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Passengers' Satisfaction towards Service Quality with Public Transportation in Kathmandu Valley

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Abstract

The operation of public transportation is a public service. Nepal's only cooperative public transportation system is Sajha Yatayat. Additionally, many public transportation options are operated by private companies. Kathmandu is the capital of Nepal; hence the population and public transportation are under significant strain. Therefore, this location was chosen for the research on passengers' satisfaction with the service quality of public transportation. The survey issued 80 questionnaires to riders of public transportation. 52 surveys were returned. Forty of the samples were valid for analysis. 26 passengers (65%) said that evening and nighttime access to public transportation was extremely limited. In addition, 16 (40%) of respondents felt uneasy riding in public transportation. Similarly, 27 (67.5%) respondents noted poor hygiene, and 22 (55%), dangerous public transportation. However, the majority of passengers are dissatisfied with the accessibility, comfort, cleanliness, and safety of public transportation. Only the transportation fare provides satisfaction to passengers. In order to increase passenger happiness, the relevant authority should be accountable for enhancing the service quality of public transportation.

Keywords: Passenger, Public-transport, Satisfaction, and Service-quality

1. Background and objectives

The private sector operates buses, microbuses, minibuses, tempos, and taxis, and also manages the public transportation system. Sajha Yataat is the cooperative public transportation system in Nepal. In the Kathmandu Valley between 1961 and 1962, a group called Sajha Yataat was created to provide fast and inexpensive open transportation (Mishra, Sah, & Aithal, 2020). Everyone is permitted to use public transit, which operates along specified routes and charges predetermined fares. It could include tempos, minibuses, microbuses, trolleybuses, trams, and trains. In addition to reducing traffic and air pollution, high-capacity public transportation systems may affect the urban form and quality of life in cities by making transportation services accessible to a large number of people (Karki & Shahi, 2019). There are 27 valley bus lines and approximately 166 city routes in the Kathmandu Valley (including bus, minibus, microbus, and tempo services that operate largely along the Ring Road) (KSUTP, 2010). Urban families can reach the bus stop in 12 minutes, compared to the national average of 30 minutes (Central Bureau of Statistics, 2011). According to the Department of Transport Management (2018), only 2.5% of all passenger vehicles registered in the valley are public transit, and 78.5% of these vehicles are two-

wheelers. Private, government, and diplomat automobiles account for 97.5% of the entire registered transportation fleet (DOTM, 2018).

In September 1959, the Nepal Transport Service introduced a local bus service between Kathmandu and Patan, marking the beginning of public transportation in Nepal. Before it was shut down in 1966, it ran a fleet of eleven buses and carried over 10,000 people every day. The cooperative Sajha Yaayat began providing commuter transportation services between districts and inside the Kathmandu Valley. However, in recent years, the Kathmandu Valley's public transportation system has been wholly controlled by the private sector and is self-financing, meaning that it receives no government subsidies. The government sets the fare structure, which is determined by the amount of passenger kilometers traveled (DOTM, 2011).

Population growth in the Kathmandu valley has averaged 4.32 percent yearly over the past decade, while motorization has increased by 12 percent. However, the percentage of automobiles has remained practically steady. This is a critical issue for the general public, the majority of whom use public transportation for their everyday commutes. Another big issue is that women encounter more challenges than men when utilizing public transit. During travel, people are treated severely by drivers and con-doctors, and their safety in public transportation is not guaranteed. They are subject to multiple sorts of abuse. Numerous problems encountered by passengers have led them to the conclusion that "public transportation is not for the general people; it is intended for business." (Rimal, 2016). Every passenger is aware of the importance of safety and security when traveling by public transportation; thus, it is crucial to construct the complete system and develop robust rules to assist the passengers. The user's comprehension and awareness are the most important aspects in the improvement of the condition. Utilizing cutting-edge technology, enhancing management, and establishing long- and short-term goals all contribute to an increase in the safety and security of public transportation (Joewono & Kubota, 2005a).

