

Public Bus Transportation and Student Satisfaction: Evidence from Management Students in Kathmandu Valley

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Abstract

Background: In the contemporary period, rapid population growth and urbanization in Kathmandu Valley have intensified demand for public transport. This demand is particularly evident among the college students who use public transportation for daily mobility. The daily use of public services also invites various challenges that students have to go through daily.

Purpose: The purpose of the study is to examine management students' satisfaction towards public bus transport service in Kathmandu Valley. In addition, this study aims to identify challenges faced by management students and propose managerial solutions to improve public bus services in Kathmandu Valley.

Design/methodology/approach: This study is based on the service quality (SERVQUAL) model, which argues that public bus service quality qualities like affordability, availability, reliability, comfort, and safety impact the satisfaction of students. In order to find reality, the exploratory research design was chosen as the primary study paradigm. Both descriptive and inferential statistics were used to quantitatively assess the data. The relationships from the sample of 404 respondents were examined using Smart PLS 4.0.

Findings: The findings reveal that the majority of the students were female, which implies that female students are more active in using public buses than males. Additionally, it found that every student in the Kathmandu Valley who was surveyed uses public transport, with the majority of them stating that they do so because bus fares are less expensive than those of shared vehicles. This study also demonstrated that affordability, reliability, comfort, and safety have a positive as well as significant impact on student satisfaction using public buses. Further,

satisfaction also have significant impact on the actual use of public transport among students. In contrast, availability was found to have an insignificant impact on satisfaction.

Conclusion: The study concludes that it is necessary to enhance the service quality of the public transport to enhance utilization among the management students in Kathmandu Valley. Service quality can be increased by focusing on affordable tickets, a reliable transport system, comfortable seats, and the safety of students, especially girls. Besides, a proper schedule should be followed so that students can easily plan their journey based on the timetable.

Keywords: students, transport service, customer satisfaction, service quality, smart PLS 4.0

1. Introduction

In recent years, urbanization and population growth have increased demand for the world's current transportation infrastructure, particularly in urban areas (Deb & Ahmed, 2019; Oli et al., 2021). Public transportation is a service that is used by millions of passengers all over the world. In fact, it can be challenging to find someone who has never used public transportation, particularly in large cities (Deb & Ahmed, 2019; Devkota et al., 2021a). People now prefer to live in big cities because they offer so many possibilities in terms of economics, health, industry, education, technology, and transportation, not to mention much higher living standards. Transportation is one of the many factors that affect life standards and is an integral component of daily life (Tumsekali et al., 2021; Ghimire et al., 2023).

Transport is key to development. In developing country, there is always lack of adequate transportation planning, leading to congestion problems and high cost and lengthy travel times (Sánchez-Atondo et al., 2020). In the context of developing country like India, Indonesia and Bangladesh, the rise of private vehicles has also been accelerated by the poor public transportation services. Customer happiness rises as service quality rises, which in turn increases demand for public transportation (Bilisik et al., 2019). Public transportation is a crucial component of the infrastructure that supports metropolitan public services, which are naturally also entwined with social welfare issues pertaining to people's means of subsistence. Despite the fact that a small percentage of people use public transportation to commute, the service is still lacking (Chen et al., 2020). In many locations, public transportation is still developing more slowly than society and the economy as a whole, making it difficult to meet the needs of the public for transportation (Zhang et al., 2019).

A more enticing, secure, and technologically advanced public transportation system must be established in Kathmandu in order to meet the huge demand for additional public transportation (Shaaban & Khalil, 2013). With an expanding population, population density, and motorization, Kathmandu is the busiest city in Nepal (Manandhar, 2023). In Kathmandu, the use of public transport is declining and people are shifting towards other modes such as motorbikes and private cars (Karki & Bahadur, 2019). The increased demand for traffic seems to be beyond the capacity of the current facilities. As a result, issues including traffic jams, collisions, and pollution have become inevitable. By providing transportation services to a large number of people, high capacity public transportation systems have an impact on urban area by reducing congestion, air pollution, and increasing fuel economy per passenger. Compared to private vehicles, the space needed to transport the same number of people by bus is substantially smaller (Sharma & Pradhananga, 2021).

The current public transportation system used in the Kathmandu valley is chaotic, unreliable, uncomfortable, and polluting. With evidence of increasing traffic congestion issues in the Kathmandu valley, it is now necessary to encourage more people to use public transportation (Karki & Bahadur, 2019; Devkota et al., 2021b). The Kathmandu valley's public transportation system needs to be improved, and this requires both good regional strategy and

high-quality service. Along with congestion, other issues with the public transportation system now include overcrowding, protracted wait times, lengthy and irregular travel distances, and subpar and unreliable services.

