

MOBILITY FOR ALL:

Inclusive transport and Mobility for South Asian cities



DATE: MAY 11 2023

TIME: 9:30- 17:30

(BANGLADESH STANDARD TIME)

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**DEPT OF URBAN & REGIONAL PLANNING , BUET, BANGLADESH
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Programme Agenda

9:00 AM	Doors open
9:30- 9:45	Welcome & Introduction
9:45 – 11:00	Session 1 Transport planning & behavior
	<ul style="list-style-type: none"> • Exploring Transport Poverty in the Context of Dhaka • Social Equity and Sustainability in Urban Transport Planning in Dhaka: a governance perspective in addressing traffic congestion • Engendering Public Transit and Infrastructure in the Capital: A Comparative Analysis of Dhaka and New Delhi • “A Comparative study on travel behavior between poor and non-poor urban residents: Case Study of Dhaka” • The Effects of Metro Rail Construction on Modal Shift: A Study on MRT Line-6 in Dhaka City
11:00-11:15	<i>Teal/Coffee break</i>
11:15 - 12:30	Session 2 Gender and mobility
	<ul style="list-style-type: none"> • Women on wheels? Visual representations of platform-based transport services in Lahore, Pakistan • Impact of Unfriendly, Expensive, and Long Duration School Commutes in Dhaka on Young Children and Accompanying Mothers • "Pregnant Women’s Mobility in Coastal Municipalities of Bangladesh • Left Behind: The Unheard Voices of Homeless Women Facing Transport Exclusion in Kolkata
12:30 - 13:30	<i>Lunch</i>
13:30 – 15:00	Session 3 Transport inequalities for Older adults and PWD
	<ul style="list-style-type: none"> • Mobilitiescape of Older Adults in Coastal Communities in Bangladesh • How Individual Perceptions of Transportation Systems Influence Mode Choice for Mobility-Challenged People: A Case Study in Dhaka using an Integrated Choice and Latent Variable Model • Inequalities within Mobility Inequalities: A Case Study of Mode Specific Problems Faced by Movement Challenged Persons of Dhaka, Bangladesh • Challenges of walking for senior citizens in Dhaka, Bangladesh
15:00-15:15	<i>Teal/Coffee break</i>
15:15- 17:00	Session 4 Intersectionalities between transport and social inequality in India and Bangladesh [INTALInc Seminar Series]
	<ul style="list-style-type: none"> • Modest Mobilities: Performing gender and respectability on two-wheelers in Dhaka • Urban traffic congestion and impact on health of older adults and wheelchair users in Dhaka, Bangladesh • Barriers to women’s mobility in the first- and last-mile stretches in Kolkata
17:00 – 17:30	Closing remarks



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MOBILITY FOR ALL INCLUSIVE TRANSPORT AND MOBILITY FOR SOUTH ASIAN CITIES



11 MAY 2023

URP-BUET, DHAKA,
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We invite urban scholars and practitioners to submit abstracts of their original and unpublished works related to below mentioned themes set in south asian cities.

THEMES

- Intersections of urban transport and inequalities of access (e.g. gender, class, religion, age, disability)
- Urban transport interventions
- Accessibility and social inclusion
- Cultural, historical and media representations of transport
- Challenges of walking, non-motorized transport and Informal modes



SUBMISSION GUIDELINES

Interested authors may send a 250-word abstract of the research paper to equimobproject@gmail.com by 30 March, 2023.

The submission should contain details such as the paper's title, keywords, authors and their affiliations. The authors of selected papers will be invited to present the full paper at the seminar in-person or virtually.

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With an interesting mix of empirical evidence from South Asian cities, the succeeding sections in this booklet present 16 (extended) abstracts that have been shortlisted for the symposium.

Session 1: Transport planning & behavior

Abstract 1: Exploring Transport Poverty in the Context of Dhaka

Sabah Tajin Tarique, Nuzath Tabassum Esha, Nawshin Tabassum

Transportation plays a vital role in the life of people. Every person in society needs some form of movement that is facilitated by transportation services and infrastructures to perform their day to activities. Being a city in a developing country, the citizens of Dhaka face transport issues on a regular basis due to their socio-economic condition and also the poor quality of and mismanagement in transportation system. This is the source of transport poverty. This study is a preliminary, methodological step towards understanding 'Transport Poverty' in the context of the city. The aim of the study is to identify the factors leading to transport poverty in Dhaka city and its impacts suffered by people.

Transport poverty is measured using social disadvantage and transport disadvantage. When an individual falls under both of these two criteria, he/she is identified as transport poor. 351 data was collected from 40 different locations of Dhaka by physical, telephone and online survey. To meet the first objective, that is to identify the factors behind transport poverty, descriptive and inferential statistical techniques are performed using IBM SPSS Statistics 22.0 software and Microsoft Excel. Relation among variables under first objective (e.g., mode, trip frequency, dependency on others, safety, etc.) and different socially disadvantaged groups such as seniors, female, divorced,

widowed, unemployed, retired, PWD (People with Disabilities) and people with chronic diseases are examined. Result shows that, 53% of the total respondents spend more than 10% of their income on transport; financially disadvantaged respondents (low income, unemployed) mainly face affordability issues; walking, cycling and office transport are comparatively more desirable modes; most of the socially disadvantaged groups tend to avoid public transport (senior, female, PWD, people with chronic disease); seniors, PWD and people with chronic diseases have to depend on others for travelling. Moving to the second objective, to assess the impact of transport poverty, Structural Equation Modelling was performed in IBM SPSS Amos 26.0 software. The result shows that, affordability disadvantage does not have a significant relationship with transport disadvantage. The other factors of transport disadvantage (mobility, accessibility, and transport externalities) have a strong connection with it. Social disadvantage does not have a significant relationship with transport poverty. Transport poverty has substantial impacts on temporal issues, inaccessibility and social exclusion but doesn't have any impact on subjective wellbeing.