Research was conducted in the Kathmandu valley with the purpose of assessing the quality of the S-5 route's public transportation service and identifying future enhancements. A questionnaire was administered to 107 passengers to determine how they felt about the quality of public transportation. Metrics used to evaluate the quality of the public transportation service included service dependability, comfort, security, safety, cleanliness, waiting times, walking times, peak hour frequency, off-peak hour frequency, route change, fare, employee conduct, driver recklessness, information, and feedback. It was graded on a Likert scale ranging from 1 to 5. The average score for the level of service provided by the public transportation system was 3.14, which is regarded as excellent. According to data analysis, reliability and frequency of service during peak hours were of poor quality, although waiting times, cleanliness, and information were of average grade. In order to increase the level of service for the S-5 route in the Kathmandu Valley, several components of the public transportation system should be studied and enhanced (Karki & Shahi, 2019).

The transportation system in the Kathmandu valley has deteriorated due to unplanned urbanization, rising motorization, a lack of suitable transit infrastructure, increased traffic congestion, and deteriorating air pollution. Traffic in the valley has significantly increased due to the region's high urbanization and development concentration (Prajapati, Bajracharya, Bhatpara, & Froyen, 2019). Passengers in public transportation are dissatisfied due to these issues. The purpose of the survey was to discover how satisfied Kathmandu passengers are with the quality of public transportation.

2. Materials & Methods

The study uses a descriptive research design because it talks about how well public transportation works in the Kathmandu valley. It was a cross-sectional study because the survey questionnaire was used to gather data from a single visit to the field. The study looked at people who took public transportation. At the public bus park, 80 questionnaires were given out at random, but only 52 were filled out and sent back. Forty of them were good enough to put into the software and analyze. Primary data was used to figure out how happy passengers were, and the results of this study were talked about in conjunction with the results of other studies. The data were analyzed with statistical software (SPSS, version 23), and the results are shown in tables.

3. Result & Discussion

3.1 Public Transport Accessible During Evening/Night

In Kathmandu valley, it's hard to find a public bus or taxi after 8 p.m. It makes it hard for people to move from one place to another. Most people have to leave their homes at night because of an emergency. This includes people who work evening and night shifts, college students, businesspeople, and other people. Taking these things into account, the study asked people how easy it was to use public transportation in the evening and at night. Table 1 shows how the responses on Likert's scale, which has five points, were spread out.

Table 1: *Public Transport Accessible During Evening/Night*

Availability	**Frequency**	**Percentage**
Very frequently accessible	2	5
Frequently accessible	6	15
Occasionally	6	15
Rarely	18	45
Very Rarely	8	20
Total	**40**	**100**

In a similar survey done in the Kathmandu Valley, 25% of people said that the service was often during off-peak hours, while 75% said that it was neither often nor rarely. The average score for off-peak hour service frequency was found to be 3.25. This means that the off-peak hour service frequency is of high quality (Karki & Shahi, 2019). In a similar way, a different study shows that most people, or about 55%, have to wait for public transportation every day for an average of 5 to 10 minutes during the morning rush hour. At rush hour in the evening, the average wait time for 45.8% of people is between 5 and 10 minutes every day. 31% of people can't use public transportation regularly or sometimes. 28.7% of people can use it frequently or sometimes, and 10.8% of people can't use it at all in the evenings and at night. Because there isn't much public transportation after 8:00 p.m., the evening/night hours are from 6:00 p.m. to 8:00 p.m. (Udas, 2012). The results of these two other studies back up the results of this study. All of these studies show that public transportation is hard to get to in the evening and at night.

Clean Air Network Nepal did a survey in 2014 in the Kathmandu valley. It found that 69.1% of passengers think that public transportation drivers' drive recklessly, which makes 57.7% of passengers uncomfortable when they ride. Another survey found that 30.5% of people waiting for a ride in the morning had to wait more than 10 minutes (Clean Air Network Nepal, 2014). Another study done in the Kathmandu Valley shows that 21.27 percent of those who took part were unhappy with the quality of Sajha Yatayat, bus, and microbus service (Mishra, Sah, & Aithal, 2020).

3.2 Seat and Seating Arrangement of Public Vehicle

The quality service of public transportation can be judged by the seats and how they are set up. We can tell from our daily commutes that most people use public transportation to get to and from work. People who are young, old, or can't move around well often can't use public transportation because it's too crowded. The study also asked people how they felt about their seats and how they were set up in public transportation.