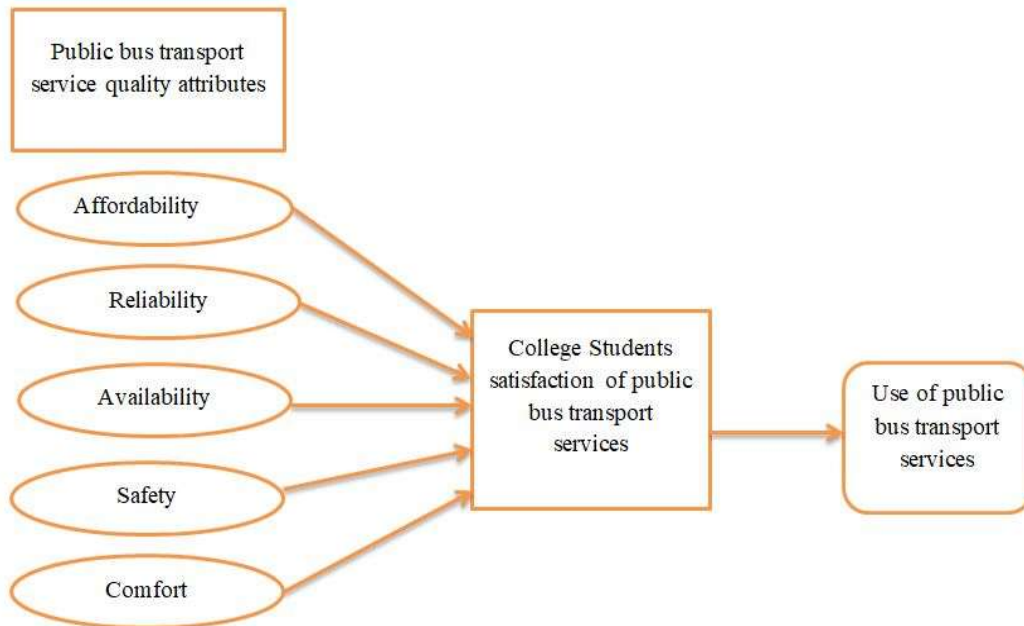
Being the host of more than 4 million population, the quality of public transportation is always questionable. Its quality is can be figured out through different variables such as, cost of it, safety, comfort, reliability, security, condition of vehicles and roads, level of professionalism of crew etc. College students uses public transportation in their daily commute to college; they are well aware of the facilities provided by public transportation, and can respond the attributes, in the best way, related to its quality. Thus this research concerns the view of college student from management stream regarding the quality of public transportation in Kathmandu valley.

1.1 Theoretical Framework and Hypothesis

A theoretical framework can be defined as a system that guides research by relying on the formal theory established by utilizing an existing, unified account of specific events and relationships (Grant, 2014). This study has examined five different theories. The first theory is the Theory of Planned Behavior, developed by Icek Azjen in 1991 (Kan et. al., 2017). According to Kan et. al. (2017), this theory states that the behavior of an individual can be determined by their intention to perform that behavior. Another theory is Consumer Satisfaction which states that customer satisfaction depends on the perceived value of a product or service, which in turn depends on two factors: perceived quality and customer expectation (Yüksel & Yüksel, 2008). The third theory is Consumer Behavior Theory, which explains how attitudes, subjective norms, anticipated emotions (positive and negative), perceived behavioral control, and past behavior shape the desire of individuals, which further shape intention and then actual action when selecting, using, and evaluating products or services (Jisana, 2014; Saeed, 2019). The fourth theory is Social Exchange Theory. This theory explains that social interactions are based on perceived benefits and costs of an individual, where they want to minimize costs and maximize benefits in their exchanges (Shiau & Meiling, 2012).

The final theory is Service Quality Theory (SERVQUAL). This theory states that service quality is the difference between the level of service that consumers expect to be provided and the perception of actual service provided (Daniel & Berinyuy, 2010; Shi & Shang, 2020). SERVQUAL is a widely used theory to analyze customer satisfaction, especially in the service sector (Shi & Shang, 2020). Since public transportation is a service-oriented sector, this model is the best fit to investigate management students' satisfaction towards bus transport services. The SERVQUAL provides a comprehensive framework that uses five dimensions: tangibles, reliability, responsiveness, assurance, and empathy, to check what shapes how happy commuters are, including things like bus cleanliness, on-time performance, driver attitude, security, and personalized attention (Mahatma et al., 2020; Valenzo-Jiménez et. al., 2019). Therefore, this study is based on SERVQUAL theory to identify specific service gaps that affect management students' satisfaction. The relationship explained by this theory is shown in Figure 1.

Figure 1: Conceptual Framework



Source: Adapted from Atombo and Dzigbordi Wemegah, (2021)

1.1.1 Affordability and Satisfaction

According to Lanka (2019), the selection of transportation by students is influenced by affordability, which refers to the ability of students to spend on travel. This is due to the fact that students are financially unstable, thus they have to remain within the budget (Valenzo-Jiménez et al., 2019). The study from Atombo and Dzigbordi Wemegah (2021) found that public transportation can attract new customers easily by just lowering the price of the tickets. This is because reducing ticket prices makes public transportation more affordable (Mahatma et al., 2020). Additionally, most of the students find public transportation a necessity rather than a luxury. Therefore, it requires them to spend less on transportation, as noted by Sinha et al. (2020).

