

THE FACTORS AFFECTING CAMBODIAN CONSUMERS' DECISION TO USE PUBLIC TRANSPORTATION SERVICES

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ABSTRACT

This paper research aims to determine the factors which will affecting Cambodian consumer's decision to use public transportation services. The chosen independent variable for the conceptual framework consists of, personal factors (gender, age, employment status, income level and educational level), and factors affecting consumers' decision to use public transportation services (socio-economic status, accessibility, infrastructure, awareness/marketing, economical and environmental benefits). The objectives of this research are (1) To investigate the Cambodian consumers' decision to use public transportation services (2) To determine factors affecting Cambodian consumers' decision to use public transportation services (3) To identify the necessary strategies that can be implemented by the government to increase the usage of public transportation in Cambodia. The population of this study is Cambodian citizens who living in Cambodia during October to November 2021, which known the exact population of Cambodia citizens by using "Taro Yamane" formular. The data was collected by using the questionnaire survey and also analyzed the value by using descriptive statistics (i.e. number, percentage, mean and standard deviation). Moreover, for the hypothesis testing, the inferential statistic was analyzed by using independent sample T-test, one way ANOVA (F-test) along with multiple regression.

The results of the study have shown that most of the respondent are female, which age group is between 21-30 years old. Mostly, the respondents are working and the majority of their monthly income is around 300\$-399\$ and less than 100\$ range. The respondents' educational level, mostly the respondents answered that bachelor's

degree. For factors affecting consumers' decision to use public transportation service, from all results of the data analysis, in overall opinion of socio-economic status, accessibility, infrastructure and awareness/marketing stand for a neutral level, while economical and environmental benefits stand for disagree level. Regarding to majority of the respondents answered that they are owning a motorbike and they are preferring to use public transportation rather than public transportation. Mostly, the respondents use public transportation like, bus and tuk tuk and they usually use it 1-3 times per week. Also, the respondents mostly spend at least 0.5\$ - 2.00\$ on public transportation. Majority of the respondents are student, so mostly the respondents chose school and they also mentioned that public transportation is convenient. Their experience of using public transportation is positive which stand at level 4. Public transportation is heavily promoted in Cambodia and for the reason that Cambodian citizen refuse to use public transportation because it is unsanitary. In addition, as for the hypothesis testing results, it was found that the gender, age, employment status, income level and educational level have no significant influence on the decision to use public transportation service in Cambodia.

1. INTRODUCTION

As the world is developing, people started to know and get to know more about the new technology advance which will lead to better living for them in this generation. There are many countries in the world that have been developed and have many kinds of transportation services either public and private sectors. Those kinds of transportation services included: railway systems (sky train, mass rapid transit or also known as MRT), buses (city bus, shuttle bus, bus rapid transit, public light bus and so on.), three-wheels motorcycle (tuk-tuk), taxi, etc.

For Cambodia, it is a developing country that has private transportation services more than public transportation services. In these recent years, the country has started the public bus service or you can call it as “Phnom Penh City Bus” under the operation of Phnom Penh Municipal which supported by Japan’s government. According to Tourist of Cambodia’s website, in September 2014, the system has been opened to public with 3 lines that served in the Phnom Penh area and has been added over 11 lines, as of 2018. As the website has mentioned that, the system covers Prek Pnov area (North), Ta Khmao area (South), Chbar Ampov area (East), and Special Economic Zone area (West). For the fare of the public buses is costed KHR 1,500 about 0.37 United State Dollars per voyage irrespective of distance. The public buses are accepted only local currency which is Khmer Riel. There is no exception for everyone unless there are any notifications from the government.

In addition to passenger bus, other types of public transportation that are widely known are taxi, motorcycle taxi (also known as “Moto Dub”) and Tuk-Tuk. To begin with, Moto Dub used to be the most common mode of transport as it offers immediate travel with great mobility and low cost. Consequently, most tend to avoid such stressful driving and prefer Moto Dub to get to desired places instead. In spite of that, motorcycle taxi might not be easily spotted in some areas within the city especially at the outskirts. Moreover, even though Moto Dub provides a fitting traveling option, the level of safety is still considerably low, and the passengers were required to bring their own helmet. Subsequently, the new culture of public traveling has arrived and it is known as “Tuk-Tuk”. With the cutting-edge technology, Cambodian people can find Tuk Tuk to travel

from their specific spot via online booking using their smart phones, which benefits them by offering better capacity and guarantee the safety to some extends while riding on the road. The third most popular mean of transportation is an upgraded version of Tuk Tuk that is the four-wheels taxi. Having said that, it is inarguable that the expense of riding a taxi is the highest amongst all the aforementioned types of public transport.

