



ORIGINAL CONTRIBUTION

An Evaluation of Passenger Satisfaction with the Bus Rapid Transit (BRT) System as a Public Transportation Mode

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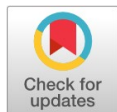
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Abstract— Urban overpopulation has been a major transportation problem in big cities such as Amman, the capital of Jordan, with an estimated population of about 4.9 million and serious infrastructure problems. In 2019, Jordan introduced an Amman Bus Rapid Transit (BRT) system to make public transport more efficient and accessible. The aim of this study is to examine the impacts of the various elements of the service marketing mix including service quality, pricing strategies, promotional tactics, distribution routes, employee competence, service process efficiency, and the physical environment on the passenger satisfaction with the BRT system. Data were collected from 301 passengers through a structured questionnaire. The data were analyzed thoroughly by using simple and multiple regression techniques in the Statistical Package for the Social Sciences (SPSS). The results indicate that passengers have a positive relationship with the various elements of the marketing mix, where each of them has a significant effect on passenger satisfaction with the BRT system. According to the study findings, management should focus on improving the elements of the marketing mix that increase passenger satisfaction more effectively. It further recommends conducting periodic surveys to obtain continuous feedback to facilitate timely and well-informed improvements to the Amman BRT system.

Index Terms— Service quality, Price, Promotion, Distribution, Employee, Process, Physical environment

Received: 2 April 2026; **Accepted:** 12 June 2026; **Published:** 7 July 2026



Introduction

Marketing is essential to the success of any organization, especially in the face of increasing competition (Haikal et al., 2020). Effective strategies for sustainable satisfaction are based on an understanding of customers' needs (Mogaji, 2025). This is especially true for rapid bus transport systems, where the marketing mix of product, price, promotion, and service delivery plays a strong role in the passenger experience (Huldt Navarro & Haag, 2024; Rua & Santos, 2022). The marketing strategies of organizations have to be changed constantly so as to cater to the varied needs of customers across the marketing mix. Therefore, it is important to align services offered with customer expectations by providing reasonable prices, promoting advantages appropriately, and delivering effective services (Abuomman & Alshdaifat, 2026). These aspects need to be improved, as this will increase customer satisfaction, which is very important for the future success and expansion of public transport systems.

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The rapid bus system has become a key part of city transportation and has developed considerably since Bus Rapid Transit (BRT) started in Brazil in the 1970s (Lindau et al., 2010). The system provides a faster, more comfortable service at a lower cost than conventional public transport, with capacity similar to that of metro systems (Cervero & Dai, 2014; Mehmood et al., 2024). Jordan's BRT system avoids traffic in a few ways: dedicated bus lanes allow for faster travel; traffic signals are altered to allow buses to move faster and more predictably; and fares are collected in advance so that bus stops are fast and efficient. It also uses different types of buses to fulfill different needs and to ease boarding. Well-designed, covered stops, with clear signage and real-time information, make traveling safer and more convenient. These features are a good foundation for the study of passenger satisfaction. The use of clean technologies reflects the Amman BRT's commitment to environmental protection and makes it a model of efficient, safe, and environmentally friendly public transportation.

Over the last three decades, the population of Amman has grown to over 4.92 million people within an area of more than 800 km². This accounts for 42% of the total population of Jordan, which is 11.73 million people (Department of Statistics, 2026). This is a stark contrast to the transport infrastructure of the city, which is struggling to keep up. Amman's Bus Rapid Transit (BRT) has many challenges, such as volatile prices, a high rate of accidents, and old infrastructure compared to cities that have successfully integrated modern public transport systems (Alnsour, 2023). The city began its first mass transit project in 2019, and it became operational in 2021, but the lack of complete financial transparency clouds the project's viability and ability to fund future expansion. The financial estimates available show that the first phase of the project costs about \$120 million, and the total expected cost for the second phase is around \$400 million (Arab Urban Development Institute, 2023). Hence, it is essential for Amman to adopt a strategic approach concerning urban planning for the enhancement of its transit system and to respond to the needs of its increasingly mobile population in an effective way.

This study is important because of its focus on an innovative transportation mode (BRT) that was launched in Jordan and the Arab region. Moreover, this research investigates, for the first time, the importance of the use of the marketing mix elements to evaluate the BRT services for Jordanian passengers. The study evaluates the marketing factors and their effect on customer attitude to improve service satisfaction. This study fills a gap in the literature by examining the combined effects of these marketing elements on passenger satisfaction in Amman's BRT system. While previous research has frequently concentrated on individual marketing elements, as highlighted in the literature review, this study adopts a different approach by integrating all marketing elements into a cohesive model for analysis. Moreover, to our knowledge, no previous study has analyzed the impact of marketing elements on customer satisfaction in the field of BRT as a public transportation mode. In this study, all concepts are well defined and tested and give a full picture of the effect of each element on satisfaction in Amman's transit system. The findings emphasize the importance of marketing strategies to transit decision-makers and to help position the Amman BRT in the broader international public transport discussion. The findings serve as a basis for future research, connecting theory and practice, and reviewing and recognizing the need to change marketing strategies as passenger demand changes repeatedly. This study will enhance our understanding of marketing factors affecting passenger satisfaction and will provide new practical insights and recommendations to BRT authorities to improve passenger satisfaction and public transport systems. In light of the background, the study formulates the following questions:

1. To what extent do the marketing elements impact passenger satisfaction with the BRT services?
2. To what extent does each marketing element impact passenger satisfaction with the BRT services?

