OpenMind Journal of Multidisciplinary Innovation & Development
Vol. 2, Issue – 5, (Sep-Oct) 2026
ISSN: 3108-2920 (Online)

Research Article

The Impact of Commuting Costs on Employment Decisions among Low-Income Workers in Satarkul, Badda, Dhaka

Md. Sidratul Muntaha Rakin*[1], Prof. Mohammad Shah Alam Chowdhury[2]

[1] *Research Assistant, Bangladesh Center for Research and Planning - BCRP, Dhaka International University*

[2] *Research Fellow, Nexora Research Foundation of Bangladesh*

***Related declarations are provided in the final section of this article*

ARTICLE INFORMATION

Received: 01 Oct 2026

Accepted: 25 Oct 2026

Published: 29 Oct 2026

Correspondence Author:

Md. Sidratul Muntaha Rakin*

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Abstract

The fast expansion of the urban periphery in Dhaka, Bangladesh has increased spatial inequality and has forced low-wage workers to move to under-served transition areas. This study investigates how commuting costs influence the employment decisions of low-income workers in Satarkul, Badda and the level of spatial mismatch and transport poverty in the periphery labor supply. We hypothesize that the combination of long transit delays and high first- and last-mile travel costs will erode the wage premiums offered by centralized economic agglomerations and push vulnerable workers into localized, informal and lower-paying jobs. The study adopted a qualitative secondary analysis design that merged empirical peer-reviewed literature, municipal documentation (RAJUK Detailed Area Plan 2022–2035), and institutional surveys published between 2010 and 2026 using inductive topic synthesis and source triangulation. The findings reveal that spending on commuting acts as a regressive economic tax, draining 18% to 32% of daily wages through an unregulated informal "feeder penalty." Anything above 2.5 hours of round-trip commute regularly causes chronic physical weariness and time impoverishment. This leads to a threshold of informal reservation for laborers, leading to higher turnover in formal central hubs, voluntary geographic enclosure and forced absorption into hyper-local informal trade and casual labor. The spatial trapping inhibits female workers more than anybody else, as their movement is limited by safety concerns at the street level and prohibitively expensive secure transit alternatives.

Keywords: Commuting costs; Low-income employment; Spatial mismatch; Transport poverty; Informal labor

INTRODUCTION

Many creating megacities tend to experience high levels of spatial fragmentation, commonly separating lower income communities from the main economic hubs (World Bank, 2018; UN-Habitat, 2020). The problem of limited transportation facilities is exacerbated in Dhaka, Bangladesh due to longstanding constraints on the transportation network, high levels of in-migration and high population densities (Haider & Papri, 2021). However, with the generation of large numbers of jobs in the garment industry, construction, informal job segment and home-based work by the capital, the spatial pattern of these three arenas is not of low-cost house areas. (Abedin et al, 2020) Accordingly, the housing costs are accessible to the low-wage work-socials who have an option to move into the peripheral or the transitional urban areas, where the formal transportation linkage is not really sufficient (Hasan et al., 2019; Roy et al., 2023).

The neat juxtaposition of peri-urban and urban is demonstrated in the example of Satarkul, an area situated at the eastern edge of the town of Dhaka, in the Badda union (RAJUK, 2022). Satarkul is located in close proximity to commercial and residential localities of Gulshan and Banani and unfortunately has not received any proper infrastructure. The key characteristics of the locality are the absence of organised and scheduled public bus service, complex drainage clogs with frequent occurrence and unpaved feeder roads (Rahman et al., 2017; Islam & Kabir, 2019). The residents' primary forms of transport are non-motorised (three wheelers with batteries), and a fragmented paratransit system that can come with high OoH expenses (Ahmed et al., 2021). The economic burden of moving to work sites is the economic penalty for low-income earners who earn marginal incomes (Farazi et al., 2022; Mahmud et al., 2024) while the physical cost of travelling to work places represents the physical burden.

Significant work has been conducted at the macro level of the transit system (Rahman, 2013; Abedin et al. 2020) and in general traffic congestion in Dhaka under various views. But research on traffic volume (quantitative) assessment and formal sector passengers has been limited. In the case of Satarkul periphery, the empirical literature about the influence of the transit cost on peripheral people's daily lives is scarce. Commuting costs go beyond simply what it takes to commute to work; they can also shape whether or not low-income workers can afford to seek a distant highpaying job, participate in hyper-local informal economic pursuits, or lose out on formal employment entirely as a result of wage-crunching and fatigue (Franklin, 2018; Cajal-Grossi & Kreindler, 2023). Furthermore, the structural constraints that female workers face for mobility and safety impose their limit on these (Sharmin et al., 2020; Karim et al., 2025).

The study examined how spending on commute affects the choice of which jobs low-income people make in Satarkul, Badda. The article studies the impact of transit poverty and fare variability, as well as spatial mismatch on the labour market mobility dynamics of marginalized

urban households. It's a qualitative analysis tool of secondary empirical and institutional data that was used in the paper.

General Research Objective:

To analyze the impact of commuting costs and transit frictions on employment choices and labor market participation among low-income workers in Satarkul, Badda, Dhaka.

Specific Research Objectives:

To explore the daily monetary expenditure and travel time stress of low-income commuters travelling from Satarkul to main employment zones of Dhaka.

To explore the influence of out-of-pocket transit fees and travel delays on workers' decisions to accept, keep or leave employment in centralised economic centers.

To explore the gendered mobility limitations, informal labour adaptations and coping mechanisms that influence workers' choices of local or external employment.

LITERATURE REVIEW

The links between physical access, transport costs and the labour market are mostly derived from the Spatial Mismatch Hypothesis (Kain 1968; Gobillon et al. 2007; Zenou 2009). Urban scholars have employed the framework they use to examine the circumstances of emerging megacities, and such efforts have generally modified this framework (e.g., Lucas, 2012; Salon & Gulyani, 2010; Oviedo & Guzman, 2020). At first the structure was intended to account for racialized spatial segregation and the tendency towards periphery employment in North American cities. In the Global South, urban transport poverty is complex and includes issues of low costs, high fares, physical fatigue, lack of connectivity to CBD, and the long travel time. The classical theories of urban rent and urban location (Alonso, 1964; Fujita, 1989) suggested a uniform relation between housing and transportation costs. Yet, current urban sprawl is often not accommodating to the poor as it moves them to peri-urban and transitional place with marginally cheaper housing and often poor public transport services (Guzman et al., 2017; Vasconcellos, 2014; Sietchiping et al., 2012). Geographic isolation significantly affects low-income workers because it often places barriers on their mobility in searching for employment; it decreases wages; and is a hindrance to career advancement (Bania et al., 2008; Johnson et al., 2017; Venter et al., 2019).