H1: Affordability is positively related to Management student satisfaction of public bus transport service.

1.1.2 Reliability and Satisfaction

Reliability is another factor that affects the satisfaction of customers. Reliability is the process of providing services correctly and consistently (Mahatma et al., 2020). Reliability, in the case of public transportation, is based on timely arrivals, consistent operation, and schedule adherence (Cahigas et al., 2022). However, if public transportation fails to provide a reliable service, customers get frustrated and shift to another means of transportation (Borhan et al., 2019). Therefore, the study of Horshu (2015) highlights that to attract and retain students, better scheduling, communication, and service consistency should be maintained.

H2: Reliability is positively significant to the management student satisfaction towards public bus transport services.

1.1.3 Availability and Satisfaction

The term "availability" refers to the existence of transport infrastructure at a reasonable distance of the origin and destination. Path, coverage, and the number of amenities at bus stops all serve as indicators of availability (Cao, 2022). Many studies have found that student

satisfaction is influenced by the availability of public transit. According to Malaysia's Public Transport Roadmap, the most significant features of an excellent public transport system are dependability and travel time, comfort and convenience, accessibility, interconnection, availability, and capacity (Noor et al., 2014).

H3: Availability is positively related to management student satisfaction of public bus transport service.

1.1.4 Safety and Satisfaction

The problem of safety reflects the level of effort made to prevent accidents and juvenile misbehavior while riding (Jou et al., 2023). The degree of services given in accordance to commuter expectations is a significant factor in determining "safety" (Jou et al., 2023). Safety has a direct impact on the viability of public transport and the mode of transport chosen (Sukhov et al., 2021). As a result, safety is an important consideration that can have an immediate impact on student satisfaction.

H4: Safety is positively related to Management student satisfaction of public bus transport service.

1.1.5 Comfort and Satisfaction

According to Ingvardson and Nielsen (2019), comfort is a crucial factor that students consider when choosing a mode of transportation. For example, having soft seats, having few passengers, a smooth ride, and a clean interior are all indicators of comfort for passengers (Jou et al., 2023). Additionally, frequent public transport users are concerned about overloading during peak hours (Ingvardson & Nielsen, 2019). As per Esmailpour et al. (2022), clean buses generate a positive public image reflecting more comfort, thereby helping to recruit and maintain ridership.

H5: Comfort is positively related to management student satisfaction of public bus transport service

1.1.6 Satisfaction and Actual Usage

The satisfaction of people riding buses often shows how good the service feels to those actually using it. Satisfaction is measured by passengers' expectations and how effectively the transportation service actually meets those expectations (Ingvardson & Nielsen, 2019). Thus, improving the quality of public transport services can lead to an increase in student satisfaction and more frequent usage. However, the essential issue for improving the bus system's durability is consumption, which has not been considered in previous studies (Ghotbabadi et al., 2015).

H6: Satisfaction is positively related to usage of public bus transport.

1.1.7 Variables and its Definition

This section covers the variable used in this study. The study variables have been identified and explained in Table 1.

Table 1: Variables Table

Construct	Variable ID	Definition	Explanation	References
Affordability	Aff1	Cost of bus fare	Cost of bus fare is reasonable	(Atombo & Dzigbordi Wemegah, 2021)

	Aff2*	Fare is valuable in terms of time and distance	The bus fare is valuable in terms of both time and distance.	
	Aff3*	gives value to luggage and handling	Public bus gives value to luggage and handling.	
	Aff4	Provision for discount offer	Public bus will provide the discount offer for student, old age and disabled passengers.	
	Aff5	Economic	Public bus transport is economic for the students	
Reliability	Rel1	Arrival and departure time	The busses arrival and departure times are always reliable.	(Ponrahono et al., 2016)
	Rel2	reliable during peak hours	Public buses are reliable during peak hours.	
	Rel3	Bus speed	Bus speeds follow the law of the road.	
	Rel4	information	The adequacy of information about the vehicle is reliable.	
	Rel5*	never breaks down	bus never breaks down when traveling	
	Rel6*	frequent unnecessary stop	There is a frequent unnecessary stop at various junctions.	
Availability	Ava1*	Available in all cities	buses are available in all cities	(Abenzoza et al., 2017)
	Ava2	First aid	There is first aid available on bus	
	Ava3*	Disable Facility	Disable facility are available	
	Ava4	Waiting place	parking and waiting place facilities are available at stations	
	Ava5	Gap between two buses	The gaps in time between the two buses are consistent.	
	Ava6*	Bus frequency	The bus's frequency is appropriate	