Moreover, the study aims to achieve the following objectives, including:

1. To identify the impact of the marketing elements on passenger satisfaction with the BRT services.
2. To identify the impact of each marketing element on passenger satisfaction with the BRT services.

Literature Review and Hypothesis Development

The competitive transportation business requires the use of innovative and realistic marketing techniques for firms to meet the expectations of passengers. Effective marketing campaigns that respond to individual wants and preferences of passengers create solid relationships with passengers and improve the whole travel experience (Chin et al., 2019). The marketing mix here is composed of product, price, distribution, promotion, people, process, and physical environment.

Transportation service (service quality)

Service quality is a very important element of the marketing mix in transportation services, since it enables customers to make informed and strategic decisions. The movement of people is regulated by transportation providers, with a focus on safety and efficiency (Vuchic, 2017). The fast bus system should be reliable and on time, bringing benefits without regarding ownership of vehicles and without unifying physical assets with intangible attributes (Mikulić et al., 2024). Transportation providers need to brand their services and make them attractive to meet the expectations of customers (Ali et al., 2021). Schedules and travel times are required to be convenient for passengers. Furthermore, public transit has to distinguish between core and ancillary services that can add value to the core product and can be integrated into marketing strategies. Abenoza et al. (2017), Eboli et al. (2018), and Alkharabsheh et al. (2019) have stated that the fast bus service aims to offer comfort and punctuality with continuous efforts to improve its service.

H1.1: There is a statistically significant effect of transportation service on passenger satisfaction.

Transportation price (fare)

When pricing services such as the Amman Rapid Bus, the main issues are the balance between costs, competition, and profitability. Hence, pricing is associated with passenger perceptions, available alternatives, perceived value of the service, and passengers' willingness to pay (Hashem et al., 2024; Jou et al., 2021). According to Zheng et al. (2021), Oliveira et al. (2022), and Aburomman and Alshdaifat (2026), price affordability is one of the main factors that influence passengers' satisfaction; thus, BRT prices should be offered at reasonable and attractive levels. The BRT mode is more attractive than other transport modes when it is offered at competitive prices and with a variety of payment methods. Moreover, Herrmann et al. (2007) reported that several studies have identified perceived price fairness as a direct antecedent of consumer satisfaction. The satisfaction level with the ticket price and travel time considerably influences the use of urban public transportation, according to the research by Minelgaité et al. (2020) and Ahmed et al. (2023).

H1.2: There is a statistically significant effect of pricing on passenger satisfaction.

Transportation distribution (routes)

Improving bus departure and arrival timetables considerably increases the passenger experience by lowering wait times and giving real-time information (Shtayat et al., 2019). It is important to install payment card sales terminals inside and outside of stations and to introduce electronic payment methods to help traveling passengers. The Rapid Bus concept is focused on efficient transit through strategically placed stops with real-time tracking and digital facilities at bus stations. Better services can increase the level of satisfaction of customers with public transportation. Some of the distribution (route) factors that influence passenger experience and satisfaction are mentioned by Hussain and Sullivan Mort (2025), Al-haj et al. (2024) and Elmi et al. (2023). These include the accuracy of the timetable, the position of the stop, journey time, quality of waiting facilities, and the frequency of the bus service. However, the interaction between these elements can produce benefits in terms of quality of service, greater confidence in public transportation, and improved satisfaction (Hasan et al., 2021; Mugion et al., 2018).

H1.3: There is a statistically significant effect of distribution on passenger satisfaction.

Transportation promotion (communications)

Bus Rapid Transit (BRT) is not only about designing bus routes, but it is also about a dedicated team working to guarantee the reliability and the fluidity of the service. BRT personnel should be courteous, considerate, competent, safety-conscious, and effective in dealing with passengers. Furthermore, BRT personnel are critical for the effectiveness of bus rapid transit systems (Alghizzawi et al., 2024; Uzoamaka et al., 2015). Additionally, a culture of accountability and creativity would improve the quality of service and the responsiveness to the needs of the passengers (Al-haj et al., 2024). Skilled drivers also consider the safety of their passengers and timely arrivals. Ticketing counter staff should improve procedures to enhance passengers' sense of worth (Cordera et al., 2024). Effectively monitoring short-term outcomes and long-term sustainability is important to achieve BRT objectives and meet community needs (Al-Qudah et al., 2020; Asata et al., 2020). Mahmoudi et al. (2010) and Etuk et al. (2021) stated in their studies that the behavior of passengers and driver competence affect the safety and satisfaction of the passengers.

H1.4: There is a statistically significant effect of promotion on passenger satisfaction.

