

An Analysis of Ride-Hailing Services as Mode of Public Transportation in Olongapo City

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ABSTRACT. The transportation scene is ever-changing, with ride-hailing services moving people safely and efficiently, but their effects on conventional commuting systems still need to be discovered. The researchers used Multiple Linear Regression Model to assess how reliability, comfort and convenience, safety and security, affordability, environment and health, and facility affect respondents' acceptability of hailing services in Olongapo City and to determine which factors highly influenced respondents' willingness to pay using Relative Importance Index. Furthermore, respondents' satisfaction with Olongapo City's hailing services was sought based on the above characteristics. Findings showed that 89% of respondents accepted hailing services for comfort and convenience and were prepared to pay an average of ₱9.9022 for hailing services, considering every aspect. Further researchers could conduct comprehensive analysis of existing transportation infrastructure and regulatory framework in Olongapo City to identify potential challenges and opportunities for successfully integrating hailing services and applying three-wheeled vehicles as a mode of hailing service.

KEYWORDS: Transportation, Ride-Hailing, Relative Importance Index, Multiple Linear Regression Model, Three-Wheeled Vehicle

1. INTRODUCTION

1.1 Background of the Study

The transportation scene has been up to major studies across the borders regarding its efficiency and availability in transporting various passengers. Through rigorous research, transportation systems have been evolved to meet the expectations and capacities of users (Degreat et al., 2018). With the involvement of ride-hailing service as a means of transporting passengers with high tolerance of safety and minimal effort, the transportation scene remains to be an ever- changing system. Despite its importance in the current public transport scene in various locations, the impact of ride-hailing systems on traditional commuting systems remains relatively unexplored. Ride-hailing represents a wide variety of platforms in which individuals can hail or pay for a ride from various drivers, may it be professional or part-time, using online applications (Clewlow & Mishra, 2017). The rise of ride-hailing systems has developed a new way for people to travel within vicinities as they provide a convenient way for passengers as an alternative to urban transport (Sadowski & Nelson, 2017). Ride-hailing also provides a rise of travel for passengers due to the increase in vehicle trip generation and decrease in auto vehicle ownership, ultimately reducing the amount of greenhouse gas emissions (Rodier, 2018). The reduction of auto vehicle ownership can be particularly beneficial to highly urbanized cities, especially within the city of Olongapo with a bustling transportation system since it allows for a lower congestion of traffic and faster travel time.

The city of Olongapo is a highly urbanized city in the Philippines with an active urban transportation system. It is in a lowland area near the eastern coast of Subic Bay, approximately 110 kilometers northwest of Manila. It is characterized by its coastal location, with the bay providing opportunities

for port facilities and tourism development. As of 2021, there is a total population of 244,927 (Philippine Statistics Authority [PSA], 2021). The Comprehensive Development Plan of Olongapo city envisions its transportation system to become a model of economic gateway to the North for the improvement of its people and community. This vision allows the city to develop new solutions to urban problems, thus allowing the city to become a highly urbanized community. The city also caters to a wide array of people and a complex urban transport. Due to the history of disorganized transport systems, wherein public utility vehicles are often chaotic, the management of Olongapo City developed various alternatives to remedy the situation. One of these is the jeepney color coding system. The jeepney color coding system implemented in Olongapo City constitutes a vital mechanism for mitigating traffic congestion and optimizing public transportation efficiency. With jeepneys being color coded based on their designated routes, the system is designed to streamline vehicular flow and alleviate congestion during peak periods. There are a total of 7 different color codes within 15 barangays. This well-structured and organized approach exemplifies the city's commitment to fostering sustainable urban mobility and enhancing the overall commuting experience for its residents (Olongapo City Colored Jeepneys, 2019).

Ride-hailing services have been recognized as a significant advancement in improving public transportation by bridging the gap between public transit and passengers' final destinations. Tirachini and Gomez-Lobo (2020) conducted a study that emphasizes how ride-hailing services, such as Uber and Lyft, can enhance public transportation systems, particularly in urban areas. They found that these services help solve the "first and last mile" problem by providing a convenient and flexible connection between public transit hubs and passengers' final destinations, thus increasing the overall use and accessibility of public transit. This integration leads to a potential reduction in car ownership and use, contributing to decreased traffic congestion and environmental benefits. However, the study's focus on developed countries creates a gap, as it does not fully address the challenges and dynamics in developing nations, where infrastructure and regulatory frameworks may differ significantly.

In the Philippines, Cabanilla et al. (2021) explored the role of ride-hailing services in the urban transportation landscape, specifically in Metro Manila. Their study highlights the dual nature of ride-hailing services, acknowledging their contribution to easing commuter burdens by providing an alternative to traditional public transport modes, which are often overcrowded and unreliable. However, they also pointed out the challenges these services pose, such as increased traffic congestion due to higher vehicle volumes and the inadequacy of existing regulatory measures to manage this growing sector effectively. Despite these insights, the study lacks a comprehensive analysis of the long-term effects of ride-hailing services on public transport and urban mobility, as well as the behavioral changes among commuters as the market for these services evolves. Moreover, there is a need for more detailed research into how ride-hailing services interact with various socio-economic factors in the Philippines, such as demographics and the satisfaction of users of ride-hailing services.