This kind of public transportation has been operated in order to make a better solution for traffic congestion in Cambodia since local citizens are likely to own the transportation both motorcycle and car which lead to air pollution, traffic jam, climate change and other factors that may occurs, and harm the environment. In this case, the government would like to encourage the Cambodian citizens to use public transportation in order to alleviate the environmental concerns that may happen in the future.

2. RESEARCH OBJECTIVES

The purposes of this study are as follows:

- 1) To investigate the Cambodian consumers' decision to use public transportation services.
- 2) To determine factors affecting Cambodian consumers' decision to use public transportation services.
- 3) To identify the necessary strategies that can be implemented by the government to increase the usage of public transportation in Cambodia.

3. CONCEPTUAL FRAMEWORK

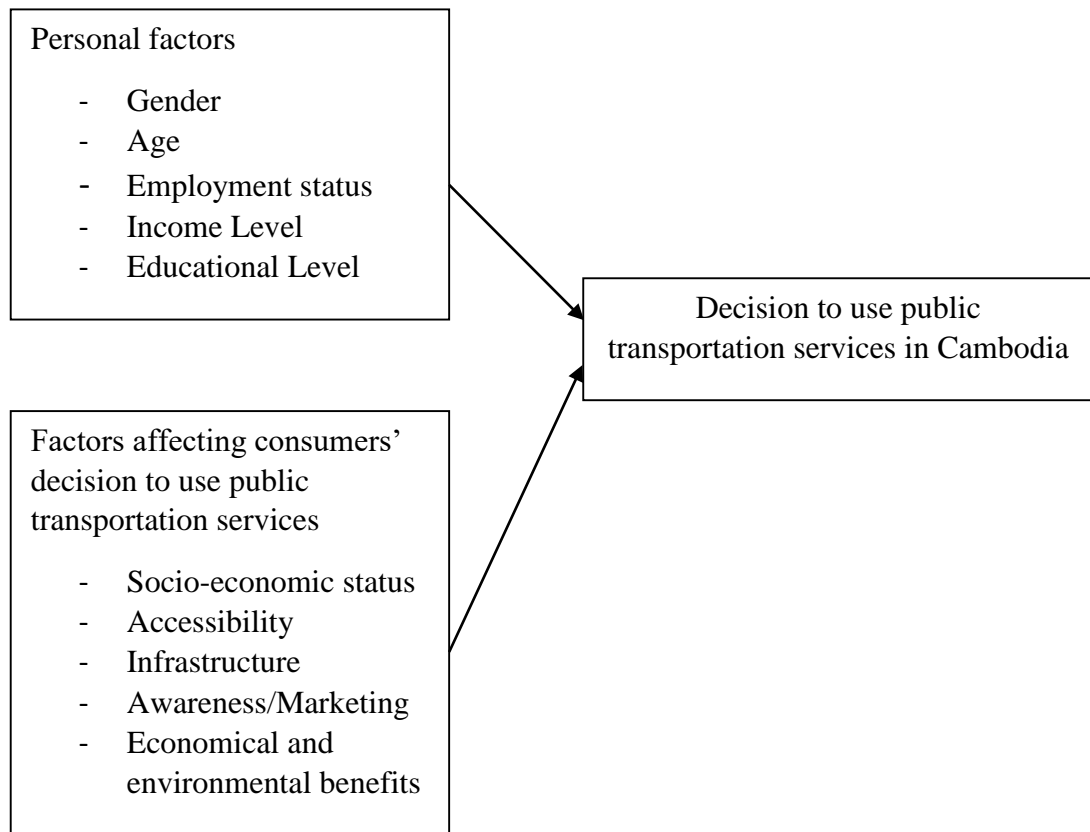


Figure 1: Conceptual Framework

4. RESEARCH MENTHODOLOGY

4.1. POPULATION

As the study was accomplished on the quantitative research methodology. The quantitative research methodology is the specific ways of proceeding or techniques that use to analyze, identify, select, process the information. This methodology is deciding to use in the research work due to its benefit and ease to collect the data. Through the collecting data process, there was the consists of citizens living in Cambodia.

4.2. SAMPLE

Data collection from the respondent is conducted through questionnaires and surveys distributed to citizens living in Cambodia. The questionnaires and surveys are

based on the identified variables described in the previous chapter. The population selected for this research is in the Cambodia from which the sample is selected as per random sampling method. Base on simplified formular for proportions, the sample size is taken as 400 based on the factors considered.