Employees (interaction with staff and passengers)

Bus Rapid Transit (BRT) is not only about designing bus routes, but it is also about a dedicated team working to guarantee the reliability and the fluidity of the service. BRT personnel are expected to play a very important role in the effectiveness of bus rapid transit systems (Uzoamaka et al., 2015). Employees are expected to exhibit certain characteristics. These characteristics include courtesy, responsiveness, competence, safety, and the ability to interact with passengers effectively. Additionally, a culture of accountability and creativity would improve the quality of service and the responsiveness to the needs of the passengers (Al-haj et al., 2024). Skilled drivers also consider the safety of their passengers and timely arrivals. Ticketing counter staff should improve procedures to enhance passengers' sense of worth (Cordera et al., 2024). Effectively monitoring short-term outcomes and long-term sustainability is important to achieve BRT objectives and meet community needs (Alghizzawi et al., 2024; Al-Qudah et al., 2020; Asata et al., 2020). Mahmoudi et al. (2010) and Etuk et al. (2021) in their studies, stated that the behavior of passengers and driver competence affect the safety and satisfaction of the passengers.

H1.5: The employees have a statistically significant effect on passenger satisfaction.

Process (Procedure)

Bus Rapid Transit (BRT) is a significant mode of transportation since it is passenger-oriented and provides safe, efficient, and simple travel experiences (Altarifi et al., 2023). Key features of BRT include efficiency in performing ticketing operations, monitoring passenger flow, and scheduling responsibilities (Petrie & Bevan, 2009). Open operating procedures greatly improve safety and reliability over more traditional transit methods, eventually resulting in improved customer satisfaction. The digital cards, quick top-ups, and other conveniences for BRT passengers are a notch above the customer experience compared with some transit systems that may not be tech-savvy (Saw et al., 2020). Although most

transportation services provide limited updates, BRT systems that offer real-time information about schedules and services are more likely to foster greater passenger loyalty and trust. Albatayneh et al. (2024) mention that BRT is better than private cars due to its organized, punctual, and transparent services. These features indicate that BRT was designed not only for transportation but also to meet the different demands of modern travel.

H1.6: The process has a statistically significant impact on passenger satisfaction.

Physical environment (facilities and vehicles)

Bus Rapid Transit (BRT) systems have different facilities like Wi-Fi, climate control, live information displays, surveillance cameras, etc., to improve the comfort and safety of the passengers (Narayana et al., 2024). Bus terminals are designed to improve the comfort of employees and passengers, as demonstrated by De Oña et al. (2016). This is done by providing ergonomic work environments, proper lighting, ventilation, and proper safety measures. Also, the waiting areas should be clean and well maintained to ensure good conditions (Pawlasova, 2015). Previous studies on passenger satisfaction by Calvo and Ferrer (2018), Etuk et al. (2021), and Surbakti and Bakara (2020) identified areas for improvement. These include the condition, comfort, safety, security, and cleanliness of the vehicle. Moreover, Mehmood et al. (2024) highlighted the significance of appropriate infrastructure, parking facilities, and feeder routes to guarantee sustainable urban development and passenger satisfaction. They are equally important in deciding the level of passenger satisfaction with their travel experience.

H1.7: Physical environment has a statistically significant impact on passenger satisfaction.

Passenger satisfaction

Passenger satisfaction is defined as the extent to which public transport services meet or exceed passenger expectations, as reflected in their overall opinions (Narayana et al., 2024). Useful tools and insights are needed by the managers of the bus rapid transit system in Amman to improve their capacity to serve the needs of the passengers and increase their productivity. The need for the consistent assessment of the extent to which services meet expectations and the use of feedback to make improvements is gaining global attention (Eshaghi et al., 2024; Prakash, 2019). Transport companies have to make sure their passengers are happy because happy passengers are loyal passengers, and the service will be better as a result. Satisfaction of the passenger is important for long-term loyalty to public transportation and for improvement of the service. According to the research of De Oña et al. (2016), Hasan et al. (2021), Nadeem et al. (2021), Al-Ayyash and Abou-Zeid (2019), Li et al. (2022), Nguyen-Phuoc et al. (2020), Nikel et al. (2020), and Ali et al. (2021), passengers' satisfaction is the main factor and indicator of the effective operation of public transportation systems.

H1: Marketing mix elements have a statistically significant impact on passenger satisfaction.

Methodology

The subject is studied intensively by means of both descriptive and analytical methods. These methods complement each other well. The descriptive method gives a description of the present conditions and characteristics of the subjects. The analytical approach is helpful for analyzing relations between variables and possible indicators of passenger satisfaction.

Study model

The research aims to achieve its objectives by exploring the relationship between the independent variable, which is the marketing mix for the Amman bus rapid transit system, and the dependent variable, passenger satisfaction. To demonstrate this relationship, a specific model was developed. In this study, a specific model was developed to describe this relationship (Figure 1). This model shows the different components of the marketing mix that are likely to influence passenger satisfaction.