Moreover, as the city experiences various improvements in its urban setting, ride-hailing services are starting to become an integral part of transportation in the city. Ride-hailing services have seen substantial expansion in the Philippines, establishing themselves as a critical component of urban transportation. Grab, one of the most prominent competitors in the market, provides a diverse range of services, such as GrabCar for private car rentals, GrabTaxi for metered transportation services, and GrabBike for motorcycle journeys. Angkas has also become increasingly popular for its motorcycle transportation services, particularly in congested areas where two-wheelers provide a speedier alternative to automobiles. Additionally, these platforms offer users the convenience of on-demand transportation options, which are frequently accessible through smartphone applications. Ride-hailing companies persist in their efforts to broaden their operations throughout the archipelago, despite the competition from traditional transportation services and regulatory obstacles. This expansion is a response to the increasing demand for reliable and efficient transportation (LTO Portal PH, 2024). Due to the efficiency of ride-hailing services in reducing waiting time for passengers in relation to the traditional commuting system, these platforms have the potential to alleviate traffic

congestion within the city (Clewlow & Mishra, 2017). Through this, Olongapo City has adopted ride-hailing services such as Grab and Angkas are available, providing options for car and motorcycle transportation, respectively (LTO Portal PH, 2024). Hence, this study aims to analyze the impact of the ride-hailing system on the traditional public transport in Olongapo City and its factors to gain insights into their respective implications for urban transportation planning.

1.2 Statement of the Problem

The color-coded jeepneys in Olongapo provide an organized and efficient public transportation system, reducing traffic congestion and enhancing the commuting experience for residents and visitors alike. However, these color-coding systems generate excessive trips in long- distance origin-destination trips. Aside from this, there is also a shortage of proper public transport. Jeepneys, tricycles, and pedicabs have been parked inappropriately in several parts of the city, causing traffic congestion. Moreover, there is a present ride-hailing service in the city, which is Grab, that helps provide faster and more efficient transport for commuters, but issues arise with its cost and affordability. The optimization of commuting and ride-hailing systems in Olongapo City revolves around the most efficient and sustainable means for the improvement of the usage of overall road transportation. In optimizing, vital aspects that will be tackled are route planning, geographical area, available vehicles, and price range strategies for the best use of the users.

1.3 Research Objectives

In this regard, this study aims to provide valuable insights into the factors influencing transportation choices and the potential benefits of ride-hailing services in Olongapo City by addressing the following objectives:

1. Assess the impact of distance proximity to urban centers and the existing public transport in Olongapo City
2. Identify the key demographic factors that significantly influence the level of satisfaction and willingness to pay of the respondents in using hailing services in 15 Olongapo City.
3. Evaluate how factors such as reliability, comfort and convenience, safety and security, affordability, environment and health, and facility affect the respondents' willingness to pay hailing services in Olongapo City

1.4 Significance of the Study

The results of this study will help understand and analyze the preferences and satisfaction levels of individuals using ride-hailing services versus traditional commuting methods. It can provide valuable insights into the key factors that influence transportation choices. This knowledge can help service providers and policymakers tailor their offerings to better meet the needs and preferences of commuters in Olongapo City. Aside from this, by comparing the overall cost- effectiveness of ride-hailing and commuting, the study can provide information on the economic implications for both users and the city. Understanding the financial aspects of these transportation options can assist individuals in making informed decisions regarding their transportation expenses and provide insights for policymakers in promoting affordable transportation solutions. Lastly, assessing the impact of ride-hailing services on the reliability, affordability, comfort and convenience, safety and security, environment and health, and facility can contribute to developing sustainable transport solutions in Olongapo City.

1.5 Scope and Limitations of the Study

The scope of this study focuses on comparing the ride-hailing system and commuting system in Olongapo City, Philippines, with the aim of understanding their respective benefits, challenges, and implications for urban transportation planning. The study will investigate 16 factors such as cost-effectiveness, travel time, user experiences, and social and environmental implications of both systems. However, it is important to acknowledge the limitations of this study. The research will be conducted within a specific timeframe and may not capture long-term changes or evolving trends in the transportation landscape. Additionally, the

study will rely on self-reported data from surveys and interviews, which may introduce biases and limitations in terms of data accuracy and representativeness. Despite these limitations, this study aims to provide valuable insights into the ride-hailing and commuting systems in Olongapo City, serving as a foundation for future research and policy discussions in the field of urban transportation.

1.6 Conceptual Framework

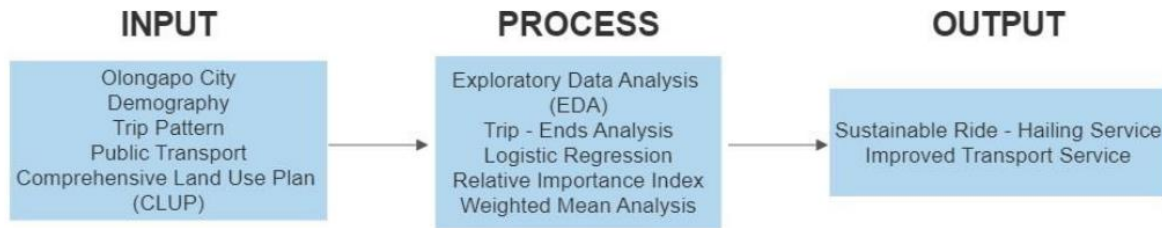


Figure 1. Conceptual framework of the study

As shown in the figure above, the study has 5 inputs, namely, the city of Olongapo, 31 demography in Olongapo city, trip patterns, public transport, and the CLUP of Olongapo city. Moreover, the study has 5 data analyses as the process of the study, namely, exploratory data analysis, multiple linear regression, relative importance index, and weighted mean analysis. This will produce an output about sustainable ride-hailing service and improved transport service in Olongapo City.

