Research Article

Current Research in Traffic Transportation Engineering

The Effects of Traffic Congestion Among University Students in Dhaka

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Submitted: 2025, Aug 05; **Accepted:** 2025, Sep 11; **Published:** 2025, Sep 23

Citation: Sakib, S., Adreeta, J. A., Paul, N., Bhuiyan, A. F. S., Islam, H. (2025). The Effects of Traffic Congestion Among University Students in Dhaka. *Curr Res Traffic Transport Eng, 3*(1), 01-04.

Abstract

Dhaka, the capital city of Bangladesh, faces severe traffic congestion due to rapid urbanization, poor infrastructure and limited transportation planning, which significantly affects university students who commute daily. This study aims to explore how traffic congestion impacts the quality of life for university students in Dhaka by assessing its effects on their academic performance, mental and physical health, and overall daily routines. A survey was done with 82 students from different universities in Dhaka. Most students use public transport, and many said that congestion made them late, tired and less focused in class. The results showed that students who face traffic congestion more often reported more difficulty in academic and personal lives. Public transport users were affected the most. The study found a clear correlation between frequent traffic congestion and impact on the quality of life. The study highlights the need for better transportation, flexible class schedules and student-friendly city planning to help reduce the impact.

Keywords: Traffic, Congestion, Students, Dhaka, University

1. Introduction

1.1. Background Information

Dhaka, the bustling capital of Bangladesh, has been grow- ing rapidly, and with that growth comes a serious problem: traffic congestion. Every day, thousands of people, including university students, get stuck on the roads for hours, struggling to reach their destinations. For students, this is not just frustrating; it affects their entire daily routine. Early morning or late evening classes often mean waking up earlier than necessary or getting home late, which leads to stress, tiredness, and less time to study or relax. Over time, this can impact their academic performance and mental well-being [1,2].

1.2. Overview

This research focuses on how traffic congestion affects the lives of university students in Dhaka. To explore this issue, data was collected from primary sources using a questionnaire. By examining the experiences of students and looking at the bigger picture of the traffic congestion situation in Dhaka, this study aims to show how deeply traffic congestion impacts student life. The goal of this study is to provide determine the relationship of traffic congestion on the quality of life of the university students. It also aims to provide insights for urban planners and education policymakers so they can take steps to make things better for students in one of the most traffic-congested cities in the world.

2. Literature Review

In a recent study by the IEOM Society, presented at the 7th Annual International Conference on Industrial Engineering and Operations Management, researchers examined how traffic congestion affects students in Bangladesh [3]. A survey of 87 students revealed that 60.5% reported disrupted attendance, 51.2% had trouble focusing, 58.1% experienced lower grades, and 73.3% felt stress and fatigue due to long commutes. The study concluded that traffic not only disrupts daily routines but also negatively impacts students academic lives. It further suggested that practical measures could help reduce stress and improve focus and attendance. Amelia et al. , from Mercu Buana Yogyakarta and the University of Southern Mindanao, investigated how traffic congestion contributes to student stress in Yogyakarta [4].

Surveying 101 university students, they found that congestion based on travel time and vehicle volume accounted for 53.2% of reported stress. Many students experienced anxiety, anger, or mental fatigue due to traffic, regardless of gender. The study highlighted a clear connection between congestion and mental health, which in turn affected academic performance.

Ali et al., from Nanjing Tech University, examined the root causes and broader impacts of traffic congestion in Dhaka [5]. Their research identified rapid urban expansion, inadequate infrastructure, insufficient public transportation, and weak enforcement of traffic

laws as primary contributors. They reported that over eight million work hours are lost daily in Dhaka due to traffic. The study noted that congestion harms not only productivity but also public health by increasing pollution and stress. The authors recommended enhancing public transit, expanding road networks, promoting walk- ability, and tightening law enforcement while emphasizing the need for political will, financial investment, and community support.

3. Methodology

A quantitative research approach utilizing a cross-sectional survey design was used to examine the effects of urban traffic congestion on quality of life indices among university students in Dhaka. The study population comprised university students enrolled situated within the city of Dhaka. Participants were selected through convenience sampling methodology to acquire data regarding their experience with traffic congestion. Data collection was done through a structured questionnaire consisting of fourteen questions: four questions collecting demographic variables, one question collecting the frequency of congestion experienced, and nine questions assessing the impact of traffic congestion on various aspects of life. The impact assessment questions employed a 4-point Likert- type scale for quantification purposes. The distribution of the questionnaire was performed using the Google Forms platform.

