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A STUDY ABOUT THE EFFECTIVENESS OF MOBILE APPLICATION PROVIDED BY RAPID KL IN KLANG VALLEY

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Abstract

Malaysian economy has seen quite a boom in the last decade, which has affected in many areas, especially in the transportation sector. Major contributor to this is the tourism industry, followed by the palm oil industry. The most common factors in these two industries are people and the use of transportation, specifically Rapid KL services. Based on the understanding from previous study in this sector it was found that the Greater Kuala Lumpur/ Klang Valley Land Public Transport Master Plan (LPTMP) of conventional bus service timetables with departure times and intermediate timing points are virtually non-existent across the region, wherein if any information were provided, it was mostly insufficient for the users. Thus, adhering to this issue currently, only Rapid KL provides web-based information, and this is only in the form of schematic mapping demonstrating where services operate to, with a brief description of each service number and origin and destination. This service is also available on mobile application (App). The aim of this project was to understand and study the effectiveness of the mobile application provided by Rapid KL to the users. A quantitative research approach was used wherein questionnaires consisting three part which is Part 1- Demographic Information, Part 2 – Study Variables and Part 3 – Possible Solutions which was distributed by using convenience and snowball sampling method. The result form the first two parts showed that most of the respondent's requirements are not same with the features offered by Rapid KL through their mobile applications and it did not meet the user's desirable needs. While analysing the third part, it was observed that the feedback for possible solution has a stronger agreement. Thus, Rapid KL can take this information into consideration for the future improvement of the mobile application service.

1.0 Introduction

The augmented population as well as urbanization has contributed to the growth of movement in Malaysia. Thus, cosmopolitan city such as Kuala Lumpur/ Klang valley commonly face road congestion at the intense level. The Malaysia Automotive Association

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(MAA) has released Malaysian vehicle registration data up to June 30, 2017 which showed a total number of vehicles on the roads standing at 28,181,203 units which equal to 0.88 vehicles for every person in the country. Therefore, the Selangor State government has outlined a few effective projects to aid in easing the traffic by providing a quality transportation network to support its commuters. In line to this, Selangor State government has launched a real-time bus tracking app in 2014 called the Selangor Intelligent Transport System (SITS). It is a significant platform where the use of technology embedded to enable and provide sufficient information to the user on the bus services. Rapid Bus Sdn Bhd being the largest bus operator in Malaysia, operating especially in urban areas of Klang Valley, Penang & Kuantan has developed mobile application with the cooperation of other transportation company in order to provide seamless transportation network where it enables the commuters on the real-time information of its service. However, the information provided is mostly insufficient for the users, as currently, the web-based and mobile application information adheres only in the form of schematic mapping which demonstrates the operational services with a brief description of each service number, origin and destination. Hence, the current study is carried out to determine, and analyse the effectiveness of the mobile applications by its users.

A study conducted by Abdul Aziz and Rohaya in their journal ' Rapid KL Bus Service in City Centre, Kuala Lumpur, Malaysia: An Epitome of Good services?' Found that there are about 5 main factors faced by the passengers that lead to customer dissatisfaction to the service provided. The factors are inconsistent service frequency, insufficient couch capacity, poor vehicle condition, negative attitude of the drivers and lastly, technical and system failures.

Similarly, Ong Kian Ming, 18 Feb 2018, coined that “Real time data has been already collected by Rapid KL for its buses as well as the LRT and MRT trains. The former information probably useful to public transport users. For LRT and MRT, the waiting lines are much shorter meanwhile with the exception of few public bus stops that have electronic displays, there is typically no information regarding when the next bus will be arriving at most other bus stops”.

On the other hand, the Road engineering association of Malaysia describes that “One problem with bus services is that someone waiting at the bus stop has no information about when the next bus will come. In order to increase bus usage, provision of dynamic information at bus stops can be valuable. This requires buses to be equipped with some location equipment and this also can be used by the operator to control the service to ensure that it is reliable.” So, “In

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common with almost all countries, Malaysia suffers from three main transport problems which one of it is in term of efficiency. This is particularly due to the traffic congestion but also inefficient operation of commercial and public transport services".