2. METHODOLOGY

The methodology employed in this research paper utilized exploratory research to investigate the perspectives and opinions of residents in Olongapo City, Philippines. In this regard, surveys and questionnaires have been administered to the respondents to gather data. This approach allows for a comprehensive exploration of the research topic, aiming to discover new insights, patterns, and relationships among variables, which are demographics, proximity, geographical location, and origin-destination. By employing qualitative and quantitative methods, the study aims to provide a holistic understanding of the experiences, attitudes, and preferences of the respondents in commuting and using ride-hailing services within the context of Olongapo City, Philippines.

2.1 Research Procedure

In examining the demography of Olongapo, a review of existing ecological profile is needed checking the population, age, employment, health service, trip making, income, etc.) primary gathering include survey of residents of Olongapo City. Also, the transportation mode available in Olongapo City has been revisited to establish the trip making pattern of residents using the traditional trip making to be substituted by trip hailing service. In comparing the impact of trip hailing service with the traditional trip making behavior of residents, factors will be identified in terms reliability, comfort and convenience, safety and security, environment and health, affordability, and facility. A survey is to be conducted to obtain significant data for analysis. Analysis will be done using multiple linear regression from the EDA method. The study has been guided by the following hypothesis:

- *H0*: There are no significant differences in terms of reliability, comfort and convenience, safety and security, environment and health, affordability, and facility between the traditional trip making behavior and ride-hailing service in the city.
- *Ha*: There are significant differences in terms of reliability, comfort and convenience, safety and security, environment and health, affordability, and facility between the traditional trip making behavior and ride-hailing service in the city.

2.2 Research Flowchart

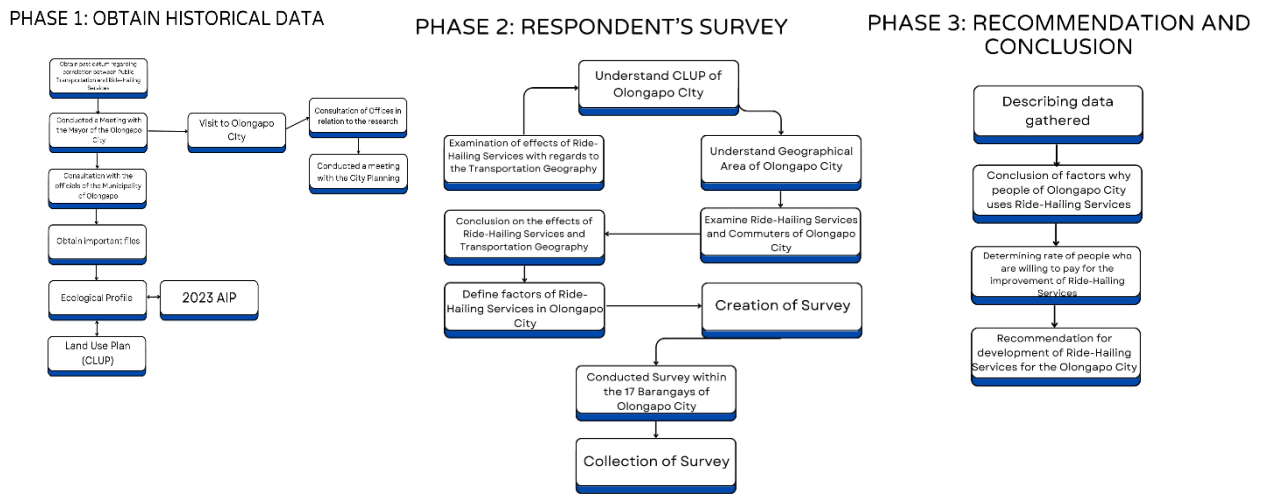


Figure 2. Research flowchart

As seen in the figure above, the methodology of the study contains 3 phases. The target of the first phase is to obtain historical data from the local government of Olongapo city. This includes obtaining a database for the current public transport in the city followed by conducting meetings with the different offices of the city hall in Olongapo. The next phase is all about data gathering followed by data analysis. After obtaining historical data, the researchers conducted the survey to obtain the necessary data for the study. Lastly, the last phase focused on the formulation of the conclusion and recommendations of the study.

2.3 Instrument of the Study

Passenger Survey has optimized to obtain the demography and trip making behavior of people in Olongapo City. Another is Maps, which is very significant in terms of establishing the geographical location of the entire city, land uses of the city, public transport route, and other available destinations within the city.

2.4 Data Analysis

The obtained primary and secondary data has been analyzed using the Python program's exploratory data analysis. Logistic Regression will then be used to obtain the acceptability and validity of trip hailing service in Olongapo city. This method is used to determine the probability of commuters using the ride-hailing service in the city aside from using the traditional methods of public transport. This achieves an understanding of the preference of commuters in the city between two transport modes, highlighting the impact of key factors the significantly influence the level of satisfaction. Exploratory Data Analysis is used in this study to characterize the factors affecting the use of commuters of Olongapo City of both ride-hailing and public transportation methods. These factors are beneficial in this study as they provide insights on how commuters choose their mode of transport daily. This analysis achieves in understanding the key factors, including proximity, geographical location, and demographics, that significantly influence the level of satisfaction and quality of ride-hailing system in the city. Trip-ends analysis is also used in the study to determine the commuters' behavior in their travel choice and mode. This analysis suggests how commuters determine their mode of travel, depending on the distance of the origin to its destination, highlighting the complex multi-modal transport of the city. This achieves in 34 developing an optimization of travel and time and cost for the commuters, analyzing the effect of ride-hailing system in the current scene of public transportation in the city. In relation with the involved key factors in the study, a Relative Importance Index (RII) analysis is used to determine the main factor affecting the commuters' decision in using trip hailing services by developing an index of

all the factors affecting the commuters' decision in the travel modes. Determining the key factor allows in understanding the commuters' behavior in their travel choice, significantly improving the model used in adapting trip hailing services in the city. This also allows to determine the key factors in the optimization of travel time and cost between the ride-hailing and traditional public transport methods in the city. Lastly, Weighted Mean Analysis is used to evaluate the Relative Importance Index analysis in relation with the total population in the city, their mode of travel, and travel choices daily. This also benefits in determining the key factors situated in using the suggested model of trip hailing service, as compared with the usage of the traditional commuting services in the city.

