

Efficiency and satisfaction of commuters in transport Service in Roxas City

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Abstract: This study aimed to assess the efficiency and satisfaction with public transportation for daily commuting in Roxas City, specifically seeking to determine the level of efficiency of transport service, the level of commuter satisfaction, the significant difference in commuter satisfaction across different efficiency levels, and the significant relationship between transport service efficiency and commuter satisfaction. The study followed a survey-correlational research design. Respondents were regular commuters in Roxas City using jeepneys, tricycles, and buses. With a total public transport population of approximately 3,059 units based on LTO data, the study obtained a sample size of 342 respondents using the Raosoft sample size calculator with a 95% confidence level and 5% margin of error. Convenience sampling was employed by approaching commuters at transport terminals and other public locations. Instruments used included researcher-made questionnaires: The Efficiency of Transport Service Questionnaire and the Satisfaction of Transport Service Questionnaire. The independent variable was transport service efficiency, and the dependent variable was commuter satisfaction. Statistical tools used were frequency and percentage for demographic profiles, mean and standard deviation for levels of efficiency and satisfaction, ANOVA to test significant differences, and Pearson correlation coefficient to determine the relationship between variables, with a significance level set at 0.05. The findings revealed that both the level of efficiency and satisfaction were rated as "High", there was a significant difference in commuter satisfaction across efficiency levels, and a significant relationship existed between efficiency and commuter satisfaction.

Keywords: Efficiency, Satisfaction, Transport Service

Date Submitted: June 5, 2025

Date Accepted: June 15, 2025

Date Published: June 30, 2025

INTRODUCTION

As Roxas City continues to grow in terms of population and business activities, the need for better, faster, and more reliable transportation also increases. Efficient transportation plays an important role in supporting economic progress, improving people's daily lives, protecting the environment, and making commuting more satisfying. To keep up with modern changes and growing needs, the government, local businesses, and the community needs to work together in creating a transport system that is both efficient and environmentally friendly.

Most of the public transportation in Roxas City is provided by privately owned vehicles such as tricycles, jeepneys, vans, and buses. These services are helpful but often face problems like poor scheduling, overcrowding, and lack of regulation. Recently, the local government and private companies introduced city buses and Grab taxis to help improve transport services for residents and tourists. CCTV cameras and traffic lights have also been installed to help manage traffic and improve safety.

The rapid growth of areas like Pueblo de Panay Township has increased the demand for good transportation. This new development now includes business process outsourcing (BPO) companies, hotels, schools, restaurants, a central transport terminal, and important government offices like the provincial capitol and city hall. With these changes, a better transport system is needed to meet the different needs of people working, living, and visiting the area.

Commuters in Roxas City are made up of different types of people. They include students who go to school every day, workers who travel to offices, malls, or construction sites, professionals such as teachers, nurses, and government employees, as well as small business owners, market vendors, and tourists. Some commuters travel short distances within their barangays, while others travel across the city or nearby towns. Their travel needs and expectations can vary depending on their income, daily routine, and access to transportation.

Even with recent improvements, public transport in the Philippines still faces many challenges. Fallaria and Ramos (2019) explained that poor transport policies and management are some of the main reasons for the problems commuters face. In places like Metro Manila, many commuters choose transport based on speed and convenience instead of cost—especially during rush hours. This shows that people care more about getting to their destination quickly and easily.

Transportation policies affect the daily travel of many people. They can influence a person's productivity, health, and overall experience. Traditional modes of transport like jeepneys, tricycles, and buses are common, but they often struggle with issues like overcrowding, poor service, and lack of maintenance. According to Mayo and Taboada (2020), public utility vehicles (PUVs) in the country do not perform well in terms of reliability, customer care, and quick response to passenger needs. Ong and Nadlifatin (2023) also found that cleanliness, safety, comfort, driver behavior, and route efficiency are among the key factors that affect how satisfied commuters are.

Today's commuters care about five main things in transport: cost, comfort, travel time, accessibility, and safety. People in Roxas City have different needs when it comes to transportation, depending on their income, mobility, and purpose of travel. Improving these five areas is important to achieve commuter satisfaction.