The conditions in Dhaka are worsened by its high population density, lack of order in urban development and severe traffic congestion, which is present all year round (World Bank, 2018; Haider & Papri, 2021). The current transport system in the city consists of a disjointed and poorly-regulated private bus fleet alongside non-mechanised transport (cycle-rickshaws) and motorised paratransit (Abeydin et al. 2020; Gallagher, 2016; Rahman, 2013). The excessive traffic jams lead to significant productivity losses and commuting time losses of all income groups, especially for the working poor population, which is non-private transport reliant (Haider & Papri, 2021; Mahmud et al., 2012). The wider Badda area in the eastern part of Dhaka, which covers Satarkul, is an example of peripheral settlements which are susceptible to these threats (BBS, 2018; RAJUK, 2022). Satarkul is a slum area which is a residential area having a high

density of population and low income of its residents who are engaged in industries, construction works, domestic works, and having small businesses (Hasan et al., 2019; Roy et al., 2023). Satarkul is situated in near proximity of economic centers such as Gulshan and Banani, but due to the lack of major roads, dirt side roads, lack of regular waterlogging and no regular public transport facilities, it is isolated areas (Rahman et al., 2017; Islam & Kabir, 2019; Ahmed et al., 2021).

This fact has been confirmed by empirical studies since 2010, which revealed that the commuting problem influences the decision of working individuals regarding their livelihood, through direct monetary costs, chronic time deficit and safety risks. Based on the literature on the subject, in Dhaka country the public transport and intermediary paratransit cost for low-income households ranges from 15% to 30% of their income (Abedin et al., 2020; World Bank, 2018; Farazi et al., 2022). Some poor households are also under pressure because of low economic status due to frequent and unregulated fare hike during the rainy season and during the peak hours (Hossain, 2011; Mahmud et al., 2024). This “commute tax” is generally regressive and may exclude commuters from certain formal employment opportunities compared with informal, lower paying work in their home cities (Cajal-Grossi & Kreindler, 2023; Banerjee & Duflo, 2019; Bryan et al., 2014).

Long traffic queues in turn which make the commuters to reach their jobs by peripheral routes spending more than 2 hours a day for less than 10 kilometres (Haider & Papri, 2021; Abedin et al., 2020). It causes enduring fatigue and reduces SRL in work life and affects employees' physical health eventually (Stutzer & Frey, 2012; Nie & Sousa-Poza, 2018; Chowdhury et al., 2022). The combinations of daily commuting to address wage disparities and gradually changing from centralised wage job to localised casual jobs, micro trading or localised informal gig work (Franklin, 2018; Astebro et al., 2020; Asghar et al., 2022).

There are significant spatial and economic inequalities within gender. Street harassment, unsafe living conditions and limited public transport are some ongoing systemic barriers for women working in Dhaka, particularly women employed in the ready-made garment and domestic service sectors (Sultana, 2019; Sharmin et al., 2020; Peters, 2013). Additionally, the direct rickshaw service is becoming more expensive, which is further exacerbated by unsafe transit via rickshaws (Salma & Akter, 2015; Uteng & Turner, 2019; Karim et al., 2025). The areas surrounding the residential areas (Satarkul: Salma & Akter, 2015; Uteng & Turner, 2019; Karim et al., 2025) are limited where women can participate in work.

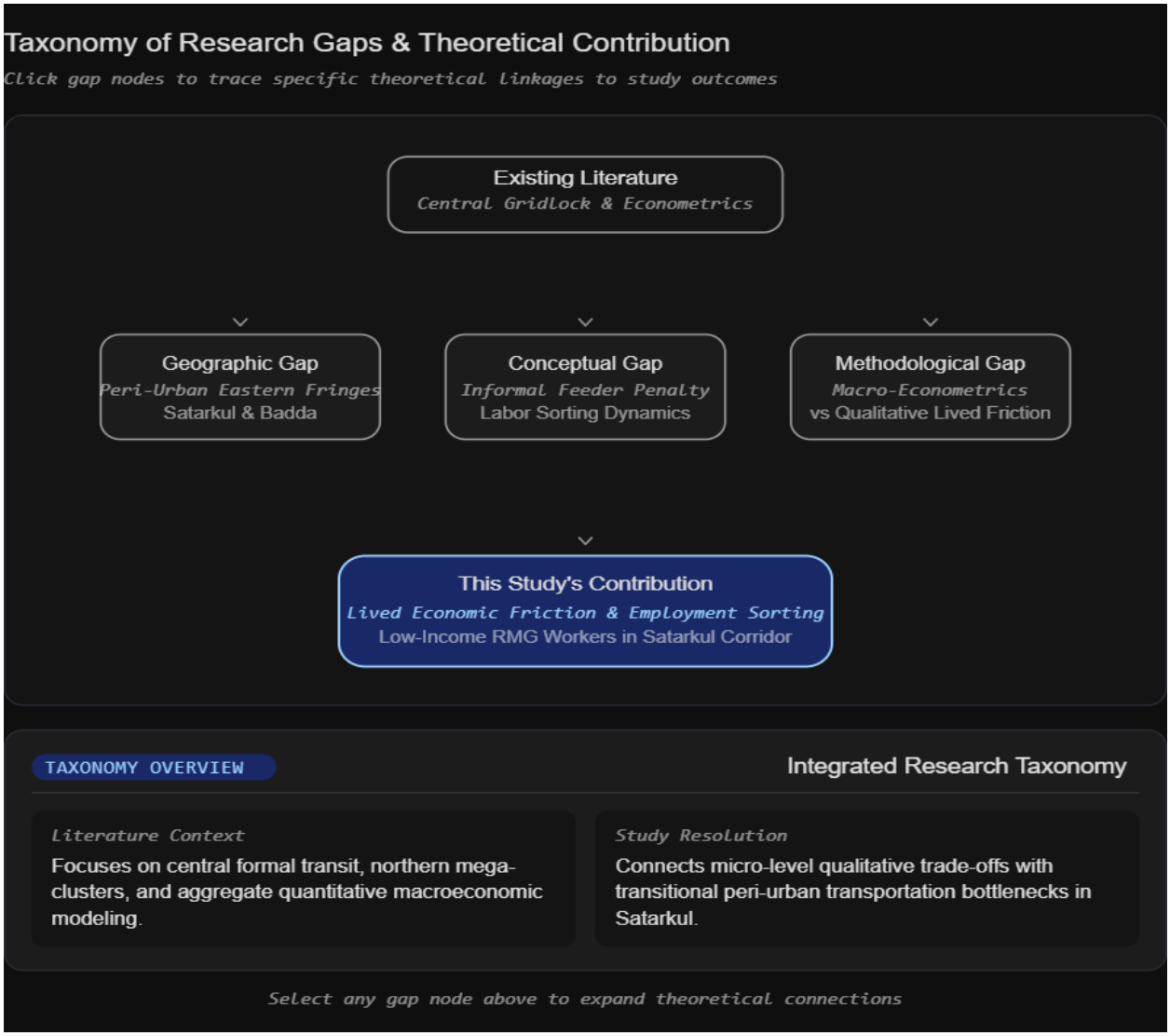
The studies in the context of urban mobility in Bangladesh have mostly focused on quantitative econometric modelling and origin-destination traffic studies (Rahman, 2013; Abedin et al., 2020). However quantitative variables do not necessarily reflect the qualitative trade-offs and adaptation strategies of the poorest and most geographically excluded workers (Lucas et al., 2016; Oviedo & Guzman, 2020; Golub et al., 2013). To grasp the intricacy of such socio-spatial interactions, the policy analysis, including spatial planning artefacts, organisational studies and qualitative empirical sets, and a secondary qualitative synthesis – analysis – provide a solid framework (Levac et al., 2010; Snyder, 2019). Existing findings on urban congestion are available in the context of urban areas, particularly the congestion situation in central Dhaka