Safety	Saf1*	safety precautions against crime	There are usually safety precautions against crime on public transportation.	(Chaisomboon et al., 2020)
	Saf2	obey the law	Drivers obey the law.	
	Saf3*	Significant accident damage.	Buses are rarely responsible for significant accident damage.	
	Saf4	luggage	Passenger luggage are safe	
	Saf5	clean and well-maintained	Buses are clean well maintained	
Comfort	Com1	Clean and spacious	buses' interiors are clean and spacious	(Echaniz et al., 2022)
	Com2*	congestion	There is not much congestion on buses.	
	Com3	Communication	Communication with staff is clear and helpful	
	Com4	Staff Behaviors	The bus staff treats the passenger with respect.	
	Com5	comfortable, clean seats	Buses have comfortable, clean seats.	
	Com6*	Convenience	Convenience of fare collection process	
Management student satisfaction	Sat1	Services	very satisfied with the services of the public bus transport	(Atombo & Dzigbordi Wemegah, 2021)
	Sat2	Comfortable	Public bus is comfortable to travel.	
	Sat3	travelling experience	Absolutely delighted with my overall travelling experience in a public bus.	
	Sat4	Secure	secure to travel in a public bus	
	Sat5	Reliability	very satisfied with the reliability of the bus service	
Usage of Public bus	Upb1*	Alone	Travelled alone.	
	Upb2	family and friends	Travelled with family and friends.	
	Upb3	Purpose	Going to college, work, shopping and social functions.	

	Upb4	Accessible	Public buses are easily accessible.	
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Note: * items were discarded during factor analysis as their factor loading is less than 0.5.

2. Research Methods

Research design refers to the overall plan and framework that guides the collection and analysis of data to achieve the study objectives systematically and efficiently (Abutabenjeh & Jaradat, 2018). This study employs a descriptive and explanatory research methodology (Rajbhandari et al., 2022), with the descriptive approach helping to explain management students' perspectives and satisfaction levels, and the explanatory design investigating the elements impacting their satisfaction with public bus transportation services. The next sections go into detail about the methodological procedures.

2.1 Study Area and Population

The study area for this study is Kathmandu Valley, which consists of three districts: Kathmandu, Lalitpur, and Bhaktapur (Shrestha et al., 2021). According to Shrestha et al. (2021), Kathmandu Valley is located at latitudes 27°32'13" and 27°49'10" north and longitudes 85°11'31" and 85°31'38" east, with an average elevation of 1,300 meters (4,265) above sea level. The justification for selecting Kathmandu Valley is that it is Nepal's higher education hub. Students from nearly all of Nepal's districts come to study here and must commute by public bus. This makes it an ideal location to assess management students' satisfaction with public bus transportation services. Additionally, Kathmandu Valley is home to around 3 million people from all over Nepal (National Census, 2021), therefore, the study population includes management students who attend college and use public buses.

2.2 Sampling Technique

Since the population is unknown, a non-probability sampling technique was employed. Among various non-probability sampling techniques, this study adopted convenience sampling in which respondents are selected based on their accessibility, availability, and willingness to participate (Taherdoost, 2018). In addition, the sample size was determined by using Cochran's formula: $n = (Z^2 * p * (1-p)) / e^2$ (Chaokromthong & Sintao, 2021; Lawaju et al., 2024; Magar et al., 2023). In this formula, n is the required sample size for the investigation, and Z is the standard tabular value for a 5% level of significance (=1.96). Similarly, p represents the proportion of management students who use public transit at 50% = 0.5, and q is calculated as 1-p= 1-0.5=0.5, with e representing the acceptable error of 5%. The total sample size for this study is: $n = (1.96^2 * 0.5 * (1-0.5)) / 0.05^2 = 384.16$. To account for 5% non-response error, multiply 384.16 by 0.05 to get 19.21, resulting in a total sample size of 403.36~403 (384.16 + 19.21).

2.3 Research Instrument, Data Collection and Data Analysis

This research used a structured questionnaire to gather primary data using a survey method. A structured questionnaire is a data collection tool that consists of preset questions provided in a fixed order to all respondents (Devkota et al., 2018). This study, thus, designed a structured questionnaire using the Kobo toolbox to conduct a survey and obtain primary data of management students using public buses in Kathmandu Valley. Additionally, a pilot test on 15 respondents was conducted to gather their comments. Accordingly, necessary adjustments were made before going to the research field. The collected data were analyzed using descriptive and inferential methods, which included Structural Equation Modeling based on multiple latent constructs in the inferential approach, whereas in descriptive analysis, different

charts, tables, and figures were managed. Data analysis was conducted using Smart PLS 4.0, while initial data entry was done using Microsoft Excel.

3. Results

3.1 Socio-Demographic Characteristics

Table 2: *Socio- Demographic Profile of Respondents*

Title	Category	Numbers	Percentage
Gender	Female	239	59.16
	Male	165	40.84
Age	20-25 years	179	44.31
	17-20 years	169	41.83
	25-30 years	43	10.64
	30 years above	13	3.22
Level of Education	Bachelors	320	79.21
	Masters	84	20.79
Affiliation	TU	324	80.2
	PU	56	13.68
	KU	17	4.21
	Purbanchal University	6	1.49
	Open university	1	0.25
Marital Status	Unmarried	367	90.84
	Married	35	8.66
	Others	2	0.5

Table 2 shows the socio-demographic characteristics of the respondents. In this study, a total of 404 students were surveyed to assess the management students' satisfaction with public buses. Among them, 59.16% were female students and 40.84% were male students. Further, majority of the students were of age 20-25 years (44.31%), bachelor's degree (79.21%), Tribhuvan University (80.2%), and unmarried (90.84%).