4.3. DATA COLLECTION

The data used in this study was primary data which was collected from Cambodian citizens who living in Cambodia, the details are as follows:

- Distributed the questionnaire on social media (Facebook, Messenger, Line, group chat, etc.) by using google form since the research cannot provide the hard copy for respondents. The questionnaire is for Cambodian citizens who are living in Cambodia since they know about the types and the exact use on the public transportation in Cambodia by allowing them to answer the questions independently.
- After completing the questionnaire, the sample was returned to the researcher.
- The researcher took the questionnaire back in order to verify the correctness and completeness of every questionnaire manually for further statistical analysis.

4.4. DATA ANALYSIS

Analysis of the data consists of descriptive analysis, independent T-test, F-test (One-way ANOVA) and multiple regression analysis. Descriptive measures that are commonly used to describe a data set such as mean, mode, median, standard deviation and minimum and maximum values are tested using the gathered data. Multiple regression analysis is used identify the significant level of the considered factors.

5. SUMMARY OF RESEARCH RESULTS

Results of the research study on the factor affecting Cambodian consumers' decision to use public transportation services can be summarized as follows:

Part 1: Analysis of personal factors, from the results of the data analysis of the questionnaire, majority of the respondents are female which the frequency of the respondents is 230 equals to 56.40 percent, most of which age groups are between 21-

30 years old with the frequency of the respondents is 194 equals to 47.50 percent. In addition, the respondents' employment status is mostly working people with the frequency of the respondents is 229 equals to 56.10 percent, and for the monthly income the majority respond that their income level is in the 300\$-399\$ range and less than 100\$ range have the higher percentage which is 21.30 percent with the frequency of the respondents 87. Moreover, the most answered in educational level is bachelor's degree which representing 55.40 percent and the frequency of the 226 respondents.

Part 2: Analysis of factors affecting consumers' decision to use public transportation, from the results of the data analysis of the questionnaire, in overall opinion of socio-economic status stand for a neutral level with the mean of 2.89 and standard deviation 0.549. While accessibility also stand for a neutral level with the mean of 2.65 and standard deviation 0.666. Moreover, infrastructure the overview stands for neutral with the mean of 2.805 and standard deviation 0.740. Furthermore, the awareness/marketing also stand for neutral with the mean of 2.84 and standard deviation 0.817. Last but not least, economical and environmental benefits stand for disagreement with the mean of 2.43 and standard deviation 0.751.

Part 3: Analysis of decision to use public transportation service in Cambodia, from the results of the data analysis of the questionnaire, majority of the respondents on the mode of transportation represents 37.30 percent of the total respondents, answers that they are owning a motorbike which the frequency is 152 people. The respondents' preference on the transportation found out that majority of the respondents prefer to use public transportation rather their own transportation which the frequency of the respondents is 215 represents 52.70 percent. In addition, majority of the respondents, representing 38.70 percent of the total respondents answered bus and tuk tuk with the frequency of 158 people. Moreover, 1-3 times a week is the most answered which representing 56.10 percent with the frequency of 229 respondents. The respondents mostly spend at least 0.50\$ - 2.00\$ as their normally spend on public transportation with 61.30 percent and the frequency of the respondents is 250. Respondents whose choose school represents 32.60 percent of total respondents which the frequency is 133

respondents. Most of the respondents, answered that using public transportation is convenient, representing 44.10 percent with the frequency of respondents is 180. 4 (Positive) is the most answered which representing 43.60 percent with the frequency of 178 respondents. Furthermore, when analysis the heavily promoted of public transportation in the respondents' area, the majority of the respondents are saying yes with 51.50 percent and the frequency of the respondents is 210. Last but not least, unsanitary is the most answered which representing 38.20 percent and the frequency of the respondents is 156 people.

Part 4: Analysis of research hypothesis, from the results of the data analysis of the questionnaire, the results of the comparative analysis of the difference between the mean level of decision to use public transportation service in Cambodia classified by gender both male and female, it found that different gender influenced the decision to use public transportation service in Cambodia is significantly different at the level .016. Moreover, the results of the comparative analysis of the difference between the mean level of decision to use public transportation service in Cambodia classified by age groups, it found that different age groups influenced the decision to use public transportation service in Cambodia is significantly different at the level 0.04. The results of the comparative analysis of the difference between the mean level of decision to use public transportation service in Cambodia classified by employment status, it found that different employment status influenced the decision to use public transportation service in Cambodia is significantly different at the level .000. The results of the comparative analysis of the difference between the mean level of decision to use public transportation service in Cambodia classified by educational level, it found that different educational level influenced the decision to use public transportation service in Cambodia is significantly different at the level .000.