A total sample size of n = 82 responses was obtained and analyzed by utilizing Statistical Package for Social Sciences (SPSS) software. Analysis included descriptive statistics for demographic data. To quantify the dependent variable, an Impact on Quality of Life (IQoL) index was constructed by aggregating the responses of nine Likert scale impact questions, where the four-point Likert scale responses were weighted from 1 to 4. A higher IQoL score indicates a high negative impact on quality of life. Pearson correlation coefficient analysis was used to look into the relationship between the Impact on Quality of Life (IQoL) Index and self-reported frequency of traffic congestion exposure. Other variables were also analyzed individually against the frequency of traffic congestion exposure to provide with more insights on how congestion affects the quality of life.

4. Results and Discussion

4.1. Results

- Summary of Respondent Demographics: The sample size is n = 82. Table I shows that all individuals surveyed reside in Dhaka and are currently university students. For their primary mode of transportation, the majority rely on public transport, while a substantial portion uses private transport and walking or rickshaw. Ride-sharing services are the least used among these modes.

Variable	Category	Percentage
Lives in Dhaka	Yes	100%
Education level	University	100%
Primary mode of transportation		26.83%
	Private transport	43.90%
	Public transport	4.88%
	Ride-sharing	24.39%
	Walking/Rickshaw	

Table 1: Demographics of The Respondent

- Overall Impact on Quality of Life: Nine impact question values were aggregated to construct the Impact on Quality of Life (IQoL) index, which has a minimum limit of 4 and maximum limit of 36. From Table II, The IQoL index has a mean score of 21.69 with a standard deviation of 3.86. This indicates a moderate overall negative impact of traffic congestion on quality of life among the students surveyed, with low variability in experiences.

Variable	Statistic	Value
IQoL	Mean	21.68
	Std. Deviation	3.86
	Minimum	10.00
	Maximum	28.00

Table 2 : Descriptives of the Impact on Quality of Life (Iqol) Index

- **Specific Impact of Traffic Congestion:** Figure 1 shows that students who responded by public transport reported a higher average impact on their quality of life caused by traffic congestion compared to other modes of transportation. Other modes of transportation have similar levels of impact. Figures 2, 3, 4 depict the terrible negative impact of traffic congestion. The figures show that with an increasing frequency of traffic congestion, various aspects of life are increasingly affected.

Congestion restricts participation in extracurricular activities and also negatively impacts the ability to focus during classes and the punctuality of classes. Psychological and physical health are considerably affected by the increase in traffic congestion.