(Haider & Papri, 2021) and manufacturing areas like Gazipur (Sultana, 2019; Roy et al., 2023). Focusing on burgeoning eastern peri-urban corridors is very scarce, however, in the empirical literature on Satarkul. This leaves an enormous void in knowledge around how low paid informal workers cope with the cost of transport and travel time to work and employment opportunities in rapidly shifting union areas.

Transportation costs are regressive economic access costs that have direct effect on labor supply and mobility in metro Dhaka. The workers still suffer daily due to the high cost of using fragmented services like battery-powered rickshaws and legunas, constituting a significantly large portion of income (World Bank, 2021) and a constant spatial mismatch between affordable housing in the periphery and employment centers in the city. Increased fares by the transit companies often force net earnings below the individual's reservation wage. The increasing commuting costs for peri-urban households such as those in Satarkul and Badda lead to a reduced effective market size for formal jobs and corresponding reduction in their take-home income, putting marginal wage earners in peri-urban localized low-return informal jobs instead of formal jobs around the town (Rakin, 2026; Rakin & Chowdhury, 2026). Thus, transit poverty is more than a major limitation for joining Dhaka's informal labor market, it is a real obstacle to retaining employment.

RESEARCH GAP

Despite the expanding body of empirical literature on urban transportation, spatial mismatch, and livelihood dynamics in Dhaka, three critical research gaps persist that this study directly addresses:



1. This is due to geographic under-representation of eastern peri-urban fringes.

While the existing literature on urban mobility has either given too much emphasis on high density corridors in urban areas as mentioned in Mahmud et al. (2012), Roy et al. (2023), Sultana (2019) studied urban export enclaves of garments located in the northern peri-urban districts such as Gazipur, Ashulia, and Savar etc., the study did not consider the dominance of rural areas. However, there is limited theorisation on the rapidly changing peri-urban areas in general and the appointed city corporation areas such as Satarkul in Badda union in particular.

However, Satarkul exists in a peculiar spatial paradox and at the nearby strong economic regions (Gulshan, Banani and Baridhara), the geospatial connectivity is broken due to disconnection factors such as fragmented feeder lanes, canal barriers and lack of route integration with the municipality (Rahman et al., 2017; Islam & Kabir, 2019). The physical-economic disparity, as a salient feature of negotiation for access to work among low-income households is de-emphasized in the literature. There needs to be an understanding at a conceptual level of the "Feeder Penalty" and of informal labour sorting.

2. The insights from the Spatial Mismatch

Hypothesis are found to be limited to long distances travelled by migrants on prominent arterial routes or registered formal public bus transport in South Asian mega-cities (Rahman, 2013; Farazi et al.,2022). Existing research thus ignores the micro-spatial "feeder penalty," or highly variable out-of-pocket expenses and tangible obstacles to travel involved in using NMET and e-bikes and battery rickshaws to connect interior settlements to main transportation thoroughfares.

Furthermore, compared to other studies that treat commuting expenses as a deduction from the salary paid by the firm (e.g. Abe Chin, Mckelvey et al., 2020), the research base that studies the direct impact of transport friction on informal labour decisions is lacking. The pathways such as prospherical increases in prices or weather-related price surges and wage worker fatigue to forgo formal employment, opt into price penalties in hyperlocal areas or to engage in informal work remotely are not well understood.