Table 1: The correlation of variables

Independent Variables	Unstandardized Coefficient		Standardized Coefficient	t	p-value	Collinearity Statistics	
	B	SE.				Beta	Toler.
(Constant)	1.902	.077		24.563	.000	1.000	1.000
Personal factors (X ₁)	.115	.030	.197	3.892	.000	.901	1.110
Accessibility (X ₂)	.044	.022	.101	1.985	.048	.901	1.110

* Statistically significant at the level 0.05

From table 1, a preliminary test on the correlation of variables was performed or can be collinearity (Multicollinearity) by with Tolerance and VIF statistics in order to check for correlation and variance problems of the independent variables, it was found that the Tolerance is greater than 0.1 and the VIF is less than 10 indicated that there was no problem of collinearity. Therefore, multiple regression analysis can be performed by using the Stepwise command. In the Stepwise command, the researcher put all the dependent variables in order of conceptual framework of the research. The result was found out that personal factors and accessibility were statistically significant at the level 0.05.

Which can be forecast the raw score as follows:

- Equation in raw score format

$$Y = 1.902 + .115 (X_1) + .044 (X_2)$$

- Equation in hypothetical score format

$$Z = .197 (Z_1) + .101 (Z_2)$$

6. DISCUSSION

It can be seen that there are not many studies focusing on the factors affecting people's decisions to use public transportation. In Cambodia, the public transportation is not a very attractive option for people looking to commute daily. This study looks to identify whether gender, age and other personal factors would affect the decision to use public transportation. The results stated in the previous chapter indicate that gender does not play a major role in people decision to use public transportation. However, age and personal social-economic status seem to play a part in people decision.

Contrary to hypothesized association, personal factors seem to have little impact on the decision to use public transportation. What surprising in this study is that the outside factors play a major role when it comes to choosing public transportation as an option to commute daily. The results indicate that the lack of advertising and promotion is a major factor that people do not use public transportation. It is a logical response considering the Cambodian culture. Public transportation is a new concept in Cambodia and Cambodian people need time to get fully accustom to it. If there is not enough promotion and advertisement, the public would not be aware of the benefits of public transportation.

It can also be seen that cleanliness is a major factor when people consider using public transportation. The result shows that people are more likely to use public transportation if it is clean and safe which aligns with the 2017 Glasgow Subway Passenger Survey. This makes perfect sense as people are much more aware of the sanitary practices and the danger of being in unsanitary places. The Covid-19 pandemic is also a major reason why people would be more careful when being outside.

The study also demonstrates a correlation between the accessibility and the willingness to use public transportation. People agree that if the public transport is near

and convenient for them, they are more likely to use it. As buses were only introduced in Cambodia not long ago, it is common that the bus routes are very limited as they only revolve around the central part of the city. These results build on existing evidence of Woldeamanuel and Cyganski (2011) that states ease of access is one of the most influential factors in people's confidence, loyalty and willingness to use public transport.

7. CONCLUSION

The thematic examine factors affecting Cambodian consumers' decision to use public transportation services set out to gain a better understanding of what are the factors affecting Cambodian consumers' decision to use public transportation services. After conducting this research, the result answers the research question. With the increase or develop of technology advance in the present time, public transportation had played a significant role in the developing and developed world. When people use public transportation, their decisions are affected by various factors. Those main influence factors could vary from risk and convenience.

From research on factors affecting Cambodian consumers' decision to use public transportation services, the researcher has some suggestions for governments or public sectors to be considered for improvement in order to maximize benefits for the society as follows:

- Would appreciate if there are more accessible public transportation (i.e., more bus lines) and encourage to develop the transportation routes in order to make it convenient for passengers. In these cases, the research would like to suggest to the governors whom responsible for public transportation to consider on this factor since in the present time there is a little of bus line.
- Develop different kinds of public transportation modes that our country already has. As Cambodia is a developing country, the citizens would like to suggest the governors to have a look on developing more kinds of public transportation which will be convenience for citizens and provide more benefits for the country, too.

- Establish more contents on social media platform (i.e., Facebook, Line, Instagram, Twitter and so on.) in order to promote more about public transportation in Cambodia. Based on this case, it can help to encourage the citizens to use public transportation rather than their own transportation which can help the economical and environmental benefits of the country.

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