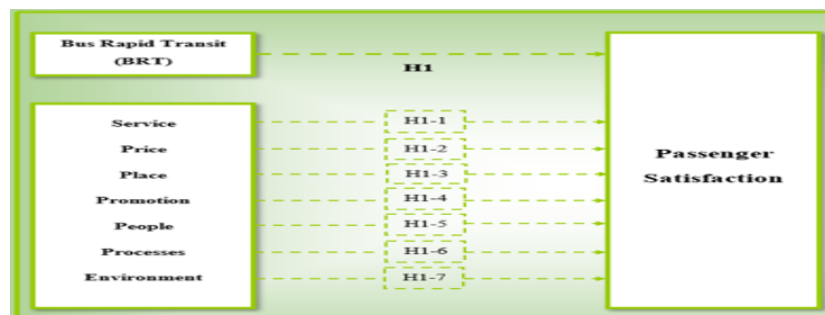


Fig. 1 Proposed model

Data collection

The research data were collected from the users of the Amman Bus Rapid Transit (BRT) system in Jordan through online and face-to-face surveys conducted between November 2025 and April 2026. The survey was voluntary and anonymous to ensure that the privacy of the respondents was respected. This study used purposive sampling to distribute the questionnaire only to BRT users. Data were collected at BRT stops across Greater Amman Governorate. The research obtained 312 questionnaires, of which 11 were not fully completed. Consequently, the valid questionnaires amounted to 301 (96.5%). The survey is divided into two sections: The initial section presents the contextual information; the subsequent section addresses the primary subjects of the research. The respondents provided their answers to these inquiries using a 5-point scale.

Statistical analysis

SPSS version 22 was used to test the hypotheses through regression techniques. Simple and multiple regression techniques were used because they are appropriate for determining the degree to which the independent variables (elements of the marketing mix) predict and are related to the dependent variable (passenger satisfaction). Descriptive statistics were calculated using counts and percentages to clearly describe the demographics of the sample and the distribution of responses. The research characterized the main response patterns by the mean and variance of the data. Cronbach's alpha was assessed to evaluate the reliability of the scales and the trustworthiness of the results. The skewness and kurtosis tests demonstrated that the data conformed to a normal distribution, as necessary for regression analysis. Also, VIF and tolerance were used to assess multicollinearity among variables.

Results

Sample characteristics

Table I shows the gender of the study group: 46.5% male and 53.5% female. The most common age group was 41-50 years (36.2% of participants). 30.9% were younger than 30 years old, 20.3% were between 30 and 40, and 12.6% were 51 or older. In education, 37.2% had a diploma, 35.9% were enrolled in or had completed university degrees, and 23.6% had a high school education or less. The group consisted of 30.2% students, 23.2% civil servants, 20.3% private sector workers, and 16.3% others.

Table I
Sample characteristics

	Characteristics	Frequency	Percent Cumulative	percent
Gender	Male	140	46.5%	46.5%
	Female	161	53.5%	100%
Age	Less than 30	93	30.9%	30.9%
	30-40	61	20.3%	51.2%
	41-50	109	36.2%	87.4%
	51 and more	38	12.6%	100%
Education	High secondary school	71	23.6%	23.6%
	Diploma	112	37.2%	60.8%
	Undergraduate	108	35.9%	96.7%
	Postgraduate	10	3.3%	100%
Occupation	Student	91	30.2%	30.2%
	Civil servant	70	23.2%	53.4%
	Private sector	61	20.3%	73.7%
	Self-employed	30	10.0%	83.7%
	Others	49	16.3%	100%

Descriptive statistics

Table II shows that the respondents have generally positive attitudes toward the services provided by BRT, as all variables scored above 3.00. Promotion obtained the highest mean score (3.948), which indicates that BRT promotional campaigns were positively received by users' perceptions. In contrast, distribution had the lowest score at 3.726, which implied that more routes were needed from the users' point of view. Respondents scored service quality at 3.803, with positive attitudes toward timeliness and comfort. Price was scored at 3.741, which means that the fares are fair and affordable. Users rated the processes at 3.827, signifying that those processes are easy and simple. Staff were rated as professional and helpful with a score of 3.874. The physical environment received a mean score of 3.801, with respondents mentioning the cleanliness and comfort of waiting rooms and stations. These results support the research questions and show that all elements of the marketing mix influence passenger perception. The results in general emphasize the importance of the service marketing mix elements.

Table II
Descriptive statistics, means, average means, and standard deviations of the variables

Variable	Statement	Mean	A. Mean	SD	Level
Service	BRT provides high-quality services.	3.785	3.803	0.603	High
	BRT services are comfortable.	3.812			
	BRT is characterized by punctuality.	3.837			
	BRT uses modern transportation buses.	3.801			
Prices	BRT prices are reasonable and fair.	3.823	3.741	0.458	High
	BRT prices are competitive.	3.805			
	Service prices correspond to the quality of the service.	3.659			
	Multiple payment channels are available.	3.793			
Distribution	The departure and arrival areas are convenient.	3.831	3.726	0.582	High
	Bus departure and arrival times are suitable.	3.656			
	The BRT's operating hours are convenient.	3.558			
	It helps reduce time and effort.	3.937			
Promotion	BRT conducts regular promotional campaigns.	3.903	3.948	0.715	High
	Modern communication methods are utilized.	4.027			
	Remote communication options are available.	4.082			
	Several Promotional campaigns are offered.	3.451			
Employees	Employees possess expertise and skills.	3.754	3.874	0.762	High
	Employees exhibit a sense of responsibility.	3.951			
	Employees are ready to provide services quickly.	3.857			
	Employees behave in a good manner.	3.743			
Processes	Procedures are characterized by speed and accuracy.	4.018	3.827	0.726	High
	Simplicity and ease define the procedures followed.	3.923			
	A queue is maintained during the reservation process.	3.822			
	Obtaining and filling out the card is marked by speed.	3.711			
Physical environment	The overall appearance matches the BRT's nature.	3.909	3.801	0.753	High
	The building and internal arrangements enhance services.	3.594			
	Comfortable waiting areas are available for passengers.	3.807			
	There is a strong emphasis on health and cleanliness.	3.964			
Satisfaction	I am satisfied with my choice to use the BRT.	3.707	3.809	0.629	High
	I am happy with the service provided by BRT.	3.772			
	The BRT services were as expected.	3.848			
	I will recommend that others use the BRT.	4.055			