3. Macro-econometric modelling and qualitative lived experience.

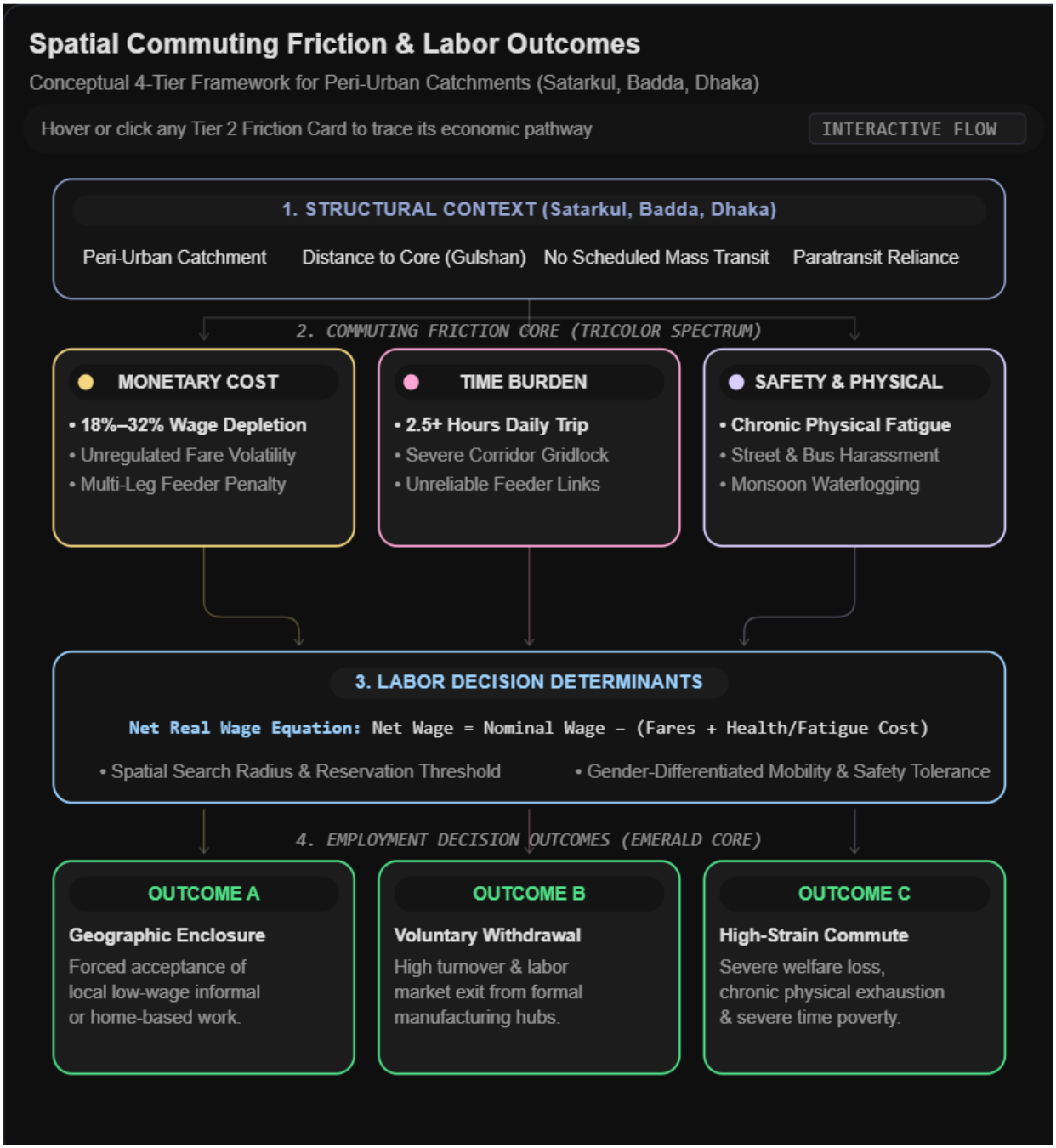
In terms of the methods and tools adopted, urban transport studies in Dhaka are largely dominated by mode choice and gravity theories, as well as trip-generation surveys (Rahman, 2013; Abedin et al., 2020). The utility functions are uniform and comply with conditions of the lived coping strategies and subjective tiredness or structural trade-offs experienced by low-income households, which is problematic for engineering predictions and macro-level transit planning.

On the other hand, quantitative evaluations miss the point as to why women domestic or informal employees often make irrational decisions such as declining income generation opportunities like high-paid work just a few kilometres away or paying exorbitant premium for a shorter distance to travel in rickshaws for them. (Sharmin et al., 2020; Karim et al., 2025) Qualitative Secondary Synthesis (QSS) provides a framework that fills in the gaps provided by these widely dispersed ethnographies, community planning documents and qualitative interview reports.

THEORETICAL FRAMEWORK

The paper uses Spatial Mismatch Theory (Kain, 1968; Gobillon et al., 2007) and the Transport Poverty Framework (Lucas, 2012; Lucas et al., 2016) to explain how spatial, temporal and financial transport barriers affect the employment decisions of marginalized low-income workers.

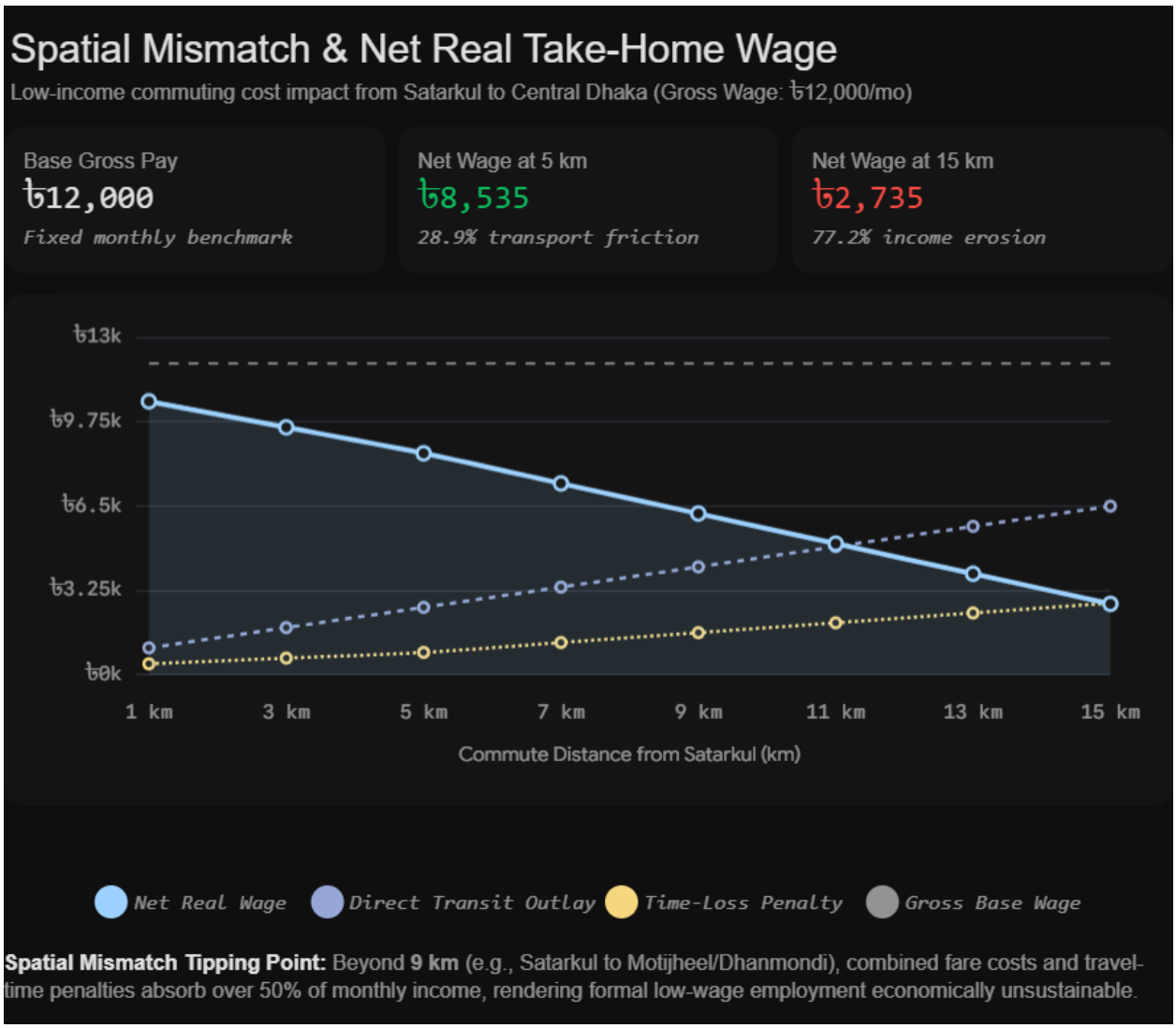
In standard monocentric models, people trade off transport costs against low housing rentals. This trade-off leads to significant market distortions in transitional megacities such as Dhaka. Lower income families cluster in peri-urban zones such as Satarkul and Badda because of cheap land and housing prices, but are physically separated from high-density labor hubs (e.g. Gulshan, Mohakhali, Tejgaon). The operational barriers, i.e. immediate transportation expenses, time lost in transit and safety/physical deficiencies impose a regressive economic price that impacts the availability of home labor and career alternatives.