Table 2: *Seat and Seating Arrangement of Public Vehicle*

Arrangement	Frequency	Percentage
Very comfortable	1	2.5
Comfortable	3	7.5
Neutral	14	35
Uncomfortable	16	40
Very uncomfortable	6	15
Total	**40**	**100**

Table 2 shows how the seats in public transportation vehicles are set up. From this table, we can see that only 2.5%, or one person, felt very comfortable in a seat on public transportation. This is the lowest rate of all. 16 of the respondents, or 40%, said that the seat in a public vehicle was uncomfortable. Also shown is that 15% of respondents felt that seats on public transportation were very uncomfortable and 35% of respondents did not have a strong opinion one way or the other.

Clean Air Network Nepal (CANN) and Clean Energy Nepal (CEN) did a study that found most public transportation is crowded and there aren't enough seats during peak hours. This backs up what the study above found. About 34.2% of people who take public transportation don't feel comfortable sitting, and 6.1% feel very uncomfortable. 34.5% of people don't like or dislike their seats, while 24.3% find their seats to be neither (Udas, 2012). In another survey, which included 107 people from the Kathmandu Valley, it was found that about 90% of passengers felt comfortable, 6.5% felt average, and only 3% felt uncomfortable. The average comfort score was found to be 3.89, which is considered to be acceptable service quality (Karki & Shahi, 2019).

3.3 Clean and Well-Maintained of public Vehicle

Cleanliness and hygiene are important for creating a healthy environment. An unhygienic environment makes passengers vulnerable to communicable diseases. People's lifestyle routines have also changed because of Covid-19, as well as people are now more concerned with health and cleanliness. The buses used by public transportation still aren't cleaned and sanitized well enough, so the issue was brought up with passengers in the Kathmandu valley.

Table 3: *Clean and Well-Maintained of Public Vehicle*

Arrangement	Frequency	Percentage
Very clean and well maintained	2	5
Clean and well maintained	4	10
Neutral	7	17.5
Dirty and poor maintained	19	47.5
Very dirty and poor maintained	8	20
Total	**40**	**100**

Table 3 shows information about how clean and well-kept public transportation is. The data shows that 19 or 48 percent of respondents agreed that the public vehicle was

dirty and in bad shape, while only 5% agreed that the public vehicle was very clean and well-kept.

A part of the Public Transport Code of Conduct, 2067, says that public transportation must be clean, sanitary, and in good working order. 20% of people who use public transportation think it is clean and well-kept, but 67.3% think it is dirty and poorly maintained, and 12.4% think it is very dirty and poorly maintained (Udas, 2012). The conclusion of this study is backed up by what Karki and Shahi found (2019). Karki and Shahi said that 60% of people who used public transportation thought it was neither clean nor dirty, 24% thought it wasn't clean, and 16% thought it was clean. In terms of cleanliness, the average service quality was found to be 2.92, which is average (Karki & Shahi, 2019). All of these studies found that most of the people who took part said that public transportation was not clean or safe.

3.4 Safety of passengers

Safety is the most important thing when people are traveling. The first thing a driver has to do is drive safely and think about the safety of other people in the car. In general, when traveling, women, children, and people with disabilities should be kept safe.

Table 4: *Safety of Passenger*

Arrangement	Frequency	Percentage
Very safe	1	2.5
Safe	5	12.5
Neutral	12	30
Unsafe	13	32.5
Very unsafe	9	22.5
Total	**40**	**100**

Table 4 shows the percentage of respondents who felt safe or unsafe on public transportation in the evening or at night. The data show that 13 of the respondents (32.5%) felt unsafe using public transportation in the evening or at night, and only one person felt very safe using public transportation in the evening or at night. Nine people said they felt very unsafe using public transportation in the evening or at night.

One previous study didn't agree with what this study found. Karki and Shahi did a study in the past that said security is one of the most important measures of how well public transportation works. 80% of passengers said they felt safe, 14% said they didn't feel safe or unsafe, and 3% said they didn't feel safe. The average security score was found to be 3.80, which is considered to be of high service quality in terms of security (Karki & Shahi, 2019). In the same way, a survey done by the World Bank in the Kathmandu Valley in 2013 showed that customers were not happy with the public transportation services. People said that crowding (75%), not feeling safe (26%), and careless driving, as well as fear of accidents (17%), were the biggest problems with the service. According to the report, 26% of women aged 19–35 who used public transportation were subjected to unwanted contact (World Bank, 2013).