However, due to COVID-19 pandemic, authors faced some limitations while conducting this study such as probabilistic sampling couldn't be done and collection of the data took longer time than expected. Finally, this study will add value in the planning and engineering divisions of the transportation sector. Future researchers can also extend this study to the sub-factors of transport disadvantages such as affordability, mobility, accessibility etc. Planners and engineers will be able to follow this very study for existing factors of transport poverty and policy makers can also rely on this study for effective laws and policies for practice. Like developed countries, Bangladesh can apply transport poverty in the policy framework to bring a change in it.

Abstract 2: Social Equity and Sustainability in Urban Transport Planning in Dhaka: a governance perspective in addressing traffic congestion

Syed Ali Ahnaf

Introduction

Dhaka, Bangladesh, which has a population of 20.20 million people and a population density of 44,500 people per square kilometer, has several difficulties as a result of its rapid population increase. The fact that Dhaka is home to more than 80% of all governmental agencies, businesses, and educational institutions makes it even more precarious. (Karmaker et al., 2023)

There are numerous different motorized and non-powered means of transportation in Dhaka. Because these various modes frequently share the same road space, there is a high level of operational disorder, which exacerbates traffic congestion. The city's transportation system is distinct from others of a similar size throughout the world because it is primarily road-based and includes a sizeable portion of non-motorized transit. (Azra, 2016) However, this non-motorized version of transportation is mainly a tri-cycle known as rickshaw. There have been several attempts of banning the rickshaw without producing any alternatives by the governance body. This rickshaw is not only the blood that pumps the cheap labor force throughout the city but also the only affordable form of transport for them. This is a sign of total indifference towards the priorities of a huge population that deserves equity in society in terms of transportation facilities. Therefore, this paper will be about the inclusion of social equity and sustainability into urban transport planning to improve the traffic congestion scenario in Dhaka city if not eliminate it.

Background

While spending time stuck in traffic, one cannot fail to observe that the transport system is full of disparity. Often eight seater cars will be carrying only one passenger while a bus that is supposed to be carrying fifty is packed with a hundred and twenty, some of whom are hanging outside the door risking their lives just to get to work.

More than 60% of commuters utilize public transportation to get to work, according to recent polls conducted by the Revised Strategic Transport Plan. However, many lower-paid workers are unable to use these modes due to the high fare costs. These modes are unpleasant to use because of the subpar service they offer. (Azra, 2016) Others just walk unaffected by the distance. However, most of the elite people in those cars would happily ride a public bus in Europe. That begs the question of what is missing from our transport planning and policies. This lack of inclusive planning not only affects men, but also women, children, third gender (hijras) and mostly neglected disabled people who have almost no facilitated accessibility to motorized transport in Dhaka city. Infusion of social equity and sustainability in urban transport planning governance could in many ways end traffic congestion and suffering.

Methodology

This paper has been written upon other available literature related to the topic. Therefore, secondary data has been collected from various government and non-government sources. Both qualitative and quantitative data was used in order to bring out the conclusion of this paper. The research questions attempt to firstly create an outlook of the scenario of the urban transport planning of Dhaka within the context of social equity and sustainability. The key factors that can be used to measure equity and

sustainability in a qualitative manner are identified. Major factors affecting traffic congestion are identified. Then based on our model it has been shown how introducing the concept of social equity and sustainability can impact the governance structure to effectively reduce traffic congestion in Dhaka

Result

- It has been established that the idea of social equity and sustainability is an alien concept and simply does not exist in current urban transport planning and policies.
- It has been shown through various studies that introducing the two concepts can change the entire design of the road transport system of Dhaka city.
- These changes can also empower marginalized groups and facilitate better functioning of the less fortunate disabled people, and thus can bring huge benefits to the economy and improve quality of life in Dhaka city.
- Under a better equity structure, sustainable development, active participation of stakeholders and impactful governance, it is possible to overcome the traffic congestion issue of Dhaka city.

Discussion

One of the major reasons for uncontrolled traffic congestion is the unchecked vehicle population in the streets of Dhaka. Getting a new car out into the street today is ridiculously easy. And therefore the privilege is often misused. Car use has become a necessity for many due to the lack of poor public transport facilities. If the social equity concept is brought to the table in the decision making process, the quality of public transport will substantially improve, encouraging more people to take a bus rather than using a car. This significantly reduces traffic congestion. The other side of the coin is sustainable use of cars for which the governance structure must discourage car use.

Conclusion

The government must recognize equity in transport facilities as a basic right among all its citizens. Sustainable use of vehicles has to be ensured. Traffic congestion must be treated as an urgent crisis and soon to be catastrophe.