3. RESULTS AND DISCUSSION

This chapter presented tabulated data and figures that from analyzed data using different statistical tools. It is divided into 7 parts namely Demographics and Hailing Service Utilization, Satisfaction of the Respondents, Relative Importance Index (RII), Exploratory Data Analysis (EDA), Python Programming Language, EDA Data Interpretation using Python Programming Language, and Trip-end presentation.

3.1 Demographics and Hailing Service Utilization

Table 1. Demographics

Demographics	Category	Percentage
Sex	Male	62.07%
	Female	37.93%
Age (years)	Below 16	0%
	16-21	10.34%
	22-35	34.48%
	36-50	24.14%
	51-60	24.14%
	60 above	6.90%
	Marital Status	Single
Separated		0%
Married		41.38%
Widowed		0%
With Disabilities	Yes	6.90%
	No	93.10%
Average Monthly Income (Pesos)	Below 15,000	51.72%
	15,000-20,000	24.14%

20,000-25,000	10.34%
25,000-30,000	6.90%
Above 30,000	6.90%

Table 1 illustrates the socio-demographic attributes of the respondents including the sex, age, marital status, with disabilities, and average monthly income. The male respondents were 62.07% and females were 37.93%. On the other hand, respondents whose marital status are single are higher than those who are married, at 58.62% and 41.38% respectively. Furthermore, the Person with Disabilities (PWD) respondents are 6.90%. Lastly, the highest percentage of average monthly income of respondents is below 15,000 which is 51.72% of the respondents. Male individuals have a higher prevalence in using ride-hailing services in Olongapo, mostly owing to deeply rooted cultural norms and gender roles that favor male self-governance and mobility above female self-reliance. This supremacy is further strengthened by the existence of structural patriarchy, when males traditionally hold superior social and economic positions, affording them enhanced opportunities to acquire resources such as transportation. Moreover, the way women perceive safety and societal norms often restrict their ability to move about, which in turn contributes to a disproportionate number of male customers in ride-hailing services (Landsberg, 2020).

Table 2. Hailing service utilization

Attributes	Response	Percentage
Awareness	Yes	82.76%
	No	17.24%
	Grab	48.28%
	Food Panda	17.24%
	Shopee	13.79%
	Lazada	13.79%
Preferred Service (Goods)	Maxim	0%
	Move-it	0%
	JNT	0%
	Ninja Van	3.45%
	Others	3.45%
	Maxim	20.69
Preferred Service (Passenger)	Taxi	75.86
	Others	3.45
Ride-sharing	Yes	31.03
	No	68.97
Medium of service	Call	
	Booking	
	Referral	
	Online	
	Others	
	Go home	
Purpose	Work	
	School visit	
	Leisure	
	Medical	
	Others	

Table 2 displays the proportion of individuals employing different ride hailing services in Olongapo City. The table displays the extent to which transport users in Olongapo City are aware of the prevalent ride-hailing service. It reveals that 82.76% of the respondents are aware of the availability of this service. The table indicates the respondents' preference for the delivery service, with 48.28% favoring Grab above

alternative options. The data also indicates the favored services of the respondents in terms of their preference as passengers. Among the provided options, 75.86% of the respondents utilize the Taxi service. Taxis provide a higher degree of convenience and comfort compared to conventional types of transportation such as jeepneys or buses. Passengers like the convenience of taxis' straight routes, the seclusion they provide, and the comfortable air-conditioned atmosphere, particularly in adverse weather conditions or heavy traffic. In addition, ride-hailing services that use taxis, such as Grab, provide the ease of booking using a mobile application, enabling customers to bypass the inconvenience of flagging down a taxi on the street and to monitor the driver's whereabouts in real-time. Furthermore, the inclination for taxis in ride-hailing services may also be impacted by the established confidence in traditional taxi services and the comparatively recent acceptance of other application-based alternatives (Lee, 2018). Additionally, the survey revealed that a significant proportion of the participants prioritize ride-hailing services to minimize ride sharing with other commuters, accounting for 68.97% of the respondents. Furthermore, most respondents, accounting for 58.62%, expressed a preference for booking a ride-hailing service through a mobile application compared to other available mediums. Finally, 27.59% of the participants utilize ride-hailing services for commuting to their workplace.

3.2 Respondent's Satisfaction

This portion illustrates the satisfaction of respondents towards the factors such as reliability, comfort and convenience, safety and security, affordability, environment and health, and facility of the current hailing service in Olongapo city.