Measurement models

Reliability was measured using Cronbach's alpha, and values above 0.70 were considered acceptable. As shown in Table 3, the Cronbach's alpha values varied from 0.791 to 0.908, exceeding the recommended threshold (Sekaran & Bougie, 2010). Normality was tested by analyzing of skewness and kurtosis, as shown in Table 3. The skewness values are between -0.252 and 0.037, and the kurtosis values are between -0.331 and 1.578. It was observed that the normality values were within the acceptable range as suggested by Hair Jr et al. (2019). Also, the VIF values were below 10, and the tolerance values were above 0.10, confirming the absence of multicollinearity among the variables according to the criteria set by Hair Jr et al. (2019).

Table III
Values of Cronbach's alpha, skewness, and kurtosis

Variables	Cronbach alpha	Skewness	Kurtosis	VIF	Tolerance
Service	0.875	-0.673	-0.331	1.811	0.458
Price	0.887	-0.835	-0.640	1.952	0.519
Distribution	0.862	-0.675	1.578	1.287	0.529
Promotion	0.874	-0.681	0.277	1.927	0.754
Process	0.906	-0.252	-1.079	2.627	0.397
Employee	0.908	0.037	-0.632	1.796	0.757
Physical environment	0.905	-0.331	0.486	2.673	0.648
Satisfaction	0.791	0.505	-1.80		Acceptable

Testing hypotheses

The study aims to explore the impact of different marketing elements on the satisfaction of passengers with Amman's bus rapid transit system. The study found that service quality, pricing, availability, advertising, employee performance, processes, and the physical environment all have an important impact on overall passenger satisfaction ($p < 0.05$).

Table IV shows a strong positive correlation ($R = 0.867$) between the marketing mix elements and passenger satisfaction. Moreover, the analysis revealed that the independent variables account for $R^2 = 0.770$ of the overall variance in the dependent variable, which means that 77% of the overall variance in passenger satisfaction was attributed to marketing mix elements, and the remaining 33% can be attributed to other elements that were not examined in this study. Using multiple regression, the results of the main hypothesis revealed a significant F -value of 135.609 with a p -value = 0.000. The results demonstrate that the elements of the marketing mix are significant relationship between variables, as the p -value is < 0.05 .

Table IV
The impact of the marketing mix elements of the bus rapid transit on passenger satisfaction

Dependent	R	R^2	F	Sig	Independent	β	T	Sig
Satisfaction	0.867	0.770	135.609	0.000	Service	0.235	4.270	0.000
					Price	0.210	4.309	0.000
					Distribution	0.18	3.203	0.000
					Promotion	0.209	3.210	0.000
					Procedures	0.110	4.119	0.000
					Employee	0.141	3.221	0.000
					Physical	0.353	5.276	0.000

Table V shows a strong correlation between bus rapid transit services and passenger satisfaction ($R = 0.721$). Moreover, empirical evidence demonstrated that the BRT services accounted for $R^2 = 0.526$ of the overall variance seen in passenger satisfaction. The regression analysis yields a β -value of 0.765 for the bus service. A t -value of 14.300 and a p -value = 0.000 also support these findings. In summary, the analysis shows that BRT services have a significant impact on passenger satisfaction.

Table V
The impact of BRT services on passenger satisfaction

Dependent	R	R^2	Std. Error	Independent	β	T	Sig
Satisfaction	0.721	0.526	.073	Service	0.765	14.300	0.000

Table VI shows that there is a positive correlation between price and passenger satisfaction ($R = 0.701$). Moreover, the result of $R^2 = 0.555$ demonstrated that the BRT prices accounted for 55.5% of the overall variance in passenger satisfaction. The coefficient analysis revealed that for the bus service, the β value is 0.609, the t -value is 14.519, and the significance level is 0.000, which supports the reliability of these findings. The results generally indicate that pricing policies can have a strong influence on passenger satisfaction with BRT transportation.

Table VI
The impact of prices (fares) on passenger satisfaction

Dependent	R	R^2	Std. Error	Independent	β	T	Sig
Satisfaction	0.701	0.555	.062	Price	0.609	14.519	0.000

Table VII shows a strong positive association ($R = 0.772$) between the distribution of bus rapid transit lines in Amman and passenger satisfaction. The routes explain of $R^2 = 0.651$ of the overall variance in passenger satisfaction. The β value = 0.623, T -value of 15.111, and significance level of 0.000 confirm this finding, which means that route distribution significantly impacts the experience of passengers of Amman's bus rapid transit system.