Abstract 3: Engendering Public Transit and Infrastructure in the Capital: A Comparative Analysis of Dhaka and New Delhi

Ankush Pal and Nawshin Tabassum Flora

Urban spaces are shaped and characterized by the normative embodiment of most people. Extensive research has been conducted on public infrastructure but rarely have any serious thoughts given to make public infrastructure women, working class and disabled-friendly. The idea of a "smart city" is largely driven by perceiving "the upper middle class" as the ideal. Such perception of city planners and policymakers has created social divisions producing an urban landscape of exclusion.

Dhaka and Delhi, both megacities of South Asia and the capitals of Bangladesh and India, respectively, are home to an estimated 40 million people from diverse backgrounds. There has been increased investment in metro rail services, primarily catering to the upper middle class, leading to the inevitable exclusion of the working class and poor people. Bus services are relatively affordable but often inaccessible to women, the elderly, and the disabled due to a disproportionate ratio between commuters and available vehicles, fear of sexual harassment, and little to zero accommodations for the elderly and disabled. As a result, a form of public transportation is created that only the relatively privileged can access. Privatization of public spaces coerces lower-income groups to treat them as a transitory body between destinations. Furthermore, the lack of walkable roads decreases pedestrian facilities, hampering the quality of life. While walkability is considered an essential criterion of a citizen-friendly city, the solutions to ensure increased walkability overlook the gendered realities. Mere infrastructural development will overlook certain impediments which do not generally impact men. Hence, such decisions will apply a partial solution to a problem with a multifaceted impact on the public. In addition to that, waterlogging is also a considerable barrier to smart cities, affecting working-class people and slum dwellers the most.

In this paper, we will highlight how structural inequalities disproportionately impact different groups, yet the public policy measures undertaken to deal with them are partial towards the economically and socially privileged, deploying a "one size fits all" strategy rather than focusing on varied lived realities and taking measures accordingly. While Simmel, in his *Metropolis and Mental Life*, writes that cities offer us 'liberation' from the customs of the rural and offer us the freedom to make new choices, detached from our pre-established kinship, he – like many other classical and contemporary urban scholars – overlooks how cities are essentially gendered. Most cities are masculine by the nature of their formation of infrastructure. Kulwinder Kaur notes in *Gender, Public Space, and Urban Planning: An Intersectional Approach* that cities attract women since it offers them freedom from the restrictive social norms associated with the rural. But again, even though the urban spaces offer women substantial freedom to break free from the patriarchal norms and customs, it is also a site for fear and violence. Since public space is a product of unequal social relations, it becomes a site of struggle for women and the disabled. The spatial politics of everyday life have a far-reaching impact exacerbating urban inequalities.

Therefore, we aim to reevaluate the 'one size fits all' approach. As a solution to the problems mentioned above, we offer a bottom-up approach to restructuring public infrastructure by making inclusive policies and higher taxation on private vehicles to develop accessible and affordable public transportation. An intersectional approach will address the needs of marginalized groups and will take caste, class, disability, ethnicity, religion etc., into consideration before making policies concerning them. Apart from this, "sex disaggregated data" of the target communities are crucial to make such inclusive policies. The overriding need for sound gender budgeting is another significant factor in making an inclusive city. Without reassessing the contributing factors of pre-existent inequalities, the making of an

inclusive city cannot be hoped for. Exclusion by infrastructural design makes it ultimately impossible for the city to belong to all.

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Abstract 4: A Comparative study on travel behavior between poor and non-poor urban residents: Case Study of Dhaka”

Mohammad Ashraf Ali , Md. Ehsanul Hoque , Dr. Neelopal Adri

This study is aimed to understand the travel behavior of the poor and non-poor community of Dhaka. From the database of Revised Strategic Transport Plan (RSTP) of Dhaka, around 45 thousand data are analyzed to make this study. According to world bank, poor refers to those households where per person daily average income is less than 1.9 USD (140 BDT). On the basis of that info, the data entities with 'Per person family income' less than 4417.5 tk per month, has been classified as poor. Others were selected as non-poor. Some other spatial attributes like Link-Node ratio, Access facility, Diversity, Transit Accessibility, Population density of TAZ, Job-household ratio of TAZ were required. With the help of expertise knowledge and guideline, those were included.

Descriptive statistics have been applied to understand the differences or similarities and Multinomial Regression have been applied to figure out the significant factors of mode choice. Separate regression modeling has been applied for poor and non poor people. Among 30 independent variables, Trip purpose, Age, Car ownership, Motor-cycle ownership, LinkNode ratio of origin etc. has been found significant impact on mode choice behavior for both communities.

For both poor and non-poor communities, child and adolescence has been found making trip for school purpose more than other purposes. But, poor adolescences are connected in work trip relatively more than non-poor adolescence. Also both child and adolescence of poor community are relying more on active transit which is mainly walking. But, same age groups of non-poor community are using non-motorized transit in a higher rate. Also the non-poor people are travelling more distance and thus spending more time on travelling than poor peoples.

There is no such difference on travel purpose between male and female within income class and also between income class. Which indicates women are now travelling for almost same purposes as male in the society. But there is difference in mode choice between poor and non-poor communities. Poor people has been found using less private vehicle and nonmotorized vehicle than non-poor. Poor are found relying largely on Active-Transit, which is mainly walking, when non-poor are relying largely on non-motorized vehicle.

From the regression modeling some important findings has been identified. Car and motorbike owners have shown the tendency of avoiding active transit, when bi cycle owners have shown their attitude towards preferring active transit a lot. Also a positive relation between public transit and link-node ratio of origin has been figured out. Locations where link –node ratio is higher, people get into public transit a lot from those places.