Cost is a major factor. Public transport is usually the cheapest option for many people. But if fares are too expensive, it can be difficult for low-income commuters to access basic services like work, school, or healthcare. Venter (2011) pointed out that people living in remote or poor areas often spend more on transport and face more financial pressure.

Comfort includes seating space, cleanliness, and the overall condition of the vehicle. Comfortable transport helps people travel more easily and enjoy their journey, which increases their willingness to use public transportation regularly.

Travel time is important in getting commuters to their destination on time. If the travel takes too long or is delayed, people may look for other faster options. Shorter and more predictable travel times make public transport more appealing and convenient.

Accessibility means having transport options that are easy to reach and available when needed. Mallillin and Carag (2020) said that transport systems must be available and accessible for people to make full use of them. Services should be frequent and cover enough areas to meet everyone's needs.

Safety involves the condition of the vehicle, the training of the driver, and the overall security of passengers. A safe transport system gives commuters peace of mind and builds trust. When people feel safe using public transport, they are more likely to use it often, which can help reduce traffic and improve city life.

To help make decisions about what factors matter most in transportation, Hart and Oyenuga (2020) introduced the Analytic Hierarchy Process (AHP), a tool that helps compare different needs. Based on this method, Mayo and Taboada (2020) found that no matter a commuter's age, gender, or income, safety is the top priority—followed by accessibility, cost,

and comfort. Even though traffic and prices are increasing, many still prefer private or for-hire vehicles because they seem safer and more reliable.

Improving the efficiency and satisfaction of commuters in Roxas City requires focusing on five main areas: cost, comfort, travel time, accessibility, and safety. While new programs and modern transport services have already begun, more efforts are needed to provide an affordable, safe, and efficient transport system. When these needs are met, people will be more satisfied, and the city will benefit from better mobility and a higher quality of life.

Problem statement

The purpose of this study was to assess the efficiency and satisfaction with public transportation for their daily commute in Roxas City.

Specifically, this study sought answers to the following questions:

1. What is the level of efficiency of transport service in Roxas City in Roxas City?
2. What is the level of satisfaction of commuters in transport service in Roxas City?
3. Is there a significant difference in commuters' satisfaction among the levels of efficiency of transport service in Roxas City.
4. Is there a significant relationship between efficiency and satisfaction of commuters in transport service in Roxas City.

METHODOLOGY

The study adopted a survey-correlational research design, which aimed not only to describe current commuting conditions but also to determine the relationship between two key variables: the efficiency of transport services and the satisfaction of commuters. This design was appropriate for identifying potential associations without manipulating any variables.

The respondents of this study were commuters in Roxas City who regularly use public transportation such as jeepneys, tricycles, and buses. Based on the data from the Land Transportation Office (LTO), the population of public transport units in Roxas City is approximately 3,059. Using the Raosoft sample size calculator with a 95% confidence level and 5% margin of error, the sample size obtained is 342 respondents.

The sampling was done using convenience sampling wherein commuters were approached at various public transport terminal, transportation stops, and other relevant locations within the Roxas City. The researcher distributed the survey questionnaires and requested participation in interviews to gather data.

The data were collected using a researcher-made Questionnaires: Efficiency of Transport Service Questionnaire, and Satisfaction of Transport Service Questionnaire

The independent variable (IV) in the study was transport service efficiency, while the dependent variable (DV) was commuter satisfaction. Both variables were assessed based on a set of observable and measurable indicators derived from relevant literature and prior studies.

In terms of analysis, the study employed appropriate statistical tools. Frequency and percentage were used to describe demographic data, while mean and standard deviation helped determine the levels of efficiency and satisfaction. To explore the relationship between the two variables, the Pearson correlation coefficient was utilized. In addition, Analysis of Variance (ANOVA) was used to determine whether there was a significant difference between levels of transport service efficiency and commuter satisfaction. 0.05 was used as the alpha level of significance.