Table VII
The impact of the distribution (routes) on passenger satisfaction

Dependent	R	R^2	Std. Error	Independent	β	T	Sig
Satisfaction	0.772	0.651	.057	distribution	0.623	15.111	0.000

Table VIII shows a strong positive correlation ($R = 0.702$) and $R^2 = 0.621$, which accounts for 62.1% of the variation in passenger satisfaction. Moreover, the results of the unstandardized coefficients indicated that the impact of promotional activities is ($\beta = 0.662$), T -value = 14.732, and a significance level = 0.000 support this, showing that promotion has a strong effect on passenger satisfaction.

Table VIII
The impact of the promotion (communications) on passenger satisfaction

Dependent	<i>R</i>	<i>R</i> ²	Std. Error	Independent	<i>β</i>	<i>T</i>	Sig
Satisfaction	0.702	0.621	.048	Promotion	0.662	14.732	0.000

Table IX shows that $R = 0.719$ and $R^2 = 0.643$, indicating a strong positive correlation between employee performance in the bus rapid transit system in Amman and customer satisfaction. The result of the regression for employee performance is $\beta = 0.772$, with $T = 12.422$ and $p = 0.000$. These results revealed that staff performance has a significant effect on passenger satisfaction ($\alpha < 0.05$).

Table IX
The impact of employee performance on passenger satisfaction

Dependent	<i>R</i>	<i>R</i> ²	Std. Error	Independent	<i>β</i>	<i>T</i>	Sig
Satisfaction	0.719	0.643	.051	Employee	0.772	12.422	0.000

Table X shows a positive correlation between transportation processes and passenger satisfaction, with $R = 0.749$. Moreover, the result of $R^2 = 0.601$ demonstrated that the BRT processes accounted for 60.1% of the overall variance in passenger satisfaction. The analysis also shows that BRT procedures have a strong effect, with a regression coefficient (β) of 0.712. The T -value = 15.121, and the p -value = 0.000. These results show that processes positively impact passenger satisfaction.

Table X
The impact of the processes on passenger satisfaction

Dependent	<i>R</i>	<i>R</i> ²	Std. Error	Independent	<i>β</i>	<i>T</i>	Sig
Satisfaction	0.749	0.601	.063	Processes	0.712	15.121	0.000

Table XI examines the impact of the physical environment on passenger satisfaction in BRT services. The result of $R = 0.641$ shows a positive correlation between the physical environment and passenger satisfaction. Moreover, empirical evidence revealed that the physical environment accounted for $R^2 = 0.512$ of the overall variance seen in passenger satisfaction. Furthermore, the result of the regression coefficient for $\beta = 0.621$ indicates that the physical environment explains a significant portion of the difference in passenger satisfaction. The T -statistic = 13.232 and Sig. 0.000 demonstrate that the physical environment has a positive influence on passenger satisfaction in BRT services.

Table XI
The impact of the physical environment on passenger satisfaction

Dependent	<i>R</i>	<i>R</i> ²	Std. Error	Independent	<i>β</i>	<i>T</i>	Sig
Satisfaction	0.641	0.512	.075	Physical	0.621	13.232	0.000

Discussion

Jordan recently launched a major Bus Rapid Transit (BRT) project to help solve urban mobility issues caused by rapid urban growth. The project has been the subject of interest in the crowded city of Amman. The service continues to improve, and as its quality and convenience increase, so does customer satisfaction—an important component of the city's overall transit plan, which serves its diverse and lively population. There are well-defined designated bus lanes, separated from the rest of the traffic. The BRT system offers a faster, more efficient, and overall more pleasant experience for users, leading to greater satisfaction. The BRT system has considerably reduced the length of daily journeys and has greatly contributed to a significant increase in the overall satisfaction of users of public transport. Recent research has examined the effect of the BRT system on daily commuting patterns in Amman. The success of BRT in Amman is therefore not only a response to immediate transport needs but also a contribution to national and regional strategies for resilient, sustainable urban development, demonstrating how targeted public policy interventions can deliver far-reaching benefits for today's residents and generations to come.

The study results indicated that BRT users were satisfied with their total experience. Respondents said they were satisfied and delighted that the service's departure and arrival places should be carefully selected to improve system efficiency, and they were satisfied with the service, which usually exceeded their expectations on several counts. The positive rating was based on variables such as reliability of service, as evidenced by the punctuality of arrivals, regularity of timetables, and accessibility that made transfers between modes of transportation effortless. The fair prices were also appreciated by passengers, making the system affordable for a large number of users. Respondents also gave positive ratings of the quality of passenger service, reporting pleasant and supportive interactions with staff. The findings indicate that satisfied passengers are more likely to "spread the word" about the BRT service and have great potential for organic word-of-mouth advertising. Such positive affirmation enhances the reputation of the BRT and proves the need for effective engagement techniques to build user loyalty. The results show the importance of effectively managing the marketing mix to improve the passenger experience and develop a positive, strong image of the BRT

system in the competitive public transportation environment. Generally, the results are in line with the findings of many researchers such as De Oña et al. (2016), Nadeem et al. (2021), Hasan et al. (2021), Al-Ayyash and Abou-Zeid (2019), Li et al. (2022), Nikel et al. (2020), and Ali et al. (2021). The findings of these studies clearly show the significance of the critical marketing mix variables of service quality, pricing, promotion, and routes for the overall satisfaction of public transport users. The present study confirms previous findings and improves the understanding of user behavior.