On the basis of all findings, this paper has concluded into some major policy recommendations. The current transport system of Dhaka is not suitable and comfortable for female users. As mode choice and trip purpose of female users nowadays don't differ that much with males', a female friendly transport system is must need for current Dhaka. This study has recommended the necessity of female friendly transport system for the city. At the same time, this study also represented citizens' high level of dependency on non-motorized vehicle which is mainly rickshaw. But there is no such regulation on this eco-friendly and easily accessible vehicle. So, ensuring a systematic way to control rickshaw has been proposed. At the same time, a good percentage of trip maker has been found making trips shorter than 3km. A walking and bi-cycle friendly environment will inspire a lot of people to make their trip by

walking or by cycling. Which can also solve the traffic problem of Dhaka city a lot. Thus, this paper has emphasized the necessity of creating a walking friendly traffic system for this city.

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Abstract 5: The Effects of Metro Rail Construction on Modal Shift: A Study on MRT Line-6 in Dhaka City

Nafisa Farid Moumi, Md. Tahmid Tazwar Samin, Asif-Uz-Zaman Khan

Dhaka is currently one of the largest megacities of the world, and its rapid population growth has led to significant travel demand and numerous transportation issues. To put an end to this disorder, the city's infrastructure must undergo a major overhaul. Based on the experiences of other megacities, a road system alone cannot meet the city's transportation requirements. Therefore, Dhaka Metro Rail was proposed as an approved mass rapid transit system in the STP (2005). Among the six routes of the project, MRT Line-6 was recommended as a priority project which will run from Motijheel to Uttara, connecting sixteen service stations. The ongoing construction work of MRT Line-6 has affected the mode choice of many people in Dhaka. In the past few decades, researchers have tried to explore factors that impact the mode choice in a variety of contexts. However, very few of them addressed the impact of constructing transportation mega projects, particularly in Bangladesh. To fill this knowledge gap, this study attempts to analyze the effects of the ongoing Metro Rail construction on modal shift of commuters in Dhaka. This research aims to investigate the impact of different factors such as socio-economic condition (family income, vehicle ownership), personal attributes (age, gender) and trip features (origin, destination, travel distance) on modal shift. A binary logistic regression model has been used to assess the influence of these variables on changes in modal shift. The target population for this study includes anyone who has traveled along the MRT Line-6 route or a portion of it by vehicle, both before and during the construction phase. Using purposive sampling technique, total 317 respondents were surveyed, both face-to-face and through online platforms. The study uncovers intriguing findings that has not been addressed in other travel related studies of Bangladesh. The result shows roughly 35.5 percent of the study sample experienced a modal shift during construction, while 67.5 percent did not. The rate of modal shift during construction phase is higher for public transport users (41%) than for private transport users (6%). During construction, the commuters favored ride-sharing cars/bikes and motorbikes to reduce their travel time and avoid MRT construction activities. Bus ridership dropped dramatically (40%) as bus users experienced significant delay, due to the reduced lane for construction works. The binary logistic model for modal shift demonstrates that, the probability of mode change during metro rail construction is influenced by various factors such as: vehicle ownership, trip distance, route change, previously used mode and its comfort level. From Chi-square and Independent sample T-test, the following seven variables have been found statistically significant and have a strong correlation with modal shift: Family Income, Vehicle Ownership, Mode (as used prior to construction), Mode Comfort Level, Mode Safety Level, Route Change, and Cost Change. The study also shows that, individuals who own a vehicle are less likely to switch transportation modes than those who do not own a vehicle. When a greater proportion of trips occur within the construction zone, the rate of mode change is higher. However, when the distance travelled is greater, people are less likely to switch modes. Therefore, the findings of this study are likely to be very useful while planning for similar urban transport interventions in future.

Session 2: Gender and Mobility

Abstract 6 : Women on wheels? Visual representations of platform-based transport services in Lahore, Pakistan

Maryam Altaf

While platform-based transport service providers enhance mobility for some in the city, they simultaneously set the ground for a wide array of exclusionary discourses and practices. These materialise in many forms, including visual and textual representations. Against the backdrop of rapidly evolving platform-transport services in Lahore, Pakistan, this paper highlights how representations in social media advertisements circulated by platform companies are able to reproduce, and reconfigure the gendered normalisation of certain mobility practices. The paper presents a visual and textual discourse analysis conducted on 149 images using a framework that focuses on the compositional and social aspects of the image and includes a close consideration of the interactions between categories of gender, age, and class. The paper utilises images from the dataset to illustrate how the representation of women in specific ways may reflect the normalisation of a new travel etiquette for young, urban middle-class women. Platform-motorbike advertisements appear as the most striking examples of normalisation and subversion of gender and mobility, as women are less likely to use motorbikes in Lahore, both, as drivers and passengers. However, at times the normalisation of a specific gendered mobility practice is highlighted as subversive due to differences in three specific elements: roles, positioning, and clothing, as well as the images' contextual setting with regard to the mode of transport. Although some of the representations seem to be nudging the boundaries of acceptable mobility practices for certain individuals, the overall marketing ideologies represented in the images largely retain women in culturally specific exclusionary mobility practices.