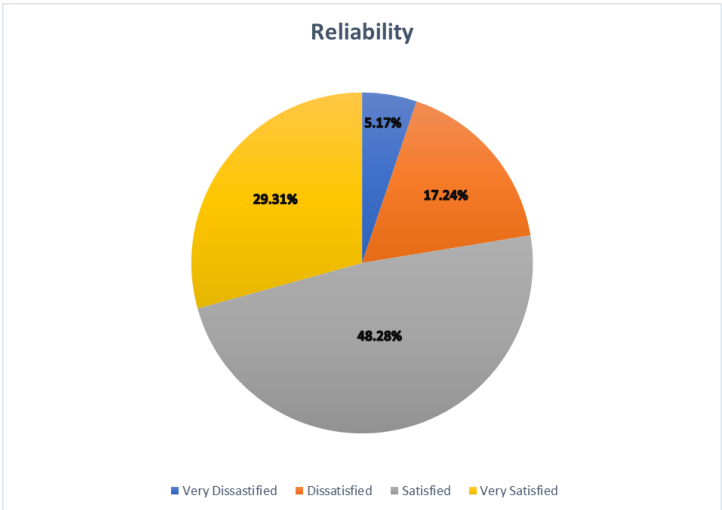


Figure 3. Respondent satisfaction on reliability

As seen in Figure 3, 48.28% of the respondents are satisfied and 29.31% are very satisfied with the reliability of the current hailing services in the city. Most of them are satisfied with the reliability of the hailing service since it is always available when needed and it requires ample time of waiting upon availing the service. However, 17.24% of the respondents are dissatisfied with the reliability of the current hailing service in the city.

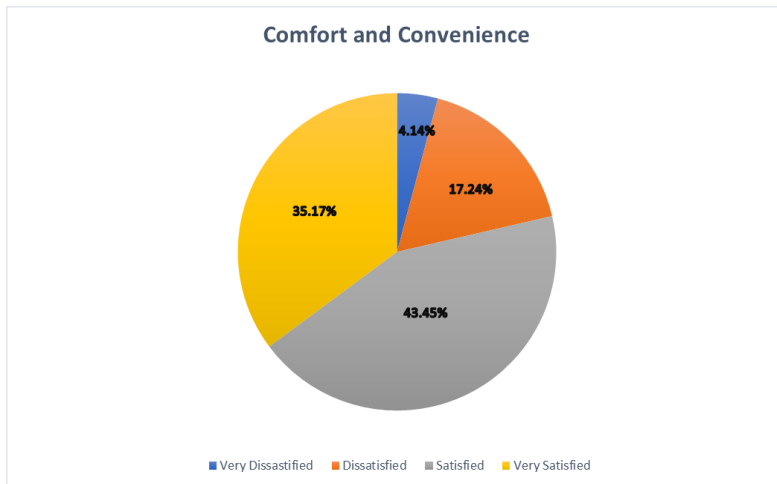


Figure 4. Respondent satisfaction on comfort and convenience

Furthermore, based on the figure above, 43.45% of the respondents are satisfied and 35.17% are very satisfied with the comfort and convenience of the current hailing services in the city. However, 17.24% are dissatisfied. The respondents' satisfaction on comfort and convenience includes seat comfort, cleanliness, travel speed, and comfort while waiting.

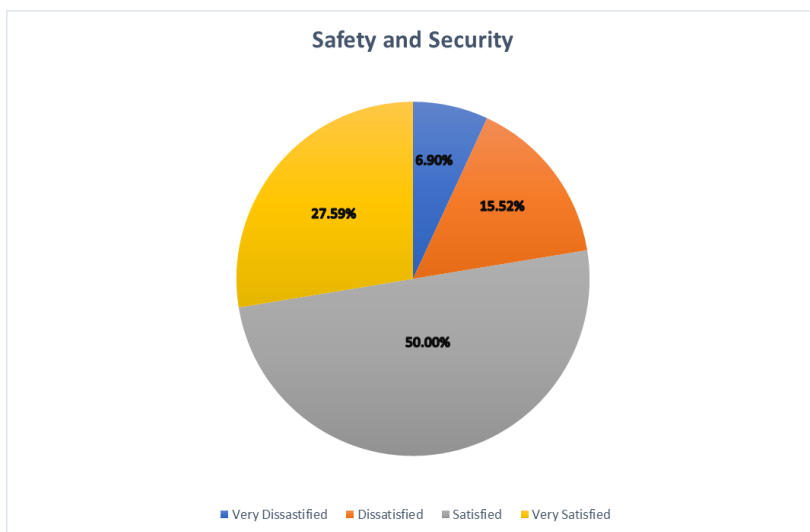


Figure 5. Respondent satisfaction on safety and security

Moreover, 50% of the respondents are satisfied while 27.59% are very satisfied with the safety and security of the current hailing services in the city. The respondents' satisfaction in this factor includes travel safety, travel security, risk insurance, and complaint system. Most of them are satisfied with the safety and security of hailing service as it provides privacy and ensures security upon traveling since it is more personalized than commuting.

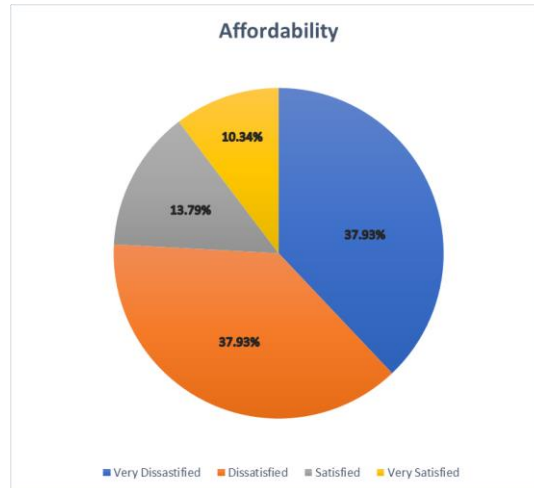


Figure 6. Respondent satisfaction on affordability

As seen in Figure 6 most of the respondents are dissatisfied with the affordability of the current hailing services in the city with 37.93% of the total survey. This is because hailing services are more expensive than commuting for transport and face-to-face travelling for buying goods.

