

## **Commuter Satisfaction: The Foundation for a Feasibility Study of a New Transportation Terminal**



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**ABSTRACT:** Commuting is regularly recurring movement between one's place of residence and place of employment, or research, and in doing so exceed the boundaries of their residential group. The research focuses on the urban – rural bus service commuter's satisfaction level in the selected settlements in the Municipality of Estancia. Estancia is to represent the Northern part of Western Visayas. This is still in a developing stage, which is yet to reach the advance level of large town. The main objectives are to evaluate the public transport service quality through commuter's satisfaction survey. A total of 100 questionnaire forms are collected. The result indicates socio – demographic trip characteristics that have affected the level of satisfaction and aspirations of the commuters for potential terminal improvements. It was assessed as acceptability in terms of existing terminal operations, environment, architectural design and location. It offers a deeper understanding of the commuter's attitude towards public transport and the sense of convenience in public transport services. Other than that, it was found that there is a difference between modes of transport in terms of commuter's preferences over public transport. The result will help to improve the quality of operation of transport providers according to the satisfaction, expectations of the various modes of transport and acts as a guide for possible public transport terminal construction.

**KEYWORDS:** commuter, public, satisfaction, terminal, transport.

### **INTRODUCTION**

Public transportation networks are the most popular, accessible, and widely available means of public transportation in many urban and rural regions across the world. A good public transportation system is required to facilitate economic development, population growth, and the expansion of urban or rural activities. Bachok et al (2014) Current transport systems embraced by many towns and cities, particularly those in the Municipality of Estancia, are not adequate and prepared to meet the needs of settlement types, socio-demographic and trips that are characteristic of a successful urbanization process. Thus these networks reflect a weak picture of general accessibility and mobility in urban or rural parts of the Municipality of Estancia, Philippines. A public transit service can have good connectivity, leading to a secure safe and intelligent transport system that is easy and efficient. Amiril et al (2014) In addition, an effective public transit infrastructure improves personal economic prospects, saves electricity, saves money and decreases environmental impacts.

Increased travel demand and expectations for private vehicle use are driving fast motorization in many nations worldwide. The majority of residents are now highly reliant on private motorized transportation. The beauty of the vehicle, as well as the eagerness of the people to drive, contributed to this impact. Greater private motorization has led to increased road congestion, resulting in lengthier commute times for many households. Aside from pollution, private motorization frequently compromises the safety of handicapped road users, necessitates the use of non-renewable energy, and poses substantial difficulties to the quality of human environments. To avoid further difficulties caused by this increase in motorization, many experts and governmental decision-makers highly suggest that many cities have an appealing public transit service as an alternative mode of transportation.

In practice, however, if service quality is poor and inefficient, public buses, vans, and PUV services appear to degrade the transportation system. There are a number of issues with public transportation systems, including infrastructural limitations, the employment of low-quality public buses and interchange facilities, the nuisance fleet, the dispatch of low-passenger routes, and excessive waiting periods. Rohani et al (2013) As a result, specific measures to analyse the current performance of the transportation system should be enforced in order to encourage high-quality delivery of existing transportation services. The usual level of service (LOS) of public bus, van, and PUV operation or the degree of customer satisfaction may be used to assess the quality of transportation services. Ismail et al (2012) , Kamaruddin et al (2012), Noor et al (2014) In order to offer effective and efficient public transportation networks, transportation partners in the Municipality of Estancia must assure service supply. This is to maintain the current loads of travellers, which will surely increase in the future.

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The Estancia Passenger Terminal is the subject of this investigation. Estancia is located in the northern portion of the province of Iloilo, roughly 135 kilometres (84 miles) from the regional center of Iloilo City. The population is 48, 546 people, according to the 2015 consensus. High population growth and positive demographic trends would imply a high need for travel both today and in the future. The present passenger terminal in Estancia lacks the essential amenities to serve the public. There are no restrooms or a shaded waiting area for tourists, and the area is not built of concrete.