Abstract 7: Impact of Unfriendly, Expensive, and Long Duration School Commutes in Dhaka on Young Children and Accompanying Mothers

Sayada Jannatun Naim

Traffic congestion in Dhaka has become unbearable because of ineffective traffic control systems, citizens' disinterest in obeying traffic rules, uncontrolled vehicles, unsustainable number of three-wheeled pedal-powered slow-moving rickshaws (Mahmud et al., 2021), inadequate road space, and dense population. A study by the Bangladesh University of Engineering and Technology (BUET) observed that the average speed of vehicle movement in Dhaka came down to 4.5 km/hour in 2021 from 21 km/per hour about 12 years ago. A study in Chile observed that increasing the commuting time by one standard deviation could diminish the average performance of the students by between 4% and 13% (Contreras et al., 2018). In this paper, a higher standard deviation of commute time represents longer travel time. The sleep need of children is higher than adults and pre-pubertal children. Longer commute time reduces the sleep duration of children who attend school in morning shifts, increases their sleepiness during school time, and impacts health and study (Pradhan & Sinha, 2017).

Moreover, the commuting system in Dhaka is not friendly to school children. Due to this long duration and unfriendliness, mothers often accompany their children to and from schools to ensure safe and effective commutes. Travel expenses are also high in Dhaka relative to the average household's income. Many mothers used to wait outside their children's schools to take them back home to avoid undertaking tedious, time-consuming, costly commutes. Another side effect of transport is pollution. Expensive longer-duration commutes through pollution should impact the children's health, academic performance, and daily life. Impacts on mothers should be on health, household budgets and time allocation for various household duties. Thus, this study aims to reveal the impacts of unfriendly, expensive and long-duration school commutes on young children and their mothers. The research will use qualitative methodology.

Research Questions

The research objective is to explore how and why commute to school impacts children and mothers. Hence the research questions are the following.

1. What transport options are the children using, and why do they use them?
2. Why and how is the school commuting in Dhaka unfriendly to students and mothers?
3. How do the commuting expenses affect the family budget of households?
4. Is the commute time long, and why is it long?
5. What are the impacts of school commutes on health, family budget, and time allocation of young children and mothers?
6. How does commuting in Dhaka affect children's school performance and mothers' household responsibilities?

Methodology

This research will adopt a qualitative methodology. The data collection tools are semi-structured questionnaires, focus group discussions (FGD), and key informant interviews (KII). The population of this research are students below standard 6 / class 6, mothers of the students, class teachers and administrators of schools, and key people involved with Dhaka's education and transport process. Student sample size will depend on funding and available time, but the initial plan is about 500 across the Dhaka Metropolitan Area under North and South City Corporations. Six FGDs will be conducted, four with students and mothers and 2 with school staff. The questionnaire Questionnaires shall be administered through interviewers. In addition, there shall be three questionnaires for children,

mothers and school staff. The statistical tools for data analysis may be hypothesis tests, ANOVA, MANOVA, Factor Analysis and Cluster Analysis.

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Abstract 8: "Pregnant Women's Mobility in Coastal Municipalities of Bangladesh"

Zakia Sultana

Background and justification

In coastal municipalities of Bangladesh, access to healthcare facilities and services is limited, and transportation infrastructure is underdeveloped, leading to difficulties in reaching healthcare providers (Zafri et al., 2021). This study focuses on one of the main issues pregnant women face in public transportation. They need regular check-ups and to go to the hospitals or clinics at least several times during the total pregnancy period (Sultana et al., 2019). In many cases, pregnant women have to stand for more extended periods when the public transport is the bus, which can be uncomfortable and even dangerous for both the mother and the child (Banke-Thomas et al., 2020). In many buses, a few seats are reserved for women; however, this regulation is not appropriately maintained, even though men remain seated on the seats reserved for women. Additionally, overcrowding in public transportation can increase the risk of accidents and falls (Jahangir et al., 2022), which can be particularly hazardous for pregnant women. If pregnant women fall, sometimes miscarriage may happen. Traffic congestion is one of the main issues in urban municipalities. If pregnant women are in critical condition and it is impossible to take them to the hospital in time due to this traffic, the patient can sometimes die. It raises the question of how these disparities can be assessed and what are the possible solutions. Therefore it is essential to take specific strategies for the safest mobility of pregnant women in public transport.

Theoretical approach

The mobility of pregnant women has been assessed in this study with the lens of the accessibility concept in mobility (Lecompte & Bocarejo, 2016). Bocarejo & Oviedo (2009) defined accessibility as "ease of reaching a desired destination given a number of opportunities and impedances associated with the transport supply used to travel between the Origin-Destination pair," where travel time and cost are the influential variables of the transport accessibility.

Materials and Methods

Gopalganj district is one of the 19 coastal districts in Bangladesh (Uddin & Kaudstaal, 2003). I used an inductive approach to interview ten pregnant women living in Gopalganj Sadar municipality, Bangladesh, under this study. This municipality consists of fifteen wards. Among them, five communities were selected for the study that is close to the sub-urbs where transport facilities are not like the municipality's center. A reconnaissance survey was conducted in December 2022. Afterward, two pregnant women were selected from each of the five wards. The interviews were taken upon the consent of the respondents at their convenient time and recorded. Each of the interviews lasted for 45 to 60 minutes. After the field study, interviews were transcribed, translated, and analyzed with qualitative data analysis software (Atlas.ti).