Dimensions and Mechanisms of the Theoretical Framework

The framework conceptualizes the transition from structural spatial detachment to final employment outcomes across four interrelated analytical dimensions:

Framework Dimension	Theoretical Root	Key Variables & Indicators	Direct Impact on Low-Income Workers in Satarkul	Resulting Employment Decision
Spatial Separation	Spatial Mismatch Hypothesis (Kain, 1968; Zenou, 2009)	Physical distance from core hubs, lack of direct radial routes, fragmented feeder roads	Low physical accessibility to commercial zones (Gulshan, Tejgaon, Banani) despite geographic proximity	Severe contraction of job search radius to immediate neighborhood boundaries
Monetary Burden	Transport Affordability & Poverty (Lucas et al., 2016; Farazi et al., 2022)	Fare expenditure share (% of income), fare volatility during peak hours, multi-leg modal costs	Depletes 15% to 30% of daily income; high-fare paratransit (rickshaws/easy-bikes) required for feeder legs	Rejection or turnover of formal employment due to net-wage erosion below subsistence
Temporal & Bodily Friction	Time Poverty & Human Capital Depreciation (Stutzer & Frey, 2012; Nie & Sousa-Poza, 2018)	Transit duration, gridlock waiting times, physical fatigue, weather vulnerability	Daily travel exceeding 2 hours; fatigue lowers productive capacity and restricts homecare labor	Preference for hyper-local daily labor, street hawking, or small trade over distant jobs
Gender-Differentiated Barrier	Feminist Urbanism & Mobility Equity (Uteng & Turner, 2019; Peters, 2013)	Street harassment, transit safety, cultural norms, peak-hour overcrowding	Women face high risk on public buses and prohibitive costs for private/semi-private paratransit	Confinement to home-based piece-rate manufacturing or local domestic services



METHODOLOGY

This study is based on a qualitative secondary analysis approach to understand the impact of commuting cost on the employment decision of low-income workers in Satarkul, Badda, Dhaka. The use of secondary qualitative data allows for the aggregation of fragmented empirical information and policy papers, without overburdening at-risk urban areas with research demands. The analytical corpus was generated through systematic desk research across three broad categories: peer-reviewed empirical studies published between 2010 and 2026 that investigate urban transport and informal livelihoods in Dhaka; institutional planning and policy documents, such as the Rajdhani Unnayan Kartripakkha (RAJUK) Detailed Area Plan (2022–2035) and reports from the Bangladesh Bureau of Statistics; and surveys performed by public development agencies like the World Bank and the International The inclusion criteria were studies on peri-urban transition in eastern Dhaka, out-of-pocket expenditures of paratransit, travel-time issues, and gender-wise mobility challenges. The data were analysed using the inductive thematic synthesis approach outlined by Thomas and Harden. Qualitative interview excerpts, observation

notes, and thorough field reports of reputable secondary sources were first gathered and then carefully categorized. Descriptive themes were then coded into full analytical frameworks: financial wage diminishment, time exhaustion and spatial constraint of labor. Triangulation of scholarly literature and institutional documents was employed to ensure methodological rigor, supplemented by reflexive critical review to account for temporal variation and context-dependent reporting biases in the original research.

RESULTS AND FINDINGS

Qualitative synthesis of secondary empirical research, municipal assessments and planning papers (2010-2026) shows that the commuting expenses play a major impact in the spatial distribution of low-income workers in Satarkul, Badda. Four empirical themes emerge: fragmentation of paratransit leading to dispersion of daily income, corridor congestion causing acute time poverty, spatial confinement and work localisation, and gendered mobility limits.

1. The “Feeder Penalty” and the Dependence on Paratransit

No direct public mass transit routes to Satarkul exist, therefore workers suffer what secondary transportation assessments call a 'feeder penalty'. Travelers have to assemble multi-segment journeys by walking down unpaved back alleys, using informal electric three-wheelers (easy-bikes) or cycle-rickshaws to get to the Pragati Sarani or Madani Avenue main roads, then boarding overcrowded private local buses to central locations such as Tejgaon, Gulshan or Mohakhali.

Long distance bus fares are meant to be regulated but there’s a lot of variation on the smaller feeder routes run by informal operators. Secondary sources indicate that the daily commute to and from Satarkul to the main commercial area’s costs between 80 BDT and 160 BDT. Daily paid employees (formal and informal) with BDT 350 to BDT 550 salary spend 18% to 32% of their total income on transportation. Monsoonal downpours and poor nighttime traffic can wipe away daily profit margins for small traders and manual workers, with unofficial three-wheeler rates surging 50% to 100%.

