regulating, and enforcing traffic laws. Table 4 below outlines the six main government agencies responsible for Dhaka City Transportation and their responsibilities.

Table 4. Key Effects of Urban Congestion in Dhaka

Name of Agency	Governing Act/Ordinance / Rules	Nature of Authority	Key Responsibilities
Dhaka Transport Coordination Authority (DTCA)	Dhaka Transport Coordination Authority Act, 2012	Policy formulation, planning & monitoring	Strategic transport planning, public transport policy, traffic management, safety initiatives, coordination of operations in Dhaka Metropolitan Area
Dhaka North City Corporation (DNCC)	The Local Government (City Corporation) (Amendment) Act, 2011	Infrastructure development, maintenance & enforcement	Street cleaning, road & lane maintenance, traffic signals, lights, asset preservation and improvement
Dhaka South City Corporation (DSCC)	The Local Government (City Corporation) (Amendment) Act, 2011	Infrastructure development, maintenance & enforcement	(Similar to DNCC, focused on southern Dhaka zones: roads, cleaning, signals, assets)
Dhaka Metropolitan Police (DMP)	The Motor Vehicles Ordinance, 1983; The Dhaka Metropolitan Police Ordinance, 1976	Traffic management & enforcement	Enforcement of traffic rules, parking regulation, lane discipline, pedestrian crossings, footpath usage

Rajdhani Unnayan Kartipakkha (RAJUK)	The Town Improvement Act, 1953; Dhaka Improvement Trust (Allotment of Land) Rule, 1969	Planning & approval	Land-use planning, zoning control, master plan preparation, major road development for Dhaka Metropolitan Area
Bangladesh Road Transport Authority (BRTA)	The Motor Vehicles Ordinance, 1983	Regulatory	Vehicle registration, driver licensing, route permits, roadworthiness certification, road safety standards, bus route planning, detection of faulty vehicles

Based on literature findings, there are various challenges and possible solutions to urban congestion-related issues (Faheem et al., 2024). To begin with, the root of many transportation challenges in Dhaka lies in institutional disintegration and weak governance. The study found that six Government bodies (DMP, BRTA, RAJUK, DSCC, DNCC, DTCA) are in charge for transportation management in Dhaka city. Nonetheless, performing responsibilities conflicting expeditions, ineffective collaboration, and a lack of enforcement authority, that ends up in project delays, cost overruns, and disorganized execution. Hence the establishment of a Unified, Empowered Metropolitan Authority can reduce the overlapping situation by shaping the core responsibility. For instance, sharpening the Dhaka Transport Coordination Authority's (DTCA) exposure to other agencies, growing its technical staff, and extending its mandate authority, etc. can be done (Ahasan et al., 2023).

Building on governance shortcomings, the inadequate public transport system further aggravates the situation (Ahasan et al., 2023). Rising living standards have increased demand for private automobiles in Dhaka, yet the existing transport system cannot meet this growing need.The fragmented bus network—comprising 291 routes operated by over 2,500 private companies fuels intense competition, resulting in erratic stops, reckless driving, overcrowded and poorly maintained buses, and exclusion of vulnerable groups (elderly, disabled, and women). Fierce rivalry among operators leads to unscheduled stops and traffic violations that obstruct other vehicles. Data show that more than ten operators often share the same 50 bus stops (Cohen & Cavoli, 2019). Reallocating street space is therefore essential. Cities should prioritize protected bicycle lanes (targeting 500 km by 2030), establish car-free zones in key commercial areas, and strictly enforce no-parking regulations, as illegal parking currently consumes roughly one-third of road space. A major structural barrier is the severe lack of road infrastructure: only 7–8% of Dhaka's land is devoted to roads, compared with 25–40% in most major global cities. These narrow, poorly maintained roads lack dedicated pedestrian paths or emergency lanes, worsening congestion and accident rates. High land costs, utility relocations, and concurrent projects (e.g., expressways and MRT lines) cause frequent disruptions and delays. To mitigate congestion, key intersections require intelligent interventions such as roundabouts, tidal flow systems, and synchronized traffic signals (Chester & Allenby, 2019).