Results

The respondents reported that the mode of transport available varies widely. The bus is used in Gopalganj only for long-distance journeys. Most of them use rickshaws, whereas a few have to walk long distances to reach the nearest healthcare facility. Others have access to bicycles, engine van rickshaws, motorbikes, scooters, and so on, which can provide faster and more efficient transportation. However, even with access to these modes of transport, women may still face obstacles. For example, poor road conditions, extreme weather, and lack of availability of public transportation can make it challenging to reach healthcare facilities on time. During severe weather or rainy day, houses located far away from the main roads with the connecting roads suffer the most since transports are significantly less even at regular times, which becomes worse now. It is also reported that some road networks are broken, which causes shaking when they go to the nearest healthcare centers. Women live with their husbands in another place rather than their in-laws' house because their jobs need to go to their in-laws' houses during different festivals even though they are pregnant. During that time, they face many issues and difficulties; sometimes, miscarriage may happen. One of the respondents reported this issue during her first pregnancy when she had to travel to her in-laws' house. That time miscarriage happened; she then decided she would never travel during her subsequent pregnancy. They also pointed out traffic jams as one of the recent issues in traveling from one place to another. They mentioned this because of narrow road networks and many vehicles on the same.

Discussion and the way forward

Thus, tackling the inclusion of women in all aspects of public spaces will be paramount, but it cannot be a one-size-fits-all approach. In most cases, equal rights are ensured in the written documents that say that is not seen in reality. Many families cannot organize safe transportation facilities for pregnant women due to their unstable economic conditions. In addition, the number of well-trained medical attendants is very few against the growing demand. Not only is the distance an issue for pregnant women in Bangladesh, but the delivery cost is too expensive that most families cannot afford. Nuanced thinking and multiple gender-sensitive strategies are required. Some initiatives to address these challenges could be: (i) providing subsidized transportation for pregnant women, (ii) training traditional birth attendants to provide care in remote areas, and (iii) establishing mobile clinics to bring healthcare services directly to communities.

Abstract 9: Left Behind: The Unheard Voices of Homeless Women Facing Transport Exclusion in Kolkata

Margubur Rahaman, Kailash Ch. Das

This research study aims to illuminate the experiences of homeless women who encounter transport exclusion in the cosmopolitan city of Kolkata. Using qualitative interviews and observations, the study highlights the challenges and barriers that homeless women face when accessing transportation services. The study reveals that homeless women experience various forms of transport exclusion, including financial barriers, safety concerns, and social stigma. Due to financial constraints, homeless women are unable to afford comfortable transportation services and are forced to rely on general transport, even during emergencies such as pregnancy complications and serious health issues. Additionally, social stigma associated with homelessness creates further obstacles for women to access transport services, leading to their social exclusion. As a result, many women prefer to walk to their workplaces within the city limits. The experience of transport-related discrimination varies depending on the respondent's age, occupation, religion, caste and hygiene practices. Women experience discrimination mainly in private transport services, but also face it in public transport services. The findings of this research provide valuable insights for policymakers, city transport authorities, social workers, and community organizations to take action towards creating a more inclusive and equitable transportation system for all.

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Session 3: Transport inequalities for Older adults and PWD

Abstract 10: Mobilitiescape of Older Adults in Coastal Communities in Bangladesh

Bishawjit Mallick

Most industrialized countries of the North have several established state-sponsored programs to respond to the mobility care of older adults, which primarily cannot be seen in most developing countries. Neither government responsibilities nor appropriate material resources are available in developing countries; some appear as an unmatched dream forever for those economically meager countries compared with the high technical and societal standards of the developed countries. This research aims to answer what and how older adults deal with their mobility in coastal Bangladesh. The mobility is explained by the scenario of (i) extreme events, (ii) regular activities, and (iii) health emergencies. The analysis is drawn from the biographic interviews of twelve males and ten females (aged 60+ years) in cyclone Aila 2009 affected villages in Southwest Bangladesh. Results show that mobility care of older adults in coastal Bangladesh is the sole responsibility of their families. There is no such arrangement where the local authorities can provide emergency transportation services to evacuate older adults to safe areas before a disaster strikes. During extreme events, mainly older adults were provided shelter assistance, including pre-positioned shelters, temporary housing, and essential supplies such as food, water, and medicines, mainly by their families. The situation during health emergencies of an older-adults is not different than a disaster, and there are differences across gender and the well-being of the families. In particular, how they perceive mobility and how they improve their facilities for older adults i.e. houses, road network, health facilities, etc. Thus, it is essential to prioritize the needs of older adults during disasters or health emergencies. Implementing such mobility supports can go a long way in ensuring that older adults are safe and have access to the resources they need during emergencies.

Abstract 11: How Individual Perceptions of Transportation Systems Influence Mode Choice for Mobility-Challenged People: A Case Study in Dhaka using an Integrated Choice and Latent Variable Model

Hossain Mohiuddin, Md Musfiqur Rahman Bhuiya, Md Musleh Uddin Hasan, and Hue-Tam Jamme

Little is known about how mobility-challenged persons (MCPs) cope with the limitations of transportation systems in general, and even less in a South-Asian mega-city like Dhaka, Bangladesh. This study makes a contribution in these regards, using an integrated choice and latent variable (ICLV) model. Such an empirical strategy enables to account for perceptions of mode-specific challenges, which arguably vary by individual, depending on the nature of the mobility impairment. These perceptions are posited as latent variables in the proposed framework. Survey data was collected from a sample of 400 MCPs living in Dhaka. Observable parameters include sociodemographic characteristics and trip-related factors. The latent variables were constructed via a factor analysis of 18 statements about the experienced severity (ranked on a scale from 1-5) of mode-specific challenges. Holding socio-demographic and travel-related factors constant, we find that perceptions of mode-specific challenges significantly influence mode choices – while the degree of impairment alone, and related mobility aid needed, do not. In particular, perceived limitations of the walking infrastructure shifts MCPs' travel demand towards the bus, whereas bus fare-related issues encourage the use of non-motorized and powered three-wheelers. We conclude with recommendations to enhance the accessibility of transportation systems in Dhaka.