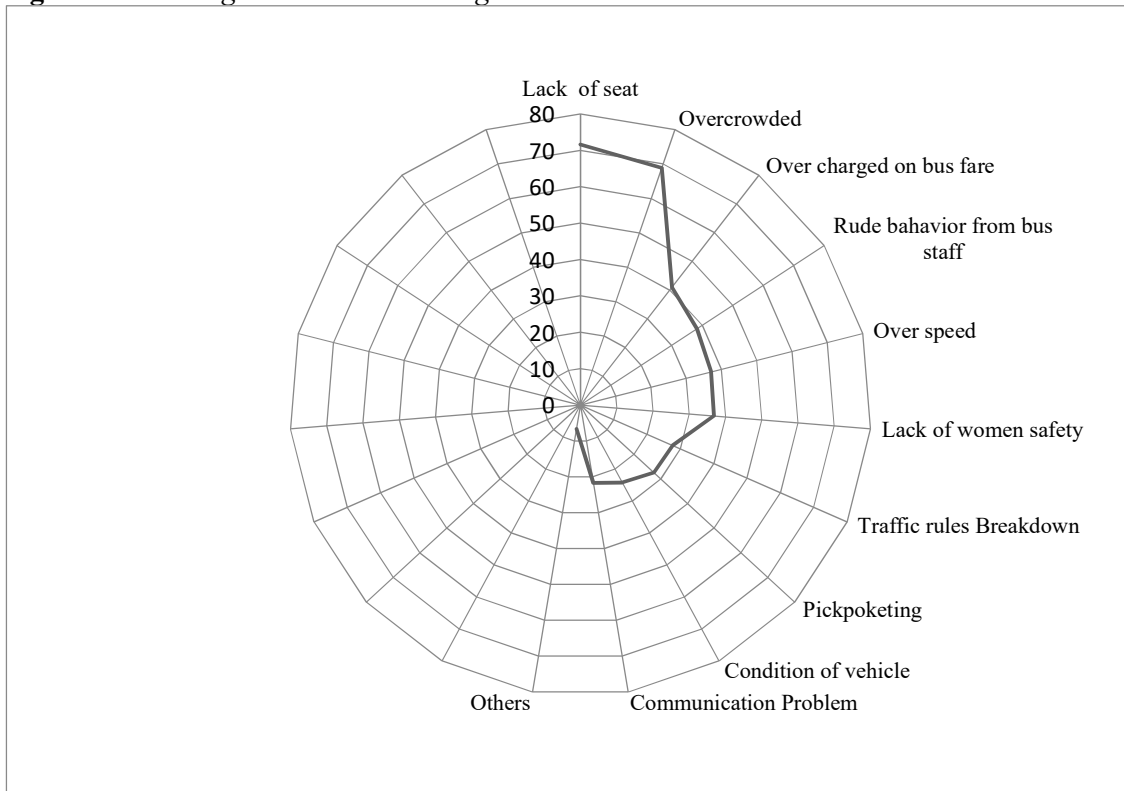
3.2 General Information regarding the use of Public Bus

The results reveal that all the management students surveyed in Kathmandu Valley uses public buses. Sajha Bus stands out as the top choice at 27.9%, while Nepal Yatayat comes next with 20.99%. Mahanagar Yatayat is close behind at 19.01%, with other providers accounting for 15.31% of usage. As per the respondents, 55.8% use these buses mostly to commute to class, 31.11% use them for personal purposes, 8.64% students use for other work, and 4.44% students use for office work. The study finds cost as an important driver. As many of the students responded that cheap tickets encourage them to take buses, a pattern similar to what Budiono discovered in 2009 when researching journeys related to jobs or school. Similarly, 26.91% of students are dissatisfied with the security element, 25.68% with the absence of scheduling considerations, 10.37% with other factors, and 9.14% with the lack of bus shade. Furthermore, this study finds that the majority of the respondents (62.47%) reported that long waiting is the major factor discouraging them from using the public bus. The waiting time for public buses at the bus stop shows that many students (70%) have to wait for 15 minutes on average, while only 1.48% of students had to wait for public buses for less than one minute. According to Karki and Bahadur (2019), people commonly avoid using public transit due to long wait times at stops. Similarly, 56.3% of students have reported misbehaviour by the driver and co-driver, while 33.09% of students experienced misbehavior at some point.

3.3 Challenges and Managerial Solutions

According to the findings, 97.7% of the students have faced problems while riding the public bus, and 2.22% students have never faced any problem. The challenges that the students have faced include: lack of seat (71.6%), overcrowding (68.89%), overcharging for bus fare (40.99%), rude behavior of co-drivers/drivers (38.27), overspeed (37.04%), lack of women's safety (36.79%), traffic rules breakdown (27.65%), pick pocketing (27.41%), vehicle condition (24.2%), communication problem (21.73%), and others (6.67%).