### OBJECTIVES OF THE STUDY

The purpose of this research was to assist the current transportation systems in the Municipality of Estancia as well as to build a sustainable public transportation infrastructure for the future public transportation terminal. Specifically examine the socio-demographic and travel variables that have influenced commuter satisfaction with prospective terminal alterations. In addition, the acceptability of present terminal operations, environment, architectural design, and location of the existing terminal must be determined.

### MATERIALS AND METHODS

Using a descriptive research approach, the study's objective is to determine commuter satisfaction with Estancia's existing passenger terminal.

This section explains the research technique utilized in this article, as well as the study focus, site selection, methodologies employed, and processes used in the selection process. This study made extensive use of descriptive research architecture.

#### Site Selection

The original study method was to find potential interviewees and a suitable field location, namely a terminal inside the Estancia district, which was shown to be inappropriate and inadequate for commuters to fully meet their demands.

#### Selection of Respondents

Respondents to this survey were randomly chosen passengers from the Estancia Passenger Terminal. Using Sloven's algorithm formula to be able to figure out the error of tolerance. With a confidence level of 90% giving a margin error of 10%, the number of respondents is 100. It was computed by taking first the real amount of the overall population of commuters every day. The precise number of passengers utilizing the terminal from 2:30 a.m. on the first trip of the day to the last journey was observed in order to meet the average passenger population for the whole day. It is 6:30 p.m. As a consequence, 389 bus commuters, 380 truck commuters, and 143 jeep commuters made up the total of 912 terminal commuters.

#### Locale of the Study

The investigation was carried out at the Estancia Passenger Terminal in Barangay Bayuyan Estancia, Iloilo, Philippines. Estancia Municipality is located in the northern section of Western Visayas.

#### Sampling Criteria

The research is descriptive in nature. A survey of commuters who use the Estancia terminal was undertaken. The Estancia Terminal, however, is the sampling frame. On-board passengers aged 12 to 60 are the target demographic. The age range was chosen because, historically, these people used public transportation on a regular basis. Ismail et al (2012). During an on-board survey of four predetermined pathways, a total of 100 survey questionnaire forms are given and collated utilizing a simple sampling technique.

**Table 1. Distribution sampling unit for on board survey**

Locality	Terminal	No. of Respondent	Percentage %
Batad	Estancia	22	22%
Sara	Estancia	27	27%
Iloilo	Estancia	18	18%
Balasan	Estancia	33	33%

#### Data Gathering Instrument

This study makes use of a questionnaire created by the researchers. The study instrument is intended to assess commuter satisfaction with the current Estancia passenger terminal. It is divided into two sections. Part one gathered respondent's information which includes types of passengers, name, age, gender of respondent, residence, employment status, place of destination, and mode of transportation. Part two determine the level of satisfaction of commuters which is sub-divided into four categorized components of questions with regards to operations, environment, design, and location of the existing Estancia passenger terminal.

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### Data Gathering Procedure

Several bus, van, and PUV trip sessions are surveyed during the day's service. On-board passenger replies are mostly recorded between 4:00 a.m. and 7:00 p.m. for bus trips, 2:00 a.m. to 7:00 p.m. for truck trips, and 7:00 a.m. to 5:00 p.m. for PUV trips. There are four distinct routes with the minimal aim of capturing 100 commuters on four different routes throughout the given duration.

### On – board transit survey

The on-board, face-to-face survey method was utilized to collect the commuter's demographic and trip characteristics. On-board transit is the most effective survey to collect credible and precise statistics Yaakub et al (2011) .

During the on-board survey, the passenger satisfaction and ambition survey is used. Normal questions on the respondent's history, the kind of travelers, the point of arrival, and the mode of transportation will be utilized and filled out by the enumerators.