Level of efficiency of transport service

The overall level of Efficiency of Transport Service in Roxas City has a mean score of 3.80 (SD = 0.50), which is described as “High”. The high level of transport efficiency in Roxas City, can be explained by the background and experiences of the respondents. Most of them were young adults aged 18–26, many of whom were students or unemployed. These groups likely travel at less busy times and may not face the same delays as workers during rush hours. Also, a large number of respondents use tricycles, which are easy to find and can bring passengers directly to their destination. This convenience likely influenced their positive view of transport efficiency. Since most respondents were male, who may be less bothered by delays or minor issues, this could have also contributed to the high rating. Overall, their age, travel habits, and choice of transport help explain why the results turned out this way.

A significant portion of respondents were young adults (58% aged 18–26) and students (46%), groups who are typically more adaptable and may have fewer time-sensitive commitments compared to older, employed individuals. According to Simanjuntak et al. (2022), students and younger commuters tend to perceive public transportation more favorably, particularly when it offers flexibility and accessibility—qualities tricycles provide. Tricycles were also the most utilized transport mode (60%) in the survey, indicating their key role in local mobility.

The availability, affordability, and short waiting times associated with tricycles likely played a major role in the high efficiency ratings. This is consistent with Gozun and Gozun (2020), who stated that commuters generally perceive a transport system to be efficient if it meets their daily needs with minimal delay and at a low cost. In addition, Aladejana et al. (2022) emphasized that user satisfaction with efficiency is closely tied to how accessible and reliable transport options are, especially in urban settings with limited high-capacity transport alternatives.

Furthermore, the geographical layout of Roxas City—a relatively compact urban area—makes it conducive for short-distance travel, where smaller vehicles like tricycles are effective. These factors, rooted in both the respondent profile and the transport environment, help explain why efficiency received a high rating without needing significant infrastructure or large-scale transit systems.

Level of satisfaction of commuters in transport service

The overall level of Satisfaction of Transport Service in Roxas City has a mean score of 3.84 (SD = 0.51), which is described as “High”. The high level of satisfaction with public transportation in Roxas City implies that most commuters find the system reliable, affordable, and accessible. This result likely stems from the city’s context as a small urban area with manageable traffic, familiar routes, and relatively short travel distances. The accessibility of transport points and low commuting costs meet the needs of residents, especially those with limited income or no access to private vehicles. Respondents may also feel a sense of comfort and safety due to regular exposure to familiar drivers, vehicles, and fellow passengers, which is common in closely knit communities. This familiarity helps reduce commuter anxiety and enhances perceived service quality.

Furthermore, the low standard deviation suggests that satisfaction levels are consistent across respondents, indicating a shared positive experience with the public transport system in Roxas City. Additionally, due to the simplicity of commuting in smaller cities like Roxas—fewer transfers, shorter waiting times, and less complexity in navigating the system—commuters likely experience less travel stress. This convenience contributes significantly to the positive perception of the public transport service.

These findings are aligned with the study of Rasca and Saeed (2022), which focused on small urban areas. They found that in cities like Roxas, mode choice is often based on practical concerns such as travel time and parking, highlighting how smaller cities can foster higher commuter satisfaction through simple and efficient transport services.

Choi and Kim (2021) emphasized that commuter satisfaction is influenced by various elements, including affordability, accessibility, vehicle cleanliness, and driver courtesy. These align with the conditions in Roxas City, where public transportation is cost-effective and relatively clean, and drivers are familiar to passengers.

Gaspar et al. (2024) noted that satisfaction levels among passengers with reduced mobility are generally lower, pointing to the importance of inclusive design. While this study identifies gaps in transport accessibility, the positive feedback in Roxas suggests that for the majority of users without such limitations, the services are meeting expectations.

Galvez, Katon, and Valdez (2025) also support these insights by emphasizing that service quality, travel duration, and cost efficiency are critical in determining commuter satisfaction. These factors were found to influence public utility bus users in Quezon City and are likely applicable to the Roxas context as well, especially where affordability and time efficiency are strengths.