Coleman A. O'Flaherty in their book "Transport planning and Traffic engineering" volume 1 stated that "The desirable characteristics of public transport system can be summarized into four aspects which are convenience, image, information and security". Information is vital for the public transport user as well as increasing its usage. There are several significances of this aspect which are the details of service frequencies, times and fares which is by route should readily available, present clearly and kept up-to-date. Every station and stops should have available 'real time' information, giving current information on actual running times and the time of arrival of next vehicle".

Based on the understanding from previous study in this sector it was found that the Greater Kuala Lumpur/ Klang Valley Land Public Transport Master Plan of conventional bus service timetables with departure times and intermediate timing points are virtually non-existent across the region, wherein if any information were provided, it was mostly insufficient for the users. Thus, adhering to this issue currently, only Rapid KL provides web-based information, and this is only in the form of schematic mapping demonstrating where services operate to, with a brief description of each service number and origin and destination. This service is also available on mobile application. Therefore, the current study helps in understanding the user perspective, which would benefit in enhancing the features on the application for its effect use.

2.0 Methods

The methodology in this paper uses a questionnaire to gather data in Malaysia. The aim is to explore the effectiveness of mobile applications provided by Rapid KL in Klang Valley among the users. The questionnaire captured the demographic information of users as well as variables and possible solutions. The statements in the questionnaire follows the 5-point Likert scale to determine if users strongly disagree or agree with the statements. The sampling method followed in the current was snowball sampling method, which is one of the most common sampling methods (Parker, C. et al., 2020).

3.0 RESULTS AND DISCUSSION

Part 1: Demographic information

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This section summarizes the findings from the questionnaires survey conducted among the Rapid KL commuters and a total of 384 respondents participated in the survey. It is essential to understand the relationship in between the age group of commuters and percentage contributes in the use of Rapid KL's Mobile application. The results as can be seen in figure 1 demonstrate two findings. First, the respondent aged from "18 to 24 years old" namely the young adults who commute on their daily basis for classes, work, and for other necessities are the large group of users of the Rapid KL services and; secondly, it also notable that the same aged group of people are might the high users of the Rapid KL mobile app those find it as very useful to plan their journey.

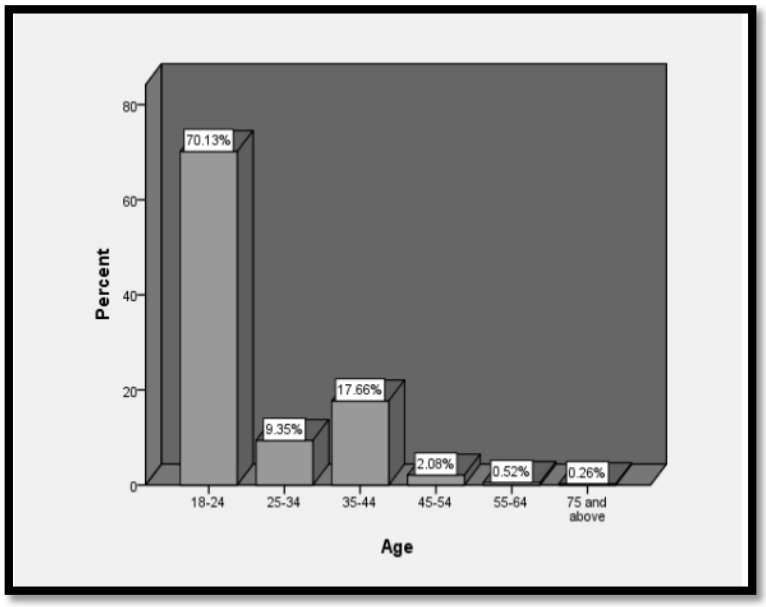

Figure 1: The age division among the respondents

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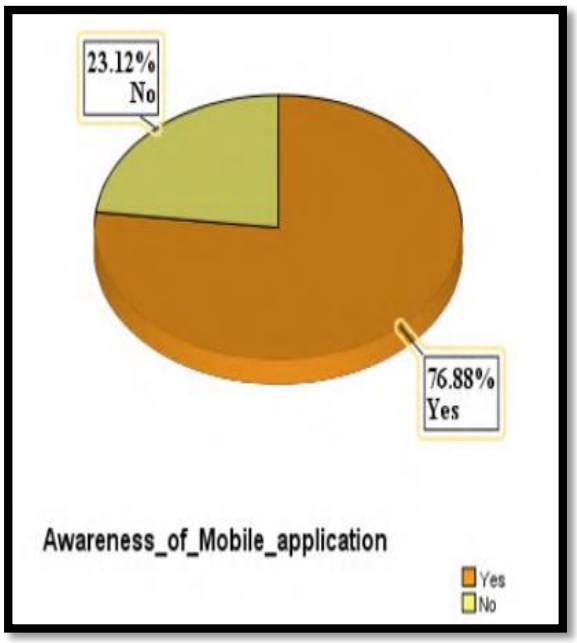