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Abstract 12: Inequalities within Mobility Inequalities: A Case Study of Mode-Specific Problems Faced by Movement Challenged Persons of Dhaka, Bangladesh

Md Musfiqur Rahman Bhuiya, Md Musleh Uddin Hasan, Afrin Hossain Anni, Hossain Mohiuddin, and Zhi Chen,

This study explores mode-specific problems faced by movement-challenged persons (MCPs) in making trips by different travel modes in Dhaka, Bangladesh. 400 MCPs were asked to rank the extent of mobility challenges of four modes on a scale of one to five through a questionnaire survey. MCPs reported lack of ramp and undulated surface are the most severe problems related to bus and walking respectively while excessive fare charged by drivers is found as the most severe problem for both rickshaw and CNG. This study captures the uneven effects of mode-specific challenges endured by MCPs of different gender, ages, and mobility aid users. Opinions on the lack of standardized slope along footpaths, the presence of cracks on footpaths, the lack of ramps on the buses, and rude behavior of bus staff vary significantly with gender, age, and mobility aids; the unwillingness of bus staff to carry MCPs varies significantly with age and walking instrument; the narrow width of footpaths, the additional fare charged by rickshaw pullers, the lack of space to keep the mobility supporting aids on buses and rickshaws, and the lack of available space to maneuver on a bus varies significantly with the walking instrument.

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Abstract 13: Challenges of walking for senior citizens in Dhaka, Bangladesh

Ahmad Tousif Jami, Shanawez Hossain

Dhaka has achieved rapid urbanization towards becoming a fast-growing megacity (Swapan et al., 2017). Unfortunately, the development plan is not all-inclusive, and senior citizens (over 60 years) have many challenges, including walking. Whether the walking is to commute, for exercise, or without an ulterior motive - challenges are entangled in these instances. For example, motorized commuting has become increasingly inefficient - in 2004, the average daily traffic speed was estimated at 21.2kph (Transport Co-ordination Board, 2005), and by 2015 this had fallen to 6.8kph (Dhaka Transport Coordination Authority, 2015) The population in Dhaka is 1,02,78,882, with 59,79,537 in Dhaka North and 42,99,345 in Dhaka South (Bangladesh Bureau of Statistics, 2022). The living area of Dhaka is 1528 square kilometers (Swapan et. al., 2017). This means Dhaka's population density is currently 6,727.017 per square kilometers (total population in Dhaka / total area in Dhaka). Such a dense city comes with many challenges, and one of the challenges in Dhaka has been the issue of mobility. The elderly, in specific, face many challenges while commuting.

One of the primary challenges for senior citizens in Dhaka is accessibility. Most of the city's infrastructure is not designed to accommodate the elderly, particularly in the city's transportation system. The public transportation system, which consists mainly of buses, is often overcrowded, and the elderly find it challenging to navigate the chaotic and congested streets. Consequently, many elderly individuals choose to walk for short distances to avoid the inconvenience of public transportation. However, this option comes with its own set of challenges.

The footpaths in Dhaka are not well-maintained and often obstructed, posing a severe risk for the elderly, who may have difficulty balancing or walking on uneven surfaces. In addition, footpaths are usually occupied by vendors, making it even more difficult for senior citizens to walk comfortably. Moreover, the roads in Dhaka are overcrowded, and pedestrians have to navigate the constant flow of motorized traffic, putting them at risk of accidents.

Often for shorter distances, senior citizens would like to walk that distance by themselves to be unrestricted by motor traffic. However, the reality, unfortunately, is different as walking is met with unsuitable circumstances - the footpaths often only exist in some parts of the city, and when it does - it tends to be very dirty. The roads are often overcrowded, characterized by Dhaka being the most densely populated city in the world (Statista, n.d.). Moreover, there are frequent pickpockets, with 970 mugging cases recorded in 2021 and 980 in 2020 (Mahmud, n.d.) - and the numbers are much higher in reality as most cases typically just go unreported. Altogether, elderly individuals need an available scope to safely and comfortably walk in Dhaka.

Several solutions could be implemented to address the challenges of walking for senior citizens in Dhaka. One possible approach is establishing safe parks and walking zones for the elderly. These areas should be well-maintained, with well-paved footpaths and benches for the elderly to rest. In addition, law enforcement agencies should patrol these areas to ensure the safety of the elderly. In some parts of the city such arrangements are being implemented, particularly in some residential areas such as Gulshan, Banani, Dhanmondi, Uttara, DOHS. However, in most cases parks of these areas are mostly restricted not only for residents of these areas but also in some cases only for designated members. Thus, in some instances, by restricting public spaces, city authorities are creating an unequal development pattern prioritizing only a particular segment of the society.