Majumdar and Potoglou (2021) found that infrastructure conditions like safe stops and sidewalks greatly influence trip satisfaction. Roxas City's manageable traffic and relatively safe environments may explain why commuters there report high satisfaction despite it being a smaller city with less extensive infrastructure.

Lastly, Chen and Pesquiza (2023) observed how overall satisfaction decreased during the pandemic due to concerns over price, comfort, and efficiency. The current high satisfaction score in Roxas City may also reflect the gradual return to normal commuting conditions post-pandemic, improving public perception of service quality.

Difference between efficiency and satisfaction of commuters in transport service in Roxas City

The data Analysis of Variance ($F = 211.024$, $p = 0.000$) of Satisfaction with Public Transportation Among the Levels of Efficiency of Public Transportation in Roxas City indicates that there are statistically significant differences in the levels of satisfaction with public transportation among the different levels of transport efficiency in Roxas City. This suggests that how efficient a transport service is—whether in terms of reliability, speed, accessibility, or organization—directly influences how satisfied commuters feel with the service.

The implication is that commuters in Roxas City are sensitive to the quality and performance of transport services. Those who experience higher levels of efficiency (e.g., timely arrivals, shorter travel time, accessible routes, and fewer breakdowns) are more likely to report higher satisfaction. Conversely, users exposed to inefficient services express lower satisfaction. This differentiation may also be influenced by the daily routines and socio-economic status of

the commuters—those who rely heavily on public transport for work or school are more likely to perceive inefficiencies as major inconveniences.

Additionally, this result reflects the awareness and expectations of commuters in Roxas City. As transport efficiency improves or declines, so does the public's perception of service quality, highlighting the importance of maintaining and continuously improving service performance. The findings further suggest that transport service providers and local policymakers must consider efficiency not just as an operational metric but as a key determinant of user experience and satisfaction.

The findings support Galvez, Katon, and Valdez (2025), who emphasized that service quality, cost-efficiency, and travel duration significantly affect commuter satisfaction with public utility buses. This aligns with the significant variance found in Roxas City—demonstrating that changes in efficiency levels lead to observable changes in satisfaction.

Majumdar and Potoglou (2021) also provide a relevant perspective by asserting that satisfaction is strongly influenced by infrastructure conditions. Efficient systems with reliable stops and smooth routes create better commuting experiences, which mirrors the positive relationship between efficiency and satisfaction observed in the ANOVA results.

The importance of system reliability is also stressed by Mao and Dijst (2016), who argue that intelligent transport systems (ITS), which improve efficiency, directly enhance commuter satisfaction by reducing delays and increasing user control—an idea consistent with the statistical findings from Roxas City.

Choi and Kim (2021) reinforced the multidimensional nature of commuter satisfaction, showing that when factors such as efficiency, affordability, and access align, commuters are more satisfied and more likely to continue using public transport. This supports the observed statistical significance, implying that efficiency is a key component in that alignment.

In small urban centers like Roxas, Rasca and Saeed (2022) found that transport satisfaction is tied to practical concerns such as ease of use and availability. The present findings add to this by showing that these practical aspects—when efficiently delivered—translate into measurable satisfaction differences among users.

Lastly, Gaspar et al. (2024) emphasized that transport systems must cater to varying mobility needs to maintain satisfaction. Although their focus was on reduced mobility passengers, the broader takeaway is that a mismatch between efficiency levels and user expectations leads to dissatisfaction—highlighted by the significant differences shown in the ANOVA results.

Relationship between efficiency and satisfaction of commuters in transport service in Roxas City

The data of Pearson r Between Efficiency and Satisfaction of Commuters in Transport Service in Roxas City. The Pearson correlation coefficient ($r = 0.871$, $p = 0.000$) reveals a very strong and statistically significant positive association between the efficiency of transport services and commuter satisfaction in Roxas City.

The result of the Pearson correlation coefficient indicates a very strong and statistically significant positive relationship between transport service efficiency and commuter satisfaction in Roxas City. This implies that as the efficiency of public transportation increases, the satisfaction of commuters also increases considerably.