Figure 2: Challenges Faced while using Public Bus



According to the study, the majority of students (57.28%) believe that these problems can be solved, while 38.02% believe that they may be fixed, and the remaining students agree that they cannot. 70 students agreed that avoiding syndicates, overcrowding, and the use of electric vehicles could be key solutions to such problems. Similarly, 60 students agreed that implementing rigorous rules and regulations could be an alternative answer. Similarly, enabling GPS, an online payment system, and installing CCTV (9.9%), providing night service (9.9%), providing safety and security (8.66%), proper fare and schedule (7.43%), speed limit (7.43%), providing training for bus staff (6.25%), replacing old vehicles (5.9%), prioritizing eco-friendly and disabled-friendly vehicles (4.95%), making road infrastructure suitable (4.95%), and developing a scientific route permit system (2.48%) are all priorities. Furthermore, 80.49% of students believe the government is responsible for these solutions. Similarly, the bus committee, passengers, the corporation, and others are responsible for these solutions.

3.4 Inferential Analysis

Common Method Bias: A comprehensive collinearity test was used to assess common method bias. According to Kock (2015), the model is considered to be free of such bias when all of the VIFs tested remain below 3.3. The tested model in this study has a VIF below 3.3. Therefore,

it is reasonable to conclude that no significant common method bias exists in the data, and the data is suitable for further analysis.

Table 3: *VIF for Common Method Bias*

Satisfaction	Affordability	Availability	Comfort	Reliability	Safety	Usage of public bus
1.422	1.083	1.044	1.805	1.154	1.692	1.066

Measurement Model: The measurement model, sometimes referred to as the outer model, explains the relationship between items or indicators and construct or latent variables. Internal consistency, reliability, convergent validity, and discriminant validity are the three main tests that the researchers used to evaluate the measurement model in this study (Mia et al., 2022). Cronbach's Alpha (CA) and Composite Reliability (CR) are used to evaluate internal consistency. The data must demonstrate $CA > 0.6$ in order to demonstrate internal consistency (Mia et al., 2022). In a similar vein, CR levels between 0.6 and 0.7 are deemed "acceptable," while those between 0.7 and 0.9 are deemed "satisfactory to good" (Hajjar, 2018). However, values of 0.95 and above are troublesome because they suggest that the elements are redundant (Hajjar, 2018). The table provides the results of the CA and CR tests (Mahato et al., 2023). The test showed that all of the CA and CR requirements had been satisfied. As a result, the model used in this study demonstrates internal reliability and consistency.

Table 4: *Internal Consistency and Reliability*

Constructs	Cronbach's Alpha (CA)	Composite Reliability (CR)
Affordability	0.63	0.799
Availability	0.632	0.802
Comfort	0.754	0.844
Reliability	0.73	0.831
Safety	0.651	0.812
Satisfaction	0.792	0.857
Usage of Public Bus	0.589	0.777

3.5 Convergent Validity

Average Variance Extracted (AVE) and factor loading are examined for convergent validity. A factor loading of 0.7 or higher is acceptable, and a value of 0.4 is acceptable if the study is exploratory (Mohd Dzin & Lay, 2021). In the same way, for AVE, a value greater than 0.5 is acceptable (Lawaju et al., 2024; Mohd Dzin & Lay, 2021). All of the constructs in this study are acceptable because their AVE values are more than 0.5 (Mohd Dzin & Lay, 2021). In a similar vein, every item's outer loading is greater than 0.7, which is acceptable. However, outer factor values below the 0.7 threshold were eliminated. For instance, Aff2, Aff3, Rel5, Rel6, Ava1, Ava3, Ava6, Saf1, Saf3, Com2, Com6, and Upb1 were eliminated because their AVE values were less than 0.5.

Table 5: *Convergent Validity*

Construct	Item code	Loading	AVE
Affordability	aff1	0.733	0.574
	aff4	0.654	
	Aff5	0.870	
Availability	ava4	0.775	0.575

	ava5	0.783	
	ava6	0.715	
Comfort	Com1	0.790	0.576
	Com3	0.736	
	Com4	0.697	
	Com5	0.807	
Reliability	Rel1	0.785	0.551
	Rel2	0.721	
	Rel3	0.736	
	Rel4	0.725	
Safety	Saf2	0.725	0.59
	Saf4	0.805	
	Saf5	0.772	
Satisfaction	Sat1	0.774	0.546
	Sat2	0.774	
	Sat3	0.794	
	Sat4	0.668	

3.6 Discriminant Reliability

The Fornell and Larcker criterion and the Heterotrait-monotrait Ratio of Correlations (HTMT) criterion are used in this study to assess discriminant validity. According to Henseler et al. (2015), the Fornell and Larcker criterion determines if a latent construct has a stronger relationship with its own indicators than with other constructs in the model. This criterion is met in this investigation, as Table 6 illustrates. Similarly, the HTMT values should be < 0.85 , the stricter criterion and the more mild criterion is it should be ≤ 0.90 (Henseler et al., 2015). This study revealed that there are no discriminant issues because, as Table 7 illustrates, all of the HTMT values were below the more stringent criteria of < 0.90 .