42.3% of passengers were happy with the total time they spent in the vehicle, while 57.7% were not. The way public transportation works and the amount of traffic in the valley have a direct effect on how long people have to wait and how long they have to ride. 68.3% of passengers think that some drivers and conductors are nice and some are not. 11.1% think they are nice, 10.7% think they are unresponsive, and 3.4% think they are rude (Udas, 2012).

3.5 Transportation Fare

The higher price of petroleum oil is making public transportation costs go up. So, it makes sense to find out if people use public transportation or not. Since more people have to take the bus, transportation costs are bigger problems for people who use public transportation every day. Participants in the study were asked how much they had paid for transportation in Kathmandu valley.

Table 5: *Transportation Fare*

Arrangement	Frequency	Percentage
Cheap	2	5
Affordable	22	55
Neutral	10	25
Expensive	4	10
Very expensive	2	5
Total	**40**	**100**

Table 5 shows the prices of public transportation. Most of the people who answered (22 or 55%) agreed that transportation fares were affordable, while only 2 (or 1%) said that fares were very expensive. 10% of the people asked had no opinion about the prices of transportation in Kathmandu. The same fare may be affordable for one passenger but too expensive for another, depending on how much money they make. One study by Clean Air Network Nepal and Clean Energy Nepal backs up this finding. People thought that existing public transportation was cheap 46% of the time, expensive 50% of the time, and very expensive 2.7% of the time. Most people in the middle class and working class get around on public transportation (Udas, 2012).

In general, people weren't happy with how well public transportation worked. Out of 40 people, 26 said that it was hard to get on public transportation in the evenings and at night. In the same way, 40% of those who answered felt uncomfortable sitting in public transportation. In the same way, 27 felt that hygiene was bad and 22 felt unsafe on public transportation. So, most passengers weren't happy with how easy it was to get to, how comfortable it was, how clean it was, and how safe it was. Previous studies back up the main conclusion of this one. Based on a study by Bhattrai, the bus's operating speed was found to be between 18.28 kmph and 27.18 kmph, and its travel speed was found to be between 8.03 kmph and 14.22 kmph. In a similar way, it was found that the microbus's travel speed was between 8.64 and 9.58 km/h, and its running speed was between 15.08 and 16.45 km/h. The trip time, waiting time, and running speed were the input variables for the DEA model study. The average number of passengers was chosen as the output variable. Using the DEA model to look at the data showed that the bus service was 24.5% more efficient than the microbus services. When Mahanagar Yatayat's efficiency was thought to be 100%, the DEA model analysis came up with 88.6% for the bus and 56.5% for the microbus. The study found that bus users are happier with their services than microbus users (Bhattarai, 2017).

The goal of this study was to find out how happy people on the Butwal-Bhairahawa route were with public transportation. According to the above analysis, there is no clear difference between how passengers act on the microbus and the a/c bus and how much they pay when figuring out the p-value. The last nine criteria for satisfaction show that microbus and a/c bus services are very different. The results show that the service of the microbus is better than that of the a/c buses, but because the overall indicator for the a/c buses is higher, it can be assumed that passengers were happier with the a/c buses' service (Bhattarai, 2019).

In another study, the Lamachour Chhorepatan route of Pokhara's public transportation system is looked at to see how well it works and how happy its users are with it. Data

Envelopment Analysis (DEA) is used to figure out how effective and efficient a system is based on input (journey time, waiting time, running speed, and number of stops) and output (daily ridership and vehicle kilometers) data. On the Lamachour Chhorepatan Route, the average travel time, waiting time, and running speed for the Pokhara bus were 65.07 minutes, 19.37 minutes, and 16.84 kmph, while the averages for the Bindhyabasini bus were 66.26 minutes, 19.87 minutes, and 14.89 kmph. On the Chhorepatan Lamachour Route, it took the Pokhara Bus 74.5 minutes, 30.34 minutes, and 16.80 kmph, while the Bindhyabasini Bus took 71.7 minutes, 20.78 minutes, and 14.34 kmph. Similar to how DEA-based operational performance analysis shows that both PBBS and BBBS are effective and efficient, the effectiveness and efficiency value for both service providers were found to be 1. (Duwadi, Marsani, & Tiwari, 2019).