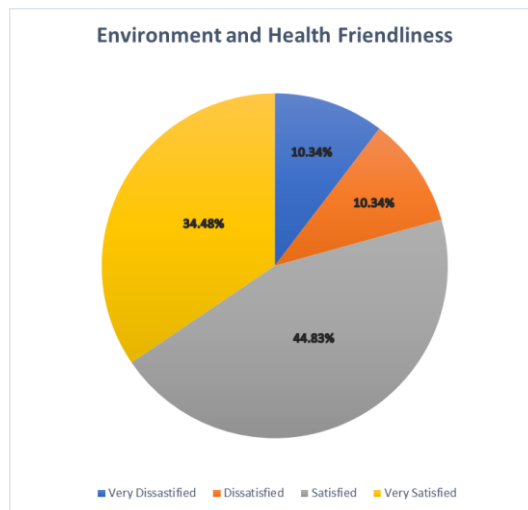


Figure 7. Respondent satisfaction on environment and health

Moreover, Figure 7 shows the satisfaction of passengers on the effect of using hailing services on the environment and health of its users. The pie graph shows that 44.83% are satisfied while 10.34% are dissatisfied with the effects of the current hailing services on the environment and health of the respondents. Satisfaction towards the environment and health includes smoke emissions from the hailing service.

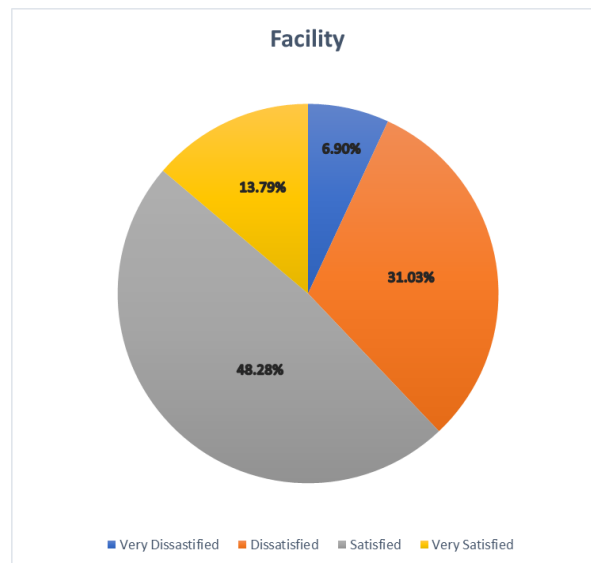


Figure 8. Respondent satisfaction on facility

Lastly, Figure 8 shows the satisfaction of the respondents with the facility of the current hailing services in the city. 48.28% are satisfied while 13.79% are dissatisfied with the facility being utilized by hailing services.

3.3 Relative Importance Index (RII)

Table 4.3 Relative importance index of the acceptability of hailing service in Olongapo city.

Factors Affecting the Acceptability of Hailing Service	Weighted Total	Relative Importance Index (RII)	Ranking
Comfort and Convenience	149	0.856322	1
Reliability	142	0.816092	2
Safety and Security	123	0.706896	3
Environment and Health Friendliness	70	0.402299	4
Affordability	58	0.333333	5
Facility	46	0.264368	6

Based on Table 4.3, most of the respondents are willing to accept hailing services in the city because of comfort and convenience with a relative importance index of 0.86. The ride-hailing services provide a smooth experience with their intuitive interfaces, which 45 contributes to a hassle-free ride. The inclination towards convenience is substantiated by the study done by Zhang et al. (2019) on the patterns of ride-hailing adoption. On the other hand, the facility is the least factor that influences the respondents to accept hailing service, followed by its affordability.

Table 4.4 Relative importance index of the willingness to pay for a hailing service in Olongapo city.

Factors Affecting the Acceptability of Hailing Service	Weighted Total	Relative Importance Index (RII)	Ranking
Safety and Security	517.5	0.68634	1
Reliability	426.5	0.56565	2
Comfort and Convenience	363.5	0.482095	3
Affordability	154	0.204244	4
Environment and Health	130.5	0.173077	5
Facility	112.5	0.149204	6

As seen in Table 4.4, most of the respondents are willing to pay for a hailing service in Olongapo city because of safety and security followed by its reliability. When selecting a ride-hailing service, users prioritize safety and security (mentioned by 28.9% of users). This is because most ride-hailing services provide insurance coverage, which enhances overall safety and security. As a result, ride-hailing is a preferred option for many commuters (Tirachini & Rio, 2019). The least factor which contributes to the willingness to pay of the respondents is the facility utilized by the hailing service.

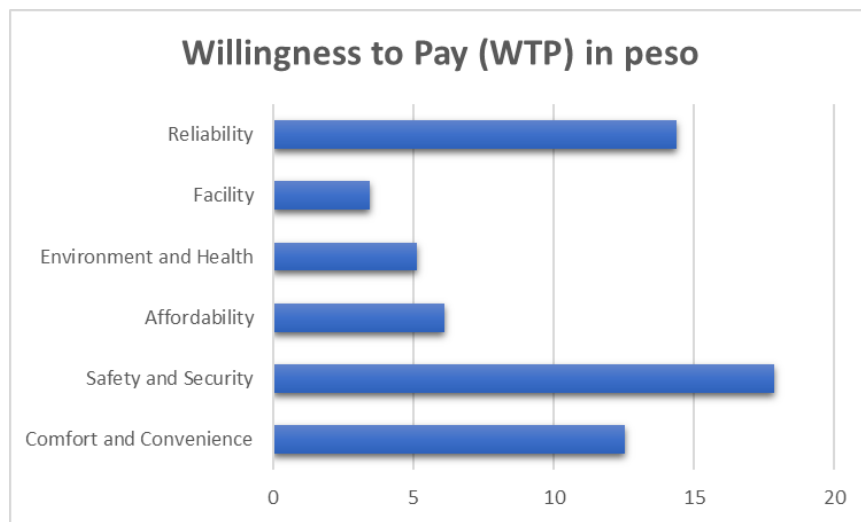


Figure 9. Summary of Respondents' Willingness to Pay (WTP) to Avail Hailing Service as a Mode of Public Transport in Olongapo City