Table 6: *Fornell and Larcker Criterion Test*

	Aff	Ava	Com	Rel	Saf	Sat	UPB
Aff	0.757						
Ava	0.234	0.758					
Com	0.135	0.354	0.759				
Rel	0.184	0.466	0.358	0.742			
Saf	0.174	0.427	0.629	0.448	0.768		
Sat	0.243	0.319	0.59	0.413	0.55	0.739	
UPB	0.362	0.229	0.06	0.134	0.002	0.15	0.734

Table 7: *HTMT*

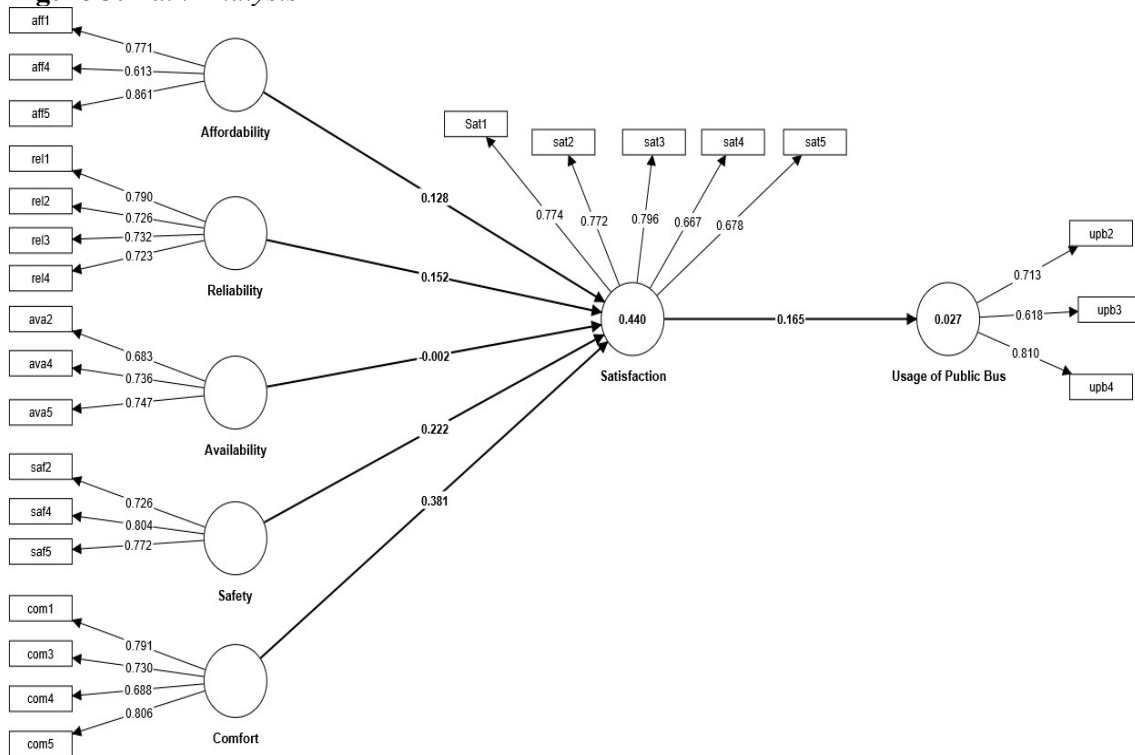
	Aff	Ava	Com	Rel	Saf	Sat	UPB
Aff							
Ava	0.364						
Com	0.198	0.504					
Rel	0.288	0.68	0.482				
Saf	0.259	0.666	0.881	0.656			
Sat	0.334	0.437	0.745	0.528	0.752		
UPB	0.55	0.339	0.159	0.184	0.143	0.21	

Model Fit: According to Mohd Dzin & Lay (2021), a model is considered fit for the data if the Standardized Root-Mean-Square Residual (SRMR) value is less than 0.08. Therefore, the model of this study is fit since it yielded a result of 0.078, which is below the 0.08 criteria.

3.7 Structural Model

In this study, the anticipated hypothesis was tested using the structural model assessment. The primary goal of structural model assessment is to demonstrate hypothesized connections between latent constructs, indicating the strength and direction of causal pathways between independent and dependent variables (B et al., 2023). In particular, path coefficients and coefficient of determination (R^2) are used to observe the relationship. According to Mohd Dzin & Lay (2021), R^2 should be more than 0.2 in order to guarantee model fitness. As shown in Figure 3, since the R^2 value of satisfaction in this study is 0.44, which is greater than the criterion, it can be accepted. This indicates that 44% of the variation in student satisfaction with public transportation can be explained by the independent variables of affordability, availability, comfort, reliability, and safety, with the remaining portion coming from other external factors. In a similar vein, the R^2 of actual public bus usage is 0.027, which is below the threshold but can be acceptable because it was only predicted by one variable, namely satisfaction.