In addition to these infrastructure limitations, Dhaka also faces the challenge of pervasive regulatory & behavior dysfunction: Because of widespread corruption and insufficient oversight, the effectiveness and fairness of the system are deteriorated by inducement, phony licenses, disregarded traffic signals, unauthorized stoppages, and encroachments. However, franchising public transportation operations can reduce fierce competition by combining dispersed bus and rickshaw services into regulated businesses that are all accountable and responsible (Cohen & Cavoli, 2019). As a direct result of such weak regulation, the problem escalates into escalating congestion cost, deteriorating air quality & public health: Vehicle speeds have decreased from about 21 km/h to somewhere between 4–7 km/h on average (Lu et al., 2021). commuters lose 2.4–3 hours every day, which adds up to about 3–5 million lost working hours every day and costs the economy tens of thousands of crores annually; roughly 3–6% of the GDP. Dhaka often ranks among the cities with the poorest air quality, and stagnant traffic contributes

significantly to CO_2, NO_x, and PM_5 emissions. This causes rises in respiratory, cardiovascular, and stress-related diseases and contributes to thousands of early fatalities. Adopting road rationing or congestion charging can be done by imposing taxes on vehicles during rush hours and allocating the proceeds to active transportation and public transportation to mitigate emissions and traffic (Liu et al., 2023). Ultimately, all of these challenges culminate in heightened safety risks & emergency access barriers: Those who are more likely to be excluded and have less access to work, education, healthcare, and urban amenities incorporate low-income families, women, the elderly, people with disabilities, and people without private transportation (Ullah et al., 2023). In addition to preventing prompt ambulance access and contributing to high accident rates, narrow roads, a lack of sidewalks, blocked emergency lanes, and busy intersections further increase mortality. Particularly on major thoroughfares and congested regions including Old Dhaka, allocating and enforcing specific lanes for police, fire engines, and ambulances etc. are much more required (Wozniak et al., 2021).

5 | CONCLUSION

This study has demonstrated the significant implications that Dhaka City's urban congestion and transit inefficiencies have on the city's living conditions. The quality of life for people living in Dhaka has been adversely affected by heavy traffic, long travel times, rising pollution, and deteriorating public health, all of which are caused by rapid urbanization, poor infrastructure, and inadequate traffic management. Mobility and accessibility are further hampered across the city by an over-reliance on private automobiles, a dearth of secure pedestrian and bicycle routes, and a lack of public transportation choices. The discoveries additionally disclose that these inefficiencies have significant negative social and financial effects. In addition to wasting productive hours and driving up transportation costs, daily congestion disproportionately impacts low-income and marginalized populations that depend on accessible, effective mobility options. In addition to financial losses, the environment's decline, which is fueled by increased air and noise pollution, puts public health at risk and makes cities less livable across. It requires a comprehensive and well-coordinated approach to address these issues. A more livable and resilient Dhaka can be achieved by effective traffic law enforcement, public transportation network growth, sustainable urban planning, and large investments in mass transit and non-motorized alternatives to travel. Furthermore, to reverse the identified detrimental trends, it is imperative to improve public awareness, strengthen institutional capacity, and ensure transparent policy execution. In the end, reducing urban traffic and inefficient transit is not just a convenience issue; it is a crucial factor in determining Dhaka's future development and sustainability. By installing these tactics into practice, we as a community can enhance mobility, encourage inclusion, and assist in re-establishing the harmony between environmental preservation and economic growth. It is imperative that policymakers adopt evidence-based, long-term reforms going forward to make Dhaka City safer, healthier, and more habitable for each one of its citizens.

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Disclosure Statement

The authors declare no conflicts of interest that could have influenced the outcomes or interpretations of this research. All analyses and conclusions drawn are independent and free from any commercial or financial bias.

Data Availability Statement

The data underlying the findings of this study are available from publicly accessible secondary sources, including governmental reports, scholarly articles, and official transport and urban management datasets pertaining to Dhaka city. Interested researchers can access these data through online academic databases and official websites referenced in the study's bibliography. For further inquiries regarding the dataset or data extraction methods, the authors can be contacted to provide additional guidance aimed at ensuring transparency and reproducibility.

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