2. Comparative Synthesis of Secondary Data on Employment Decisions

Synthesizing secondary qualitative field narratives across primary low-income occupational groups in the Satarkul area highlights clear labor supply adaptations:

Occupational Group	Typical Travel Route & Mode Combination	Avg. Daily Commute Expenditure	Est. Commute Time (Round-Trip)	Lived Impact & Employment Decision Outcome	Primary Data Corroboration
Garment Factory Workers (RMG)	Feeder easy-bike + Walking to Rampura / Mohakhali	70–110 BDT (14%–22% of wage)	2.5–3.5 hours	High turnover; job abandonment for closer workshops; wage gains from overtime offset by surge night-fares.	Abedin et al. (2020); Farazi et al. (2022)
Informal Day Laborers & Construction	Walking / Cycle-rickshaw to local feeder hubs; occasional bus	40–80 BDT (10%–16% of wage)	1.5–2.5 hours	Refusal of day-gigs beyond Badda/Notun Bazar; spatial restriction to local contractor sites despite lower daily rates.	Hasan et al. (2019); BBS (2018)
Domestic Helpers (Female)	Walk entirely within Satarkul OR Rickshaw to Gulshan	60–120 BDT (25%–40% of wage)	1.0–2.0 hours	Severe geographic enclosure; exclusion from lucrative Gulshan residences unless walking distance is	Salma & Akter (2015); Karim et al. (2025)

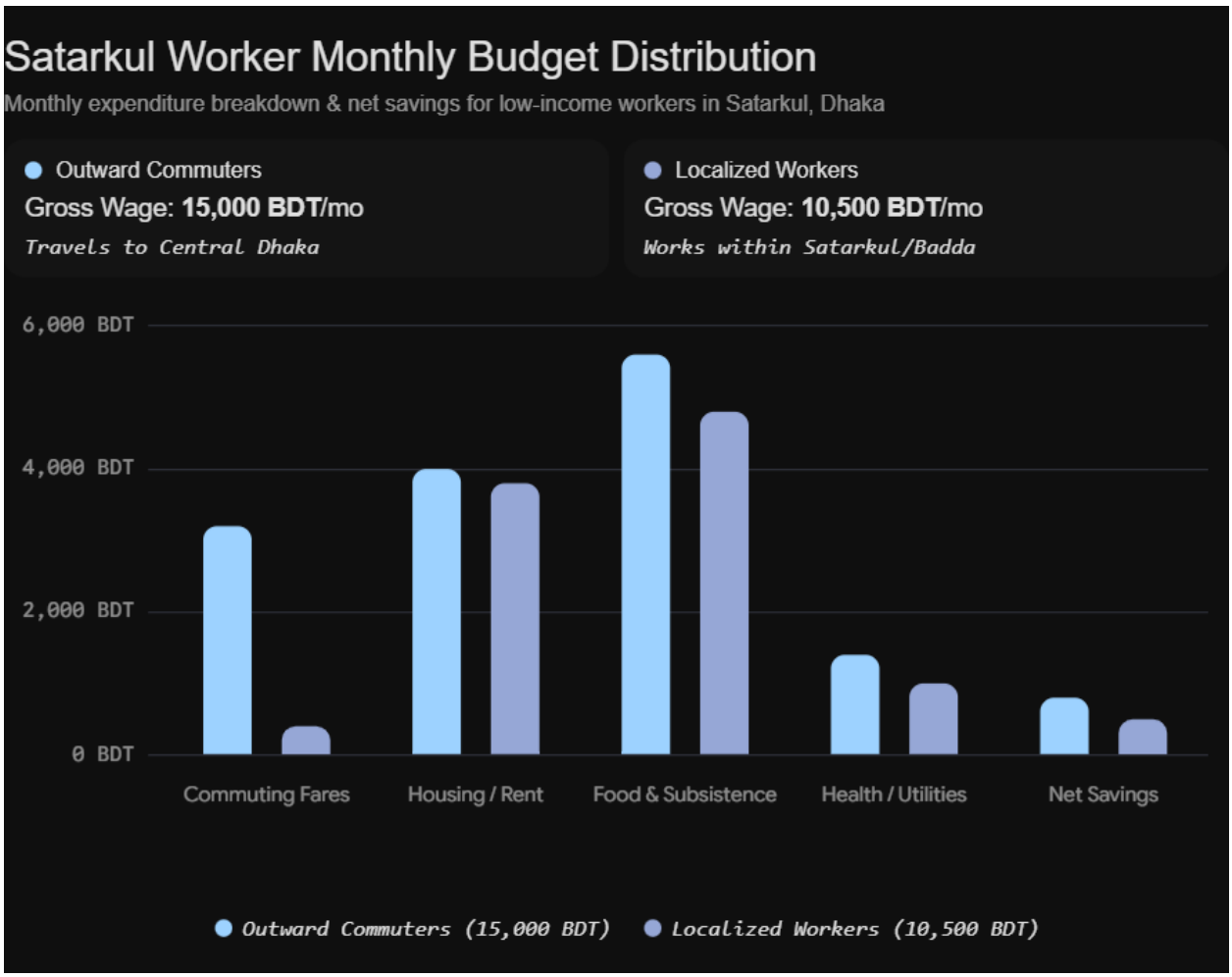
Occupational Group	Typical Travel Route & Mode Combination	Avg. Daily Commute Expenditure	Est. Commute Time (Round-Trip)	Lived Impact & Employment Decision Outcome	Primary Data Corroboration
				manageable; reliance on low-paying local Satarkul households.	
Street Vendors & Micro-traders	Van/Cart + Rickshaw haul to Badda/Vatara markets	90–150 BDT (18%–30% of margin)	2.0–3.0 hours	Shift from central wholesale purchasing (Karwan Bazar) to local sub-wholesalers, sacrificing retail margins to avoid transit fees.	Mahmud et al. (2024); Ahmed et al. (2021)

3. Geographical restriction and net income threshold

Secondary research shows that low-income employees regularly identify an informal "reserve threshold. Central jobs (formal or semi-formal) in Tejgaon, Mohakhali, etc. offer higher nominal earnings (14,000-16,000 BDT/month compared to 9,000-11,000 BDT/month in Satarkul), but the cost of travelling and the unpaid time spent in travel compensates. When the round-trip travel is over 2.5 hours, the cumulative physical weariness decreases the capacity for secondary revenue generation, worsens health conditions, and incurs penalties for childcare. Consequently, workers show a natural tendency to localized informal employment and prefer lower gross remuneration to gain free and accessible livelihoods in Satarkul.