Figure 3: Path Analysis



3.8 Hypothesis Test

Table 8: Hypothesis Test

Paths	Hypothesis	Beta	T Values	P Values	Confidence Interval		Status
					LL	UL	
Affordability -> Satisfaction	H1	0.127	3.55	0	0.06	0.201	Supported

Reliability Satisfaction	->	H2	0.154	3.247	0.001	0.061	0.246	Supported
Availability Satisfaction	->	H3	0.001	0.018	0.986	-0.094	0.102	Not supported
Safety Satisfaction	->	H4	0.22	4.103	0	0.11	0.319	Supported
Comfort Satisfaction	->	H5	0.379	8.254	0	0.029	0.469	Supported
Satisfaction UPB	->	H6	0.17	3.003	0.003	0.088	0.281	Supported

The hypothesis testing at the 5% significance level is displayed in Table 8. All hypotheses (H1, H2, H4, H5, and H6) were supported, as their p-values were below 0.05 and their beta coefficients fell within the confidence intervals. These results indicate a strong positive relationship between the independent variables (Affordability, Comfort, Reliability, and Safety), the mediating variable (Satisfaction), and the dependent variable (Use of Public Bus). However, H3 was not supported, as its p-value exceeded 0.05. This indicates a weak relationship between Availability and Satisfaction, providing strong evidence in favor of the null hypothesis.

4. Discussion

This study examined the factors influencing management students' satisfaction with public bus transport services in the Kathmandu Valley, focusing on seven key variables: affordability, availability, comfort, reliability, safety, overall student satisfaction, and usage of public buses. The results indicate that affordability has a positive and significant impact on student satisfaction (Standardized $\beta = 0.127$, $P < 0.1$), supporting H1. This finding aligns with Atombo and Dzigbordi Wemegah (2021), who noted that affordability is a crucial determinant of public transport usage, as it is often the most economical means of road transport for passengers.

Similarly, reliability was found to positively influence satisfaction (Standardized $\beta = 0.154$, $P < 0.001$), supporting H2. This indicates that students value consistent and dependable bus services (Cahigas et al., 2022). Also, safety significantly affected satisfaction (Standardized $\beta = 0.22$, $P < 0$), validating H4, emphasizing the importance of secure travel conditions in enhancing commuter satisfaction. Likewise, comfort emerged as a strong predictor of satisfaction (Standardized $\beta = 0.379$, $P < 0$), confirming H5. This is consistent with Ingvardson and Nielsen (2019), who highlighted that comfort and safety are essential factors shaping passengers' perceptions of travel satisfaction. These results collectively suggest that students' satisfaction with public bus services is multidimensional, influenced by both practical considerations such as affordability and reliability, as well as experiential factors like comfort and safety.

In contrast, availability did not have a significant impact on student satisfaction (Standardized $\beta = 0.001$, $P > 0.1$), leading to the rejection of H3. This could be attributed to the limited frequency and coverage of bus services in Kathmandu Valley, which may prevent students from perceiving availability as a reliable or influential factor in their satisfaction. Finally, the study found that overall management student satisfaction positively and significantly affects the usage of public buses (Standardized $\beta = 0.17$, $P < 0.003$), supporting H6. This indicates that higher satisfaction levels encourage repeated and sustained use of public transport. These findings highlight the critical role of enhancing service quality across multiple dimensions to improve commuter experiences and promote public transportation usage among students. Therefore, policymakers and transport authorities can address key satisfaction drivers

and foster increased engagement with public bus services among students in the Kathmandu Valley by focusing on affordability, comfort, reliability, and safety.

5. Conclusion

This study concludes that management students' satisfaction with public bus services in the Kathmandu Valley is significantly influenced by affordability, comfort, reliability, and safety, whereas availability does not demonstrate a statistically significant effect. The findings indicate that students primarily utilize public buses due to cost-effectiveness, with the majority traveling to colleges via Sajha buses, followed by Nepal Yatayat. Despite this, students encounter multiple challenges, including long waiting times, overcrowding, unsafe conditions, and inappropriate behavior by drivers or co-drivers. The positive relationship between overall satisfaction and bus usage underscores the importance of enhancing service quality to increase the attractiveness and utilization of public transportation among students. These results emphasize the multidimensional nature of commuter satisfaction, reflecting both practical considerations and experiential factors.

The study offers several managerial and policy implications for government authorities, bus committees, and traffic regulators. Improvements in affordability, comfort, reliability, and safety can strengthen passenger perceptions and promote sustained use of public transport. Furthermore, the enforcement of traffic regulations, implementation of speed limits, promotion of disabled-friendly vehicles, and measures to ensure women's safety are essential to enhance service quality. Future research should expand the scope beyond management students to include passengers of varying age groups and professional backgrounds and examine additional service quality dimensions such as pricing strategies, information availability, and accessibility. Such efforts will provide a more comprehensive understanding of public transport usage, supporting sustainable transportation planning and policy development in Kathmandu and comparable urban contexts.

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