### Reliability

The self-created questionnaire, which was responded by four classes, namely: working age (55 years old), college age (18-25 years old), secondary student age (13-17 years old), and retired age (above 60 years old), revealed a consistency of replies. By ensuring anonymity, secrecy, and overall physical comfort, the physical and psychological environment in which data is acquired has been eased. To maintain anonymity, respondents were advised not to provide their names on the form.

### Validity

The consistency with which the questionnaire was administered ensured that the content was relevant. All surveys were provided directly to the respondent by the researcher. For clarity and simplicity of comprehension, the questions have been written in simple English. The respondent was given specific instructions, and the researcher finished the questionnaire for those who couldn't read it. Many of the respondents completed the surveys in the presence of the researcher. This was done to dissuade respondents from entrusting surveys to others to fill on their behalf. The questionnaire was forwarded to the researcher statistician for validation. As a result, more concerns have been included to provide greater representation. Some questions were re framed to make them easier to understand, and more relevant other response choices were added to the closed – completed questions to allow for proper data interpretation. Risks to external legitimacy may be evaluated, according on the number of people who were contacted and rejected to participate in the survey.

### Data Analysis

After the data was processed, it was organized and evaluated. Closed-ended inquiries were evaluated using the Statistical Package for Social Science (SPSS) program. Descriptive statistics were used to analyse the data. Frequency tables were created, and the data was shown in pie diagrams and bar graphs. The researcher used a quantitative content analysis to evaluate the open-ended questions in order to quantify emergent features and notions.

Table 2 shows a 5-point scale with the appropriate description and clarification used as a way of labeling to assess commuter satisfaction with the new Estancia Passenger Terminal.

**Table 2. Scale Used in Interpreting the Data on Commuters' Satisfaction with the Existing Estancia Passenger Terminal.**

<u>Mean</u>	<u>Interpretation/Categories</u>
4.21 – 5.0	Very Satisfied
3.41– 4.2	Satisfied
2.61 – 3.4	Neutral
1.81 – 2.6	Dissatisfied
1.0 – 1.8	Very Dissatisfied

### Interpretation Table

The interpretation for traveller satisfaction with the present Estancia Passenger Terminal was based on a weighted means computation performed using IBM SPSS Statistics version 19. At the start of the investigation, it was determined randomly that the weight means would be interpreted as follows:

**Table 3. Scoring System for Data Interpretation.**

<u>Numerical Value</u>	<u>Description</u>	<u>Interpretation</u>
5	Very Satisfied	Practices and Implementation of standards of the component being set are properly followed with utmost effort exceeds the expectation.

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4	Satisfied	Practices and Implementation of standards of the component being set are properly followed with consistency and efficiency.
3	Neutral	Practices and Implementation of standards of the component set are inconsistent, lenient and occasionally followed.
2	Dissatisfied	Practices and Implementation of standards of the component set are observed rarely and minimal.
1	Very Dissatisfied	Practices and Implementation of standards of the component set are not observed, functional, or trailed.

### Limitation

The outcomes in this study are subject to the data gathered based on the analysis convenience and the authorization granted by the operators. Within one day, data is collected during the off-peak hours of public transportation services. Furthermore, statistics were obtained on school days in several metropolitan areas, such as the Municipality of Estancia. Findings may change if the survey is conducted over a longer period of time or if more money is invested in an on-board survey for more than one trip/route, even if the survey is conducted by a larger number of enumerators. Despite the approach's flexibility to diverse case studies, there are several significant flaws. A variety of planned time-limits for data collection could not be fulfilled during a thorough survey owing to bus breakdowns, driver behavior/attitude difficulties, and modified/altered schedules, frequency, and route defixing. The scenario with buses, vans, and PUVs varies from ride to ride. Buses, vans, and PUV bodywork, engines, and comfort and convenience requirements can all be differentiated from one another.