Similar situation is evident also in public transportation cases where in some areas we have seen the introduction of a particular type of air conditioned public bus services with much higher prices such as

Gulshan Chaka or Dhaka Chaka transport service, only available in Gulshan, Banani area. This also creates a segmented society excluding or restricting a particular segment of the society to live in those areas who cannot afford to pay higher. Towards achieving sustainable and egalitarian development, Dhaka must make sure its public transport resources are equitably distributed.

Another solution is to educate and train the elderly on safe walking practices. This training could include tips on navigating through crowded streets, avoiding pickpocketing and theft, and maintaining balance while walking on uneven surfaces.

The city authorities could also consider implementing innovative technologies to assist the elderly in walking. For example, using sensors on footpaths could detect any obstructions, and the authorities could then take necessary actions to clear the footpath. Moreover, using mobile applications that guide the elderly on the safest and most accessible routes could be considered. Furthermore, the city authorities should prioritize the needs of the elderly in their development plans. This could include designing infrastructure that accommodates the elderly, such as well-maintained footpaths and benches, and improving the public transportation system to make it more accessible to the elderly.

To avail this, many different methods can be taken by learning from best practices globally, such as healthy elderly practices in mainland China (PRB, n.d.), and adapting it with innovative and feasible scope for local implementation in alignment with all relevant stakeholders. In essence, the walking challenges for senior citizens in Dhaka are significant and require urgent attention. The elderly population is a vulnerable group, and their well-being and quality of life are significantly impacted by the challenges they face in accessing and navigating the city. To address these challenges to improve elderly mobility, solutions such as establishing safe parks and walking zones, providing education and training, implementing innovative technologies, and prioritizing the needs of the elderly in development plans must be considered.

Session 4: Intersectionalities between transport and social inequality in India and Bangladesh [INTALInc Seminar Series]

Abstract 14: Modest Mobilities: Performing gender and respectability on two-wheelers in Dhaka

Seama Mowri, Ajay Bailey

Taking moto-mobility (motorized two-wheelers) as a point of entry, this paper draws on six months of extensive qualitative fieldwork in Dhaka and locates how women commuters perform gender and respectability, within the urban patriarchal structures, to carve out safe mobility corridors in the city. Who are these female moto-riders and what prompted them to embrace a two-wheeler on the dangerous streets of Dhaka city? How are they perceived by other commuters and more importantly, by what means do they negotiate normative ideals of 'respectability' whilst traversing the streets on a vehicle that itself lends to gendered meanings? Theorizing the mundane mobility encounters of female commuters on two-wheelers, this paper reveals the construction, complexity, and contestations of performing gender alongside dominant masculinist vehicles on the streets.

CONFIDENTIAL

Abstract 15: Urban traffic congestion and impact on health of older adults and wheelchair users in Dhaka, Bangladesh

Selim Jahangir, Ajay Bailey, Md Musleh Uddin Hasan, Shanawez Hossain

Urban traffic and transportation are important determinants of mobility for accessing the workplace, health care and social interactions. But urban traffic congestions have detrimental impacts on public health. Based on 60 semi-structured in-depth interviews, the study aims to explore the perceptions of health impacts of older adults and wheelchair users while using public transportation in Dhaka, Bangladesh. The study employed different qualitative research methods such as visual surveys, in-depth interviews and field diaries to explore the interactions between urban traffic transport and health of the older adults and wheelchair users for their everyday mobility. An interpretative thematic analysis approach was used to analyse the data. The study found that traffic congestion, along with inappropriately managed transportation system adversely impact the physical and mental health of these vulnerable groups. Besides, participants' socio-economic status, age, gender and disability impact the accessibility of public transportation and travel behaviour that influence their health and well-being. The study also brings forth the negotiating strategies to address the challenges to accessing public transportation and healthcare services. The study would facilitate policymakers and urban planners in understanding the health impact of urban traffic congestion on older adults and people with wheelchairs. An inclusive transportation policy is essential for safe and efficient access to public transportation for all ages and groups

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Abstract 16: Barriers to women's mobility in the first- and last-mile stretches in Kolkata

Sanghamitra Roy, Ajay Bailey, Femke van Noorloos

Women's travel patterns are significantly influenced by the context of travel. While walking and public transport are the primary modes of transport for women in developing countries, availing of the same is not without barriers, particularly in the first- and last-mile stretches due to poor services, crowding, transfers, waiting, and lack of pedestrian infrastructure. This paper aims to understand how the first- and last-mile stretches are accessed by women in Kolkata, the barriers faced while doing so, how the barriers influence their accessibility, affordability, and acceptability, and ways in which they respond to the barriers. The data for this qualitative study is derived from visual surveys of selected locations in Kolkata and 38 in-depth interviews to understand women's lived experiences, nuances of everyday travel, and diversity of experiences and perceptions. This paper finds that the major barriers to walking, and accessing autos and buses are primarily heavy traffic, speeding vehicles, negligent driving, chaotic transfers, long queues to access autos, crowded conditions of buses, difficult and unsafe boarding and alighting, and absence of or obstructed sidewalks. The barriers make women feel unsafe, increase travel time, board or alight with great difficulty, and walk on busy streets with mixed and heavy traffic influencing the acceptability and accessibility of public transport. The barriers also influence affordability as transfers increase travel costs or women are often compelled to choose costlier modes. These findings can help institute appropriate planning and design interventions to ensure women's mobility without challenges in the first and last mile stretches.