This strong correlation can be attributed to the daily experiences of commuters who heavily rely on public transportation for work, school, and other routine activities. When

transportation systems are perceived as efficient—meaning they are timely, accessible, affordable, and reliable—commuters are more likely to feel satisfied with the service. Given that most commuters in Roxas City may not have access to private vehicles, their expectations from public transport are closely tied to its ability to deliver smooth and predictable service. Therefore, any improvement in service efficiency is immediately felt and appreciated by the commuting public.

Furthermore, this finding reflects a commuter base that values consistency, speed, and reliability—qualities that directly ease the burdens of travel. The result suggests that investing in operational efficiency, such as maintaining vehicle punctuality, improving route coverage, and ensuring affordable fares, can significantly enhance public perception and trust in the transportation system.

This relationship also implies that dissatisfaction may stem not from comfort or aesthetics alone but more from tangible, day-to-day operational inefficiencies that disrupt commuters' schedules and routines.

The strong positive correlation aligns closely with Choi and Kim (2021), who emphasized that commuter satisfaction is influenced by multiple operational dimensions, such as fare affordability, access, cleanliness, and driver courtesy. These are all elements of service efficiency that, when optimized, lead to greater commuter contentment.

Majumdar and Potoglou (2021) similarly found that trip satisfaction is closely linked to the physical and functional quality of transport infrastructure—such as timely arrivals and reliable stops—reinforcing the direct relationship observed in Roxas City between efficiency and satisfaction.

In the Philippine context, Galvez, Katon, and Valdez (2025) demonstrated that commuters are significantly influenced by service quality and cost-efficiency, which directly support the idea that higher efficiency contributes to greater satisfaction, particularly in urban transport systems.

Mao and Dijst (2016) introduced the role of intelligent transportation systems in improving both efficiency and satisfaction. Their findings suggest that features such as real-time tracking and reduced delays elevate user control and confidence in transport systems, leading to greater satisfaction—an idea clearly reflected in the strong positive correlation observed.

Rasca and Saeed (2022), focusing on smaller urban areas like Roxas City, highlighted that satisfaction levels are primarily driven by practical and efficiency-based concerns such as accessibility, waiting times, and convenience, further validating the significant correlation found in the current data.

Liu et al. (2023) found that long commute times—often the result of inefficient systems—lower overall life satisfaction. This indirectly supports the finding that efficient public transportation enhances commuter satisfaction by minimizing delays and disruptions.

Lastly, Gaspar et al. (2024) emphasized the importance of improving service efficiency to address the needs of specific commuter groups, such as those with reduced mobility. This illustrates how a lack of efficiency can undermine satisfaction across various demographics, reinforcing the importance of efficient operations as a driver of universal satisfaction.

Thus, the hypothesis that there is no significant difference and relationship between Efficiency and Satisfaction of Commuters in Transport Service in Roxas City is hereby rejected.

CONCLUSION

In the light of the aforementioned findings of the study, the following conclusions were outlined.

The transport service in Roxas City was found to be highly efficient. This means the city's transport system is functioning effectively and can serve as a model of good practice. However, this also implies a responsibility to sustain or further improve this level of service, ensuring that future demands and urban growth do not compromise current performance.

Commuter satisfaction with transport services is also high. This positive perception can lead to increased and continued use of public transportation, reducing the need for private vehicles. In the long run, this contributes to less traffic congestion, lower emissions, and supports the city's move toward more sustainable urban transport.

A significant difference exists in commuter satisfaction across different levels of transport efficiency. This highlights service inconsistencies across routes or times, indicating a need for city planners and operators to address the areas of inefficiency. Improving underperforming sectors can lead to more balanced satisfaction and a more equitable public service.

There is a significant relationship between transport service efficiency and commuter satisfaction. This confirms that efficiency directly affects how commuters perceive and value the service. Investing in efficiency improvements can therefore enhance public satisfaction, which is vital for encouraging long-term use and public support for the transport system.

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