### RESULTS AND DISCUSSION

According to the survey, the categories of respondents are mostly commuters who use bus, van, and PUV services as a method of transportation between destinations on a variety of occasions. Out of a total of 100 responders, 39.20% (22-55 years of age), 18% are from the college age group (18 – 25 years old), followed by 20.98% from the student age group (13 – 17 years old), and 7.64% from the senior group (over 60 years of age). Respondents' itineraries in the metropolitan region are predetermined by operators who provide authorization to conduct surveys on their buses, vans, and PUVs. Among those polled, female commuters (58 percent) are more dissatisfied than male commuters (42 percent). In defining the typical characteristics of commuters in public transportation, there is evidence of gender discrepancy.

The overall results of the socio-demographic percentage distributions are based on two components of the socio-demographic surveys (age and gender), which suggest a larger tendency for respondents to be dissatisfied with present bus services. On the other hand, the proportion of passengers of school and college age who are dissatisfied with transportation systems is higher.

The study also revealed that the features of the journey impact the degree of satisfaction among commuters from various towns, with the intent of the trip, mode of public transportation, and distance of the trip being predictors of passenger satisfaction. Observation. The results also revealed that there is a disparity between the socio-demographic factors and the trip features that impact the degree of happiness among respondents, with the geographical area being one of the key variables.

All of these situations illustrate the link between operational, environmental, architectural design, and location issues and the level of satisfaction with bus services. Some variables, such as the outdated bus service plan, the only operator, and the low frequency of bus travels, influence respondents' level of satisfaction.

**Table 4. Satisfaction based on the Overall Satisfaction of Commuters.**

	Satisfaction	Operation	Environment	Design	Location
Mean	1.7667	2.2667	1.7000	1.5222	1.5111
N	90	90	90	90	90
Std. Deviation	0.68777	0.64998	0.79958	0.65733	0.64030
Median	2.0000	2.0000	1.0000	1.0000	1.0000

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Table 4 indicates the overall satisfaction of the commuters in terms of operation, which has a mean of 2,2667 which is neutral, an environment of 1,700 which is very dissatisfied, an architectural design of 1,522 which is very dissatisfied and a location of 1,511 which is very dissatisfied.

The study indicates that more respondents are unhappy with existing travel systems.

### CONCLUSION

In order to improve the existing transportation system, it is necessary to conduct a passenger satisfaction survey using quantifiable metrics for operation, environment, architectural design, and location of the present terminal, as well as comfort and convenience. Satisfaction with current service and prospective ambition toward a variety of quality indicators of these qualities is the best approach to analyse the future trajectory of demand and benchmark, as well as the degree of quality services supplied. Furthermore, the commuter's degree of pleasure indicates the feasibility of the current and future Estancia Terminal Building. The study's findings suggest that demographic and travel characteristics variables impact commuter happiness on various routes. They explain how variables such as terminal operation, environment, architectural design, and the location of the current terminal may impact the services offered, as well as passengers' impression of the quality of the services given. Essentially, the characteristics of the level of transportation service measurement, such as travel time, waiting time, occupancy level, regularity of service or reliability, convenience, cleanliness, and crew conduct, will be directly influenced by the position of the demographic profile of passengers and the characteristics of the journey. Both of these satisfaction characteristics are critical in identifying the true difficulties with bus services at Estancia Terminal. The findings of this study should be regarded as a standard for the development of transportation systems for the future public transportation system, particularly for the reconstruction of Estancia Terminal.

### RECOMMENDATION

It is recommended that the commuters who use the Estancia terminal be given suitable action in response to their discontent with the environment, architectural design, and placement of the present Estancia passenger terminal. In terms of the functioning of the Estancia passenger terminal, there is no need to modify processes if there is room for improvement, and researchers are encouraged to do so. For the prospective design and planning of a new transportation hub, collaboration with the Local Government Unit (LGU) is recommended. This study's ongoing growth is promoted in order to meet the demands of the Policy, Management, Engineering, and Construction industries.

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