The impact of service quality should be carefully considered to improve the system's efficiency and show the commitment to providing Bus Rapid Transit (BRT) to passenger satisfaction, which was studied in this research. The results show that BRT cares about the comfort and punctuality of its passengers. However, a further analysis of the overall impact of BRT on urban transport could make the findings more complete. For example, while modern buses enhance the experience of travel, the effectiveness of BRT systems is also shaped by factors like the quality of infrastructure, the integration with other modes of transport, and accessibility for diverse populations. To make a full evaluation, these dimensions should be considered so as to fully understand BRT's competitive advantage in public transport. The results concerning the ratio of satisfaction/quality are in agreement with previous studies like Mikulić et al. (2024), Abenozza et al. (2017), Eboli et al. (2018), and Alkharabsheh et al. (2019). This homogeneity reinforces the idea that careful planning is necessary to improve the system's effectiveness. "Transit systems need to be committed to quality if they want to satisfy their passengers."

The current research provides significant insights into the examination of the notion that price is a crucial factor influencing passenger satisfaction within the Bus Rapid Transit (BRT) system. The analysis shows that BRT's pricing strategy is reasonable, meets customer expectations, and is in line with the industry. This competitive pricing puts the BRT in a good position compared to other types of public transport services. It points to the value of the high-quality services. Moreover, the availability of alternative payment channels increases customer convenience and access to BRT services and makes it a more attractive option for riders. These findings are supported by Jou et al. (2021), Oliveira et al. (2022), Zheng et al. (2021), Aburomman and Alshdaifat (2026), Minelgaité et al. (2020), and Ahmed et al. (2023), who found that fare structures are important in the overall experience of passengers in the transportation system.

The results show that the route distribution of the BRT system has a significant effect on passenger satisfaction. The results show a high positive relationship between the elements analyzed and the relevance of managing the routes. The results highlight that BRT is more accessible compared to traditional public transport options, not just at the starting and ending points, but also through its convenient scheduling. In contrast to other services that may have limited hours, BRT's flexible service hours significantly reduce travel time and effort for riders. This flexibility makes the BRT more customer-friendly and attractive for passengers who want more efficient public transport. The results are in agreement with the findings of Elmi et al. (2023), Hasan et al. (2021) and Mugion et al. (2018), who showed that the distribution of routes influences the efficiency of public transport and the satisfaction of passengers.

The study assumes that promotional activities have a great impact on passenger satisfaction with the BRT system. The findings positively support the relationship between the effectiveness of these promotional techniques and the overall satisfaction of passengers. This alignment ensures the effective communication of BRT elements such as timetables, routes, rates, and special updates to the passengers. These communication systems provide immediate notification of service changes, real-time response to passenger queries, and remote access to route maps and schedule changes at any time. The BRT system has given a lot more opportunities to connect people than the traditional means of communication. These results are in line with the prior research of Işoraité et al. (2023), Aburomman and Alshdaifat (2026), Altarifi et al. (2023), and Calvo and Ferrer (2018) that emphasized the importance of effective promotion and communication activities in affecting passenger satisfaction and in establishing a positive public transport experience.

The findings of the study show that the performance and the attitude of the workers have a considerable impact on the satisfaction of passengers in the BRT system. The results indicate that there is a positive relationship between the characteristics of BRT workers and the satisfaction of passengers. According to the data analysis, BRT staff are well-experienced and skilled. This makes the service successful in general. Such professionals are responsible and devoted to their work, and they take care of the comfort and safety of passengers. This finding is consistent with the earlier studies of Cordera et al. (2024), Uzoamaka et al. (2015), Al-haj et al. (2024), Mahmoudi et al. (2010), and Etuk et al. (2021) that highlighted the need for well-trained and loyal employees to increase passengers' satisfaction in public transportation.

The hypothesis is that processes and procedures used in the BRT system are crucial in influencing the overall satisfaction of the passengers. The research results confirm the strength of the relationship between the procedural parameters and passenger satisfaction. The results indicate the high efficiency and accuracy of the processes performed along the BRT system, which improve the travel experience of the passengers. The reservation process itself is also surprisingly effective at managing queues. There is a better way to get a travel card so passengers can avoid long queues and get on their way. This is consistent with earlier studies by Altarifi et al. (2023), Saw et al. (2020) and Pereira et al. (2025), who observed that the user's satisfaction with public transport systems necessitates well-structured processes.

Results showed that the physical environment of the Bus Rapid Transit (BRT) system is suitable for its operation. Besides, BRT offers waiting areas for users to enhance comfort. However, continuous assessment is needed to ensure that the facilities can accommodate the changing needs of users. Furthermore, the health and hygiene stations as well as the clean buses are essential components of the BRT system, which directly contributes to the increased satisfaction of passengers. However, we must continuously evaluate these standards to enhance the overall passenger experience. This concern for the physical environment is supported by previous studies by Calvo and Ferrer (2018) and Mehmood et al. (2024) that emphasized the significance of the physical environment in improving BRT users' satisfaction.