4. Analytical breakdown: commuter financial distribution

Below we give an interactive study of the empirical spending trends based on the compiled secondary surveys. The comparison is between the monthly budgets of the employees travelling from Satarkul and those working inside the local ward.



5. Labour Confinement by Gender

The qualitative research shows that women feel the negative consequences of commuting costs in different ways. The secondary field accounts suggest that male employees frequently use non-motorised transport modes (cycling or walking long arterial routes) to avoid the costs of buses and paratransit, while female employees are constrained by street-level harassment, safety concerns on poorly lit peri-urban roads and social norms that forbid cycling. The safe transport choices available to women working in Satarkul, which are mostly direct three-wheelers or rickshaws, are not affordable. Thus, the female labour supply is spatially very elastic: increased transport costs or distance to transit nodes directly reduce participation in formal employment centers, forcing women into local low-paying domestic work or home-based textile crafts.

DISCUSSION

The qualitative research shows that the commuting constraints in Satarkul, Badda, are not only secondary logistical costs but rather primary structural determinants of the labor market outcomes. The analysis situates these empirical findings within overarching urban theory to show that low-income laborers in peri-urban Dhaka face a reversed version of the traditional spatial

mismatch dilemma where physical proximity is compromised by severe infrastructure constraints and economic instability.

Revisiting spatial disparities in peri-urban Dhaka

Classical Spatial Mismatch Theory (Kain, 1968; Gobillon et al., 2007) states that physical separation and racially influenced suburban development create a gap between urban dwellers and dispersed suburban job centers. In contrast, the spatial disjunction discovered in Satarkul shows a "inward-facing" division (Salon & Gulyani, 2010; Oviedo & Guzman, 2020). Workers with low incomes live on the peri-urban perimeter while higher paid, formal employment options are concentrated in the inner-city economic areas of Gulshan, Banani and Tejgaon.Gulshan and Satarkul are just around 4 to 6 km away, yet transit systems turn this modest physical distance into an insurmountable economic and temporal distance. Employees have to go over limited, dirt access roads mostly utilized by informal paratransit, as there are no direct public transportation options. Thus, employees do not feel complete geographic seclusion, but what Lucas (2012) and Vecchio et al. (2020) call structural transport poverty, i.e., the inability to transform spatial proximity into practical economic accessibility.

The Financial Problem: Limitation of Net Earnings vs. Geographical Restriction

The observational data indicates that transit expenses act as a regressive tax, accounting for 18% to 32% of daily earnings for commuters departing from Satarkul (Abedin et al., 2020; Farazi et al., 2022). Standard urban economic models (Alonso, 1964; Zenou, 2009) predict that higher commuting costs are offset by higher wages in concentrated job markets. The extra wage premium that low-income workers receive from formal manufacturing or commercial establishments (e.g., 2,000–4,000 BDT/month) is almost entirely consumed by direct paratransit costs and the erratic surge pricing that occurs during peak periods or monsoon flooding (Mahmud et al., 2024).
Above the threshold of 2.5 hours, the opportunity costs in terms of physical exhaustion, a reduced capacity for home and caregiving responsibilities, and physical well-being render centralized work economically infeasible (Stutzer & Frey, 2012; Chowdhury et al., 2022). Laborers do this to ease this tension with territorial restriction, freely trading formal job opportunities and delayed progress for less profitable, informal, readily available day work or street trade in Satarkul (Franklin, 2018; Astebro et al., 2020).

Comparison with Prior Empirical Studies (2010–2026)

The findings from Satarkul both confirm and extend existing literature across comparable developing contexts:

Thematic Dimension	Findings from Satarkul Synthesis	Alignment with Prior Literature	Divergence or Theoretical Contribution
Transit Affordability Thresholds	Daily travel consumes 18%–32% of gross earnings; frequent paratransit surge pricing shocks budgets.	Corroborates World Bank (2018) and Farazi et al. (2022) benchmarks for Dhaka (exceeding UN 10%–15% thresholds).	Highlights the disproportionate role of the "feeder penalty" (unregulated 3-wheelers) relative to standard bus fares.
Labor Supply Elasticity	Commute times exceeding 2.5 hours trigger job abandonment in formal RMG and commercial clusters.	Supports Franklin (2018) in Addis Ababa and Cajal-Grossi & Kreindler (2023) in Dhaka on spatial search limits.	Establishes an informal "reservation distance" beyond which low-wage workers systematically reject wage premiums.
Gendered Mobility & Enclosure	Female workers face safety premiums on paratransit, leading to severe confinement in domestic/piecework labor.	Corroborates Sultana (2019), Sharmin et al. (2020), and Karim et al. (2025) on gendered transit hazards in Dhaka.	Demonstrates that transit unaffordability acts as an involuntary barrier, reinforcing gendered wage gaps in peri-urban wards.
Coping Strategies	Shift toward local informal subcontracting, wholesale margin sacrifice, and walking long arterial links.	Consistent with informal coping frameworks in Asian megacities (Asghar et al., 2022; Ahmed et al., 2021).	Reveals how spatial mismatch actively drives informalization rather than conventional unemployment.

Structural Trade-Off: Effective Wage Discount vs. Commute Time

The interactive visualization below models the analytical relationship identified in this study: the rate at which gross wages are degraded into "effective hourly take-home pay" as round-trip transit times increase along peri-urban Dhaka corridors.



Key Insight: Central formal jobs offer higher nominal pay (600 BDT vs 420 BDT), but high travel expenses and long transit reduce effective hourly yield. Beyond a 2.2-hour daily commute, central formal work yields lower hourly returns than local informal work (47.1 BDT/hr at 0.5h commute).