Moreover, the average of the overall price that the respondents are willing to pay for availing a hailing service is ₱9.9022. Most of the respondents are willing to pay an additional ₱17.8445 for the improvement of the safety and security when utilizing a hailing service. This is followed by the reliability, comfort and convenience provided by a hailing service with an additional ₱14.3621 and ₱12.5345 payment respectively.

3.4 EDA Data Interpretation using Python Programming Language

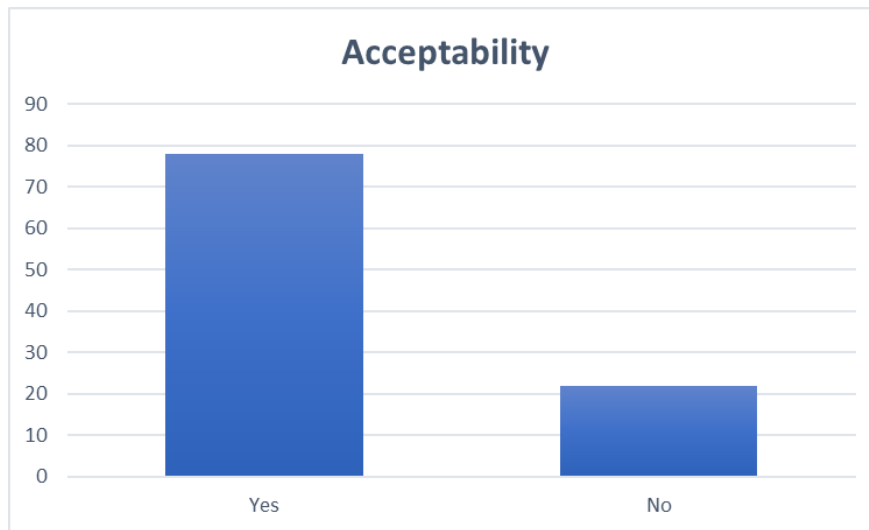


Figure 10. Respondents' acceptability of hailing service in Olongapo City

As shown on the bar graph, a significant majority of the respondents in the data set strongly support the implementation of hailing services in Olongapo City. This survey indicates that the use of hailing services is a viable option for transportation in the city and can be applied for both the movement of products and passengers.

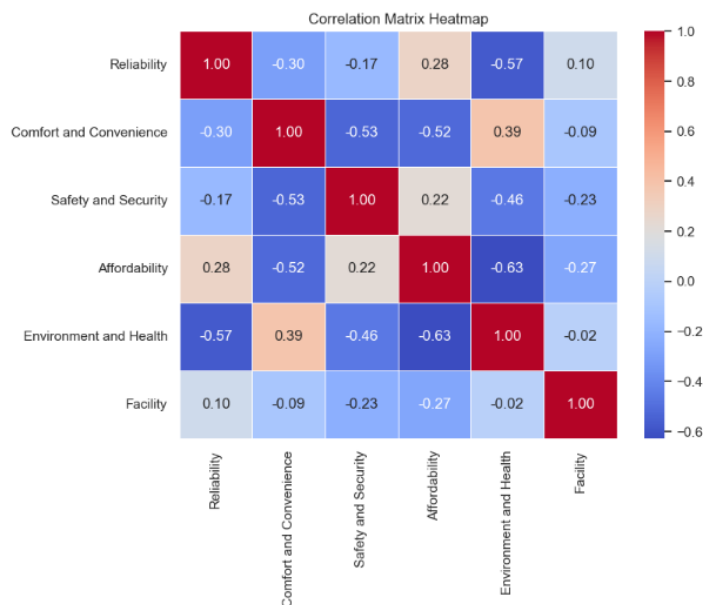


Figure 11. Correlation matrix of predictors

Figure 11 as shown above is used to check for multicollinearity for all the key predictors, namely Reliability, Comfort and Convenience, Safety and Security, Affordability, Environment and Health, and Facility. Each predictor has a negative and positive correlation between other predictors.

$$\begin{aligned}
 L = & 0.333078_{Reliability} + 0.342021_{Comfort\ and\ Convenience} \\
 & + 0.267725_{Safety\ and\ Security} + 0.328476_{Affordability} \\
 & + 0.25575_{Environment\ and\ Health} - 0.0447_{Facility} - 5.11269
 \end{aligned}$$

The above model shows the relationship of the predictors (Reliability, Comfort and Convenience, Safety and Security, Acceptability, Environmental and Health, and Facility) on the dependent variable (L) which represents the acceptability of ride-hailing service in the city. The predictor that highly influences the acceptability of hailing service in Olongapo City is Comfort and Convenience, with a coefficient of 0.342021, followed by Reliability and Affordability, with coefficients of 0.333078 and 0.328476, respectively. On the other hand, only Facility has a negative relationship with the dependent variable, with a coefficient of -0.0447.