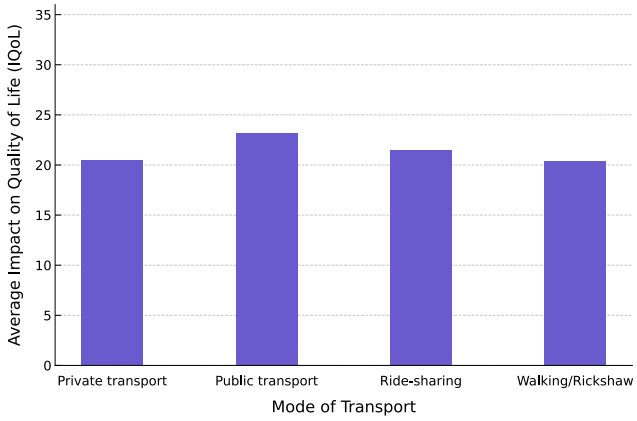

Figure 1: Average IQoL by Mode of Transport

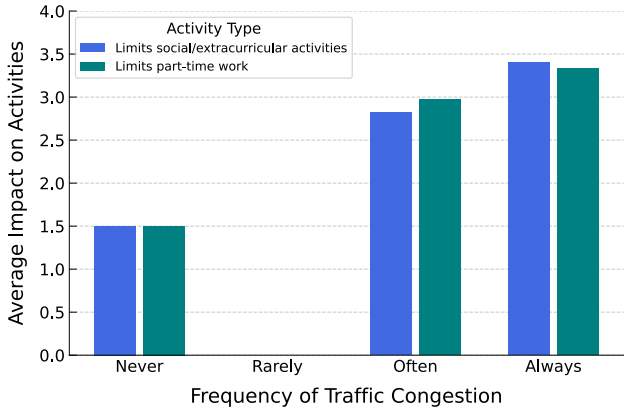

Figure 2: Impact of Traffic Congestion on Activities

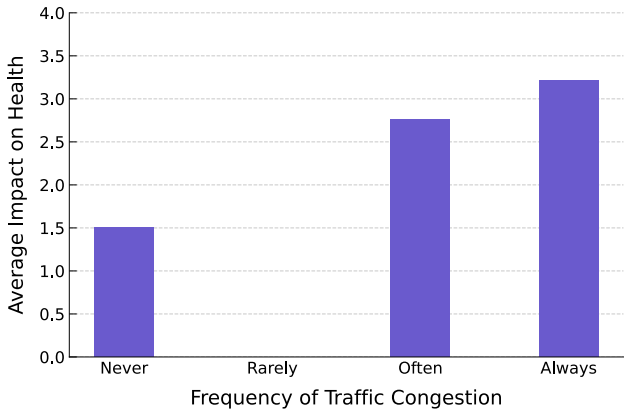

Figure 3: Impact of Traffic Congestion of Psychological and Physical Health

- **Correlation Analysis:** A Pearson product-moment correlation coefficient was calculated to assess the relationship between the frequency of experiencing traffic congestion and the Traffic Impact on Quality of Life Index.

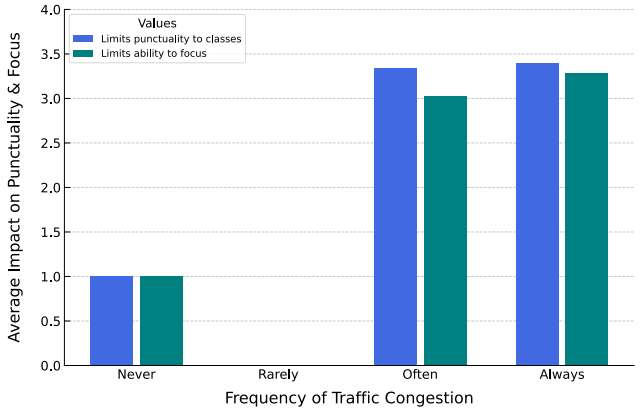

Figure 4: Impact of Traffic Congestion on Punctuality and Focus

The analysis revealed a moderate positive correlation, $r = 0.408$. Table III summarizes the correlation analysis. This positive correlation indicates that as the frequency with which university students in Dhaka experience traffic congestion increases, the perceived negative impact on their quality of life also tends to increase. The moderate strength of the correlation suggests that, while there is a clear relationship exists, other factors also contribute to variations in the quality of life of students.

		IQoL
Traffic Congestion Exposure Frequency	Pearson Correlation	0.476*
	Sig. (2-tailed)	0.000
	N	82

*p-value < 0.01

Table 3: Correlations

5. Discussion

This study investigated the effects of traffic congestion on the quality of life among university students in Dhaka. A moderate positive correlation (r = 0.408) was found between the frequency of experiencing traffic congestion and the Impact on Quality of Life (IQoL) index, indicating that more frequent congestion is associated with a greater negative impact on student well-being. The IQoL index, with a mean of 21.69 (SD = 3.86), suggests a moderate and relatively consistent negative impact across the student population. Specific findings high- light that congestion significantly impairs academic punctu- ality and focus, negatively affects psychological and physical health, and restricts participation in social and extracurricular activities. Notably, public transport users reported a higher average negative impact compared to those using other modes. Although traffic congestion is a clear contributor, the moderate correlation suggests that other factors also influence the quality of life of students.

6. Limitations

The limitations of this study include the cross-sectional design and sample size. A larger sample size would have provided more

accurate findings and correlations, suggesting scope for further future research.

7. Conclusion

This study found that traffic congestion in Dhaka signifi- cantly affects the lives of university students, causing delays, stress, and reduced academic focus. Students using public transport face the highest negative impact, with many report- ing difficulty attending classes on time and managing their routines. The Impact on Quality of Life (IQoL) index showed a moderate but consistent negative effect, and a positive cor- relation was found between congestion frequency and reduced well-being. While traffic may seem like just an infrastructure issue, this research highlights it as an educational and health concern too. Congestion not only slow down vehicles, it slows down the progress of students, reduced academic focus, and reduces their overall well-being.These findings highlight the need for better public transport, flexible academic schedules, and student-focused urban planning to reduce the burden of traffic and support student success and mental health.

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