4. Conclusion & Recommendation

The results of this study can help us learn more about the factors that affect the quality of public transportation services. It looked at how easy it was to get to, how the seats were set up, how clean they were, how safe they were, and how much the transportation cost. In general, passengers weren't happy with how well public transportation worked. Out of 40 passengers, 26 (65%) said that it was hard to get on public transportation in the evening and at night. In the same way, 40% of those who answered felt uncomfortable sitting in public transportation. In the same way, 27 (67.5%) felt that hygiene was bad and 22 (55%) felt that public transportation was unsafe. So, most people who use public transportation aren't happy with how easy it is to get to, how clean it is, and how safe it is. The passengers are happy with just the cost of transportation. So, the responsible authority should be in charge of improving the quality of public transportation services to make people happier.

5. References

Bhattarai, B. (2017). *Study on efficiency and satisfaction level of public transportation within Kathmandu inner ring road.* Master Thesis, Tribhuvan University Institute of Engineering Pulchowk Campus, Department of Civil Engineering Lalitpur, Nepal.

Bhattarai, S. T. (2019). Passenger satisfaction towards services of sublic transportation: Butwal – Bhairahawa. *SSRG International Journal of Economics and Management Studies, 6*(11), 29-33. doi:https://doi.org/10.14445/23939125/IJEMS-V6I11P104

Central Bureau of Statistics. (2011). *Nepal living standard survey 2010/11, Statistical Report* . Kathmandu, Nepal: Central bureau of statistics, national planning commission secretariat, government of Nepal.

Clean Air Network Nepal. (2014). *Public transportation in kathmandu valley, restructuring and reforming the system.*Hindawi.

DOTM. (2018). *Department of transport management, ministry of physical infrastructure and transport.* Retrieved from https://www.dotm.gov.np/en

Duwadi, S., Marsani, A., & Tiwari, H. (2019). Passengers satisfaction and operational performance analysis of public transportation service in Lamachour Chhorepatan route of Pokhara chhore. *Proceedings of IOE Graduate Conference, 2019-Summer Peer Reviewed*, *6*, pp. 197 – 203.

Joewono, T. B., & Kubota, H. (2005a). The characteristics of paratransit and non-motorized Transport in Bandung, Indonesia. *(Journal of Eastern Asia Society for Transportation Studies) 6th Conference.* Bangkok, Thailand.

Karki, B., & Shahi, P. B. (2019). Assessing the service quality of public transport service: A case of S-5 route in Kathmandu valley. *Proceedings of IOE Graduate Conference, 2019-Summer Peer Reviewed*, *6* , pp. 739 – 744.

KSUTP. (2010). *Kathmandu sustainable urban transport project, final report.* Kathmandu: Ministry of Physical Planning and Works, Nepal / Asian Development Bank.

Mishra, A. K., Sah, R. C., & Aithal, P. S. (2020). Operational assessment of public transport: A case of Kathmandu, Nepal. *International Journal of Case Studies in Business, IT, and Education, 4*(2), 132-152. doi:http://doi.org/10.5281/zenodo.4033197.

Prajapati, A., Bajracharya, T. R., Bhattarai, N., & Froyen., Y. K. (2019). Public bus accessibility and its implications in energy and environment: A case study of Kathmandu valley. *Journal of the Institute of Engineering, 15*(3), 253-260.

Rimal, P. (2016). *Public transportation: Is it really for the public?* . https://thehimalayantimes.com/business/perspectives/public-transportation-really-public/.

Udas, S. (2012). *Public transport quality survey.* Kathmandu, Nepal: Clean Air Network Nepal (CANN) and Clean Energy Nepal (CEN).

World Bank. (2013). *Gender and public transport :* Kathmandu, Nepal: The World Bank Group, and Australian AID. Retrieved from https://openknowledge.worldbank.org/handle/10986/11866