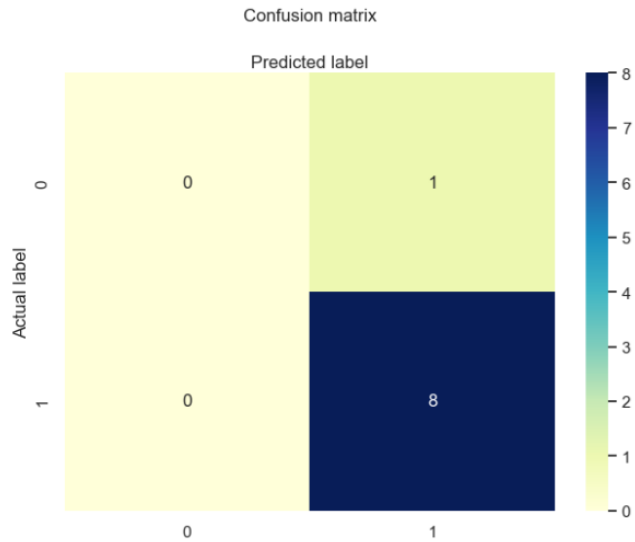


Figure 12. Confusion matrix

Based on the Confusion Matrix above, the derived model was able to label 8 true negatives while 1 is labeled as False negative which yields 89% model accuracy.

3.5 Trip-End Presentation

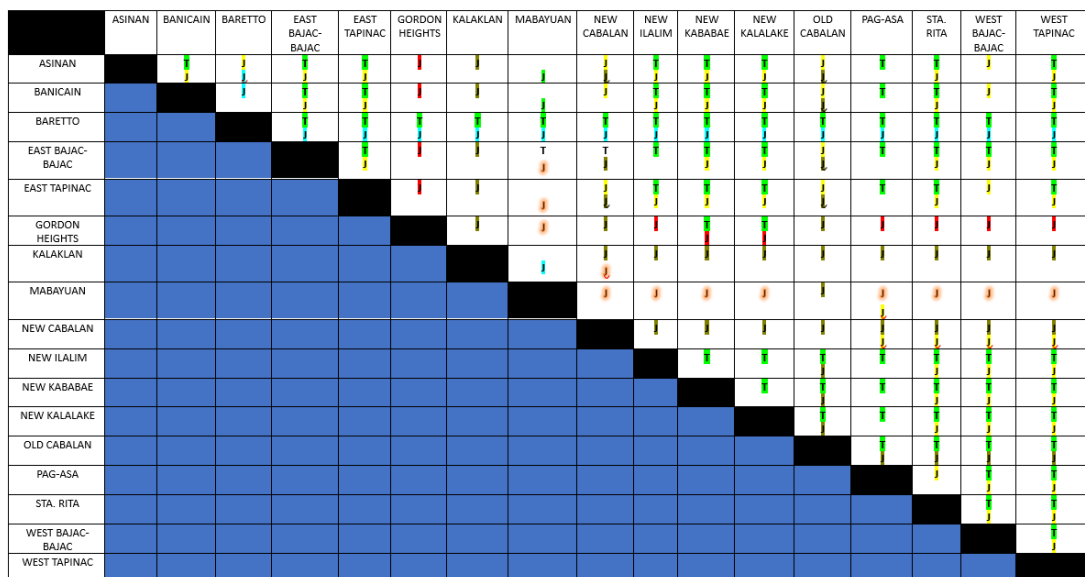


Figure 13. Trip-end presentation

Figure 4.7.1 shows the different available public transport in the seventeen barangays of Olongapo city.

Each barangay has jeepney and tricycle as the primary mode of transport with a specific color-coding, depending on their route.

4. CONCLUSION

In conclusion, the study has provided various perspectives in understanding the behavior of transport users and their willingness to implement ride-hailing service in the municipality of Olongapo. The study showed that among the key factors mentioned, the main influence factor that increased the eagerness of users to pay more is fee for increasing safety and security in travelling. The constant results from the study highlight the crucial influence of safety considerations on users' preferences and financial commitment in the ride-hailing services. Recognizing safety and security as crucial elements that influence consumers' willingness to pay not only provides valuable insights for strategic business choices but also highlights the societal significance of guaranteeing secure and dependable urban transportation alternatives (Mitropolous et al., 2021). Overall, results showed that respondents are willing to pay an additional ₱9.9022 to improve their travel in consideration of the 6 predictors.

Furthermore, among the given key factors in determining the suitability in the implementation of ride-hailing service in Olongapo City, maintaining comfort and convenience for the transport users serves as the main contributing factor as generated by the multiple linear regression model with 89% accuracy. This observation is aligned with the related literature surrounding these findings in shaping the users' perspective and adoption of ride-hailing service in the city. Since Olongapo City has a unique and dynamic geographical characteristic, the demographic tended to emphasize more on ease, comfort, and convenience aside from the traditional public transport. The imminent rise of population due to the growing urban development influenced the city's transport users to explore new alternatives that prioritized solutions and alleviated commuting challenges.

Considering the research conducted on the acceptance of hailing services in Olongapo City, several recommendations emerge to enhance the understanding of this emerging trend and contribute to the sustainable integration of such services into the local transportation landscape. First, further research could be more in-depth with what type of vehicle could be used as a hailing service in Olongapo City such as a three-wheeled vehicle for a more optimized result of its acceptability. Second, the local government of Olongapo city could implement an initiative to utilize more optimized and sustainable hailing service in the city. Moreover, there is a need for an in-depth analysis of the existing transportation infrastructure and regulatory framework in Olongapo City to identify potential challenges and opportunities for the successful integration of hailing services. In addition, in-depth analysis, and characterization of three-wheeled vehicle as a mode of hailing service is after sought. Lastly, future researchers can compare the optimization of travel time and cost between the ride-hailing system and traditional commuting methods using origin-destination data in Olongapo City.

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