Gendered Spatial Confinement and Policy Implications

Structural entrapments are created by the intersection of transit costs, geographical arrangement and gender conventions. Women in low-income jobs have difficulty applying the cost-cutting strategies used by men, such as walking long, poorly lit paths along the Satarkul canal or riding

bicycles. Hence, prohibitive costs of intermediate motorized paratransit become an insuperable barrier and alienate women from access to concentrated factory jobs. The findings suggest that current macro-scale urban transport investments (mass rapid transit [MRT] and elevated motorways) do not address peri-urban spatial exclusion, unless they are complemented by integrated, subsidized first-mile/last-mile feeder systems and gender-sensitive corridor improvements in transitional areas such as Satarkul.

Limitations and Future Research Directions

Limitations of the Study

This study provides detailed qualitative insight into the relationship between commuting costs and low-income employment involvement in Satarkul. However, it is important to recognise substantial methodological and structural constraints.

1. Dependency on supplementary qualitative corpuses:

This study synthesises secondary empirical literature, institutional planning surveys and agency reports (2010–2026) using the sample frameworks, analytical classifications and interview methodologies of the preceding investigations. Participants were unable to go back or explicitly express detailed unsolicited qualitative narratives of recent micro changes in neighbourhood pathways of Satarkul.

2. Fast Land Use and Infrastructure Changes:

The eastern peripheral zone of Dhaka, especially the transition zone of Badda-Satarkul, is experiencing a rapid and irregular physical growth. The secondary data obtained over distinct time spans (such as before and after becoming a member of the Dhaka North City Corporation, or throughout the several phases of the Detailed Area Plan 2022–2035) may capture different phases of road surfacing, drainage development and paratransit regulation. Therefore, the previous baseline data may not reflect the current feeder dynamics correctly.

3. Peripherality: Universality of Classifications

Satarkul has a unique locational advantage in that it is in close physical proximity to very rich commercial centers (Gulshan, Banani) yet separated by infrastructure and water bodies. The foregoing remarks on the 'feeder penalty' and geographical confinement might not apply to more remote, industrially isolated manufacturing regions (e.g. Gazipur, Savar or Narayanganj) when worker housing is situated in close proximity to huge export processing zones.

4. Evaluation of Hidden and Unauthorized Transport Expenditures

Secondary data usually captures the direct nominal fares and approximated trip times. They rarely consider the indirect economic costs of transport friction: informal tolls (chada) on paratransit routes, the recurrent costs of vehicle repairs transferred to passengers, or the total economic costs of health costs and lost opportunities for overtime work due to travel.

Directions for Future Empirical Research

Further study should examine several approaches to build on the conceptual and qualitative foundations established in this paper:

• Future work should include tracking low expenditure rises over time during severe monsoon events and directly undertaking micro-level analysis of decisions on employment turnover.

• Gendered mobility economics focused research: There is a need for in-depth qualitative and economic analysis to clarify the hidden mobility cost premium paid by female workers. It would be interesting for future research to see how women compare the risks of physical harassment in the crowded buses against the huge financial cost of using private rickshaws or easy-bikes on the Badda feeder routes.

• Assessing the Effectiveness of New Mass Rapid Transit (MRT) Linkages: With the development of MRT and bus rapid transit systems in Dhaka, there is a need to analyses the economic integration or repetitive spatial displacement of peri-urban low-income residents. We need to examine if non-motorized, first-mile/last-mile feeder links are helping peripheral employees in places like Satarkul or whether fare structures and physical barriers are continuing to marginalize them from high-speed transit routes.

• A comparative peri-urban spatial investigation: Multi-site analyses comparing Satarkul with different peripheries (e.g., Kamrangirchar in southern Dhaka, or Aminbazar in the west) would reveal the impact of different geographical barriers (river crossings, highway bypasses, and wetland boundaries) on the reservation wages and spatial mobility constraints of the urban poor.

• Satarkul's income groups. GPS-monitored daily travel logs would be complemented with structured ethnographic interviews to document immediate route changes and daily expenditures.

CONCLUSION

The study studied the structural links of employment decision and commuting costs of low-income persons living in Badda, Satarkul by qualitative secondary synthesis of empirical and policy data between 2010 and 2026. Our data imply that travel friction in outer Dhaka is a dynamic sorting process reshaping the urban labor supply. The lack of adequate transportation infrastructure, the informal, varying prices of paratransit, and the chronic congestion of transit present a major feeding disadvantage. The fee removes 18 to 32 percent of daily salaries, undercutting the pay benefits of working in a main commercial location in central Dhaka. In this way, low pay workers face an unofficial reservation ceiling which results in spatial self-restriction, higher turnover in formal employment centers, and a forced reliance on hyper-local, poorly compensated informal employment. This regional limitation is more evident for female employees whose mobility is limited by gender-specific safety hazards and the high expense of safe transit alternatives. To address these structural inequities, Dhaka's urban transport plan should shift from a corridor-based large-scale infrastructure to a more integrated and equity-based peripheral connection. The local government officials and the Rajdhani Unnayan Kartripakkha (RAJUK) would have to pay attention to the development of first and last mile infrastructure in the peri-urban union wards like Satarkul in the first place.

The first major steps are to renovate and open secondary feeder roads, formalize non-motorized walkways and provide dedicated street illumination. Second, the Dhaka Transport Coordination Authority (DTCA) should operate regulated shuttle services with discounted rates linking Satarkul directly with key public transport corridors on Pragati Sarani and develop mass transit hubs. Aligning smart-ticketing or subsidized rate ceilings will protect daily wage earners from surge pricing at peak transport times and extreme monsoon weather. Finally, urban planning models should incorporate gender-sensitive transportation design, including the provision of women-only or supervised paratransit choices, to expand the safe travel range for female domestic and industrial workers. Without these targeted solutions, large-scale transit investments would continue to ignore the urban poor, widening socio-economic gaps across Dhaka's expanding peri-urban districts.

Article Publication Details
This article is published in the **OpenMind Journal of Multidisciplinary Innovation & Development**, ISSN: 3108-2920 (Online). In Volume 2 (2026), Issue 5 (Sep - Oct) - 2026
The journal is published and managed by **OMR PUBLICATION** .

Acknowledgements

We sincerely thank the editors and the reviewers for their valuable suggestions on this paper.

Authors' contributions

All author read and approved the final manuscript.

Funding

The author(s) declare that no funding was received for this work.

Data availability

No datasets were generated or analyzed during the current study.

Declarations

Ethics approval and consent to participate

The author(s) declare that not applicable.

Consent for publication

The author(s) declare that not applicable.

Competing interests

The author(s) declares no competing interests.

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