Of all the transport options, the Bus Rapid Transit (BRT) system offers the best experience for users. It is more efficient and reliable than traditional public transportation, which leads to increased customer satisfaction. This improved service not only leads existing users to recommend BRT to others but also improves its image as a preferred mode of transportation. To make sure the system is in line with users' expectations and to keep the good path going, continuous enhancements and assessments are needed.

Practical implementation

Recent in-depth analyzes have provided useful insights and a comprehensive set of tailored recommendations has been developed, which are expected to considerably enhance the performance of the BRT system in the overall public transit system. The elements of the marketing mix, such as service quality, pricing strategies, promotional tactics, distribution route, expertise of employees, efficiency of service processes, and physical environment, are potent tools in effectively gauging and understanding customer satisfaction. To fully capitalize on these insights, the BRT administration should not just treat these marketing mix elements as routine operations but as integral components of a strategic effort to deliver exceptional value to customers. In addition, the administration must highlight the BRT system's distinct advantages and progressive improvements to stay competitive in the minds of users. This builds trust and creates a good relationship with passengers. Focusing on this can result in focused, worthwhile improvements in service delivery, ensuring that customer needs are the main concern. Also, the BRT administration should conduct regular and systematic customer satisfaction surveys. Such surveys are an important platform to get valuable feedback and insights directly from the passengers, thus giving the administration a chance to know about their experiences and expectations. Creating an inviting, responsive environment can be achieved through proactive administration in addressing customer needs. The most important measures to improve user satisfaction include fair and transparent pricing, extending service routes to better meet community requirements, and providing timely updates on service information. These measures are important to give users a smooth traveling experience. Lastly, maintaining communication with customers is crucial for establishing trust and fostering long-term relationships. The implementation of these strategies can greatly enhance the perception of the quality of the BRT system and thus offer a more satisfying and enjoyable experience to all passengers.

Limitation and future research

Despite the significant contribution of the present study to the literature on public transportation and Bus Rapid Transit (BRT) systems, it has some limitations that deserve attention. Statistical analysis revealed the adequacy of the sample size; however, it was relatively small as planned. Thus, future studies should increase the sample size to improve the reliability of the findings. The study was limited by the self-administered questionnaires, which may have been biased by the participants' views. In addition, the sample only included passengers using Bus Rapid Transit (BRT) and did not consider those who use alternative modes of transportation. Future studies should also involve a larger number of passengers using different modes of transport to allow for more extensive comparisons between modes that would increase the validity of the findings. The study highlights the distinctive features of the Bus Rapid Transit (BRT) system and warns against applying the findings to other transport modes, which might have different attributes. Future research should conduct comparative studies of different transportation modes to gain a more comprehensive understanding. The current focus is only on the marketing mix elements as independent variables; hence, future studies should be recommended to include additional variables to further enhance the transportation concept. Moreover, since the research was conducted in the setting of Jordan, it is recommended that caution should be taken when transferring the results to other contexts.

Conclusion

The paper examined the effects of different marketing mix elements on passenger satisfaction with the Amman Bus Rapid Transit (BRT) system. A survey with 301 Jordanian passengers was conducted to collect a wide range of views on BRT services. The results showed that there is a positive relationship between the marketing mix elements and the overall satisfaction of the passengers. The key factors identified were quality of service, pricing, communication, distribution, employee interaction, operational processes, and the physical environment of the transport system. The findings reveal that improvements are needed across all elements of the marketing mix to improve passenger satisfaction and reduce passenger churn. But the BRT system should be a real contributor to urban development, so the public transport managers and the urban planners should be competitive. This research contributes to the ongoing debate on service quality and user-led innovation in public transport by highlighting the necessity to react to changing needs of passengers. The findings provide several practical recommendations for future research. The most important recommendations are to conduct regular passenger satisfaction surveys and feedback systems, which give administrators important insight for service development and allow quick identification of emerging challenges or needs. Results also show the importance of fare and route reviews and adjustments on a periodic basis to ensure they are affordable and fair, which are important factors affecting the level of passenger satisfaction. Also, staff should be trained to improve the quality and consistency of care given to the passengers. Invest in digital technologies (real-time service updates, mobile applications) to keep passengers engaged and allow for effective communication. All passengers should be able to enjoy clean, safe, and pleasant stations and buses. These strategies aim to foster passenger loyalty, attract new users, and promote the sustainable development of public transport. It is vital to consider the passengers as key stakeholders and integrate their perspectives in the planning processes if the BRT system is to be sustainable in the long run.

Conflicts of interest

The authors declare no conflicts of interest.

Author contributions

All authors participated equally in this research.

Ethical approval

Participation in the research was voluntary and anonymous to protect the participants' privacy. The study was performed in accordance with the internationally accepted ethical standards, including the Declaration of Helsinki.

Informed consent

All participants read the questionnaire and agreed to participate in this study voluntarily.

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