Figure 2: Awareness of the Mobile App of Rapid KL

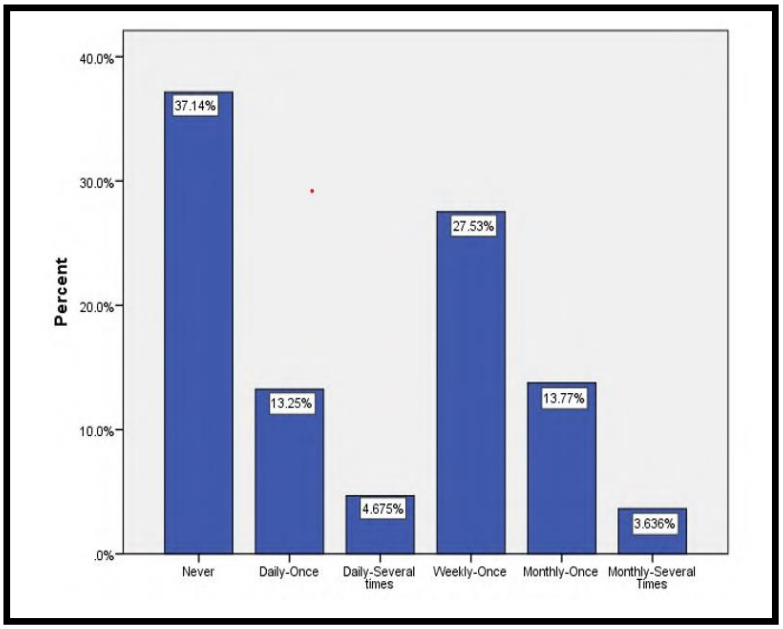

Figure 3: Frequency of using the Rapid KL Mobile App

To give a strong support to the objective of this study, the findings from the figure 2 depicts that 76.88% respondents are aware or know on the existence of the Rapid KL's Mobile App and together, the findings from figure 3 is found evidence that 47.46% of the Rapid KL mobile app users said they are frequently access to the app on daily and weekly basis either once or several times which comprises of 13.25%, 4.68% and 27.53% respectively. However, there is less attractive on the use of the app among the respondents as 37.13% said they 'Never' use the app even though they are realizing the availability of the app.

Part 2: Study the Variables

The Cronbach's Alpha is used to show the questionnaire assessment and evaluations (Tavakol, M. and Dennick, R., 2011). In this study, the Cronbach's Alpha reliability coefficient can show the significant of the perception of the Rapid KL bus services users. The distribution of the Cronbach's Alpha for all four variables ranged between 0.78 and 0.89 which prove that the level of reliability for the questionnaire is considerable high.

Table 1: Cronbach's Alpha Test on Variables

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Number	Variables	Number of Items	Cronbach's Alpha
1	Bus route	6	0.81
2	Availability of bus plate number	5	0.78
3	Fare	5	0.89
4	Estimate time departure and arrival including possible delays	6	0.87

Descriptive Analysis is conducted to identify the response level of Rapid KL bus users' perceptions towards the features of mobile application that has been studied. There are four variables which are bus route, bus plate number, fare and estimated time departure and arrival including possible delays. The descriptive analysis has been used to determine the mean, median and mode of the data accordingly using Statistical Package for Social Sciences. Likert Scale has been used as an indicator for the questionnaire in this study. The indicators are as follows:

1= Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

The table 2 shows the mean ranges from 3.56 to 4.61 meanwhile the SD is from 0.69 to 1.05 describe that most of the respondents strongly agree that each route of Rapid KL bus need to be included in its mobile application.

Table 2: Descriptive statistics for bus route variable

No	Statements	Mode	Mean	Standard Deviation
1	Do you agree every routes of bus must be shown in the Rapid KL mobile application?	5	4.61	0.69
2	Do you agree each route of Rapid KL bus followed the route assigned by Rapid KL shown in the application?	5	4.27	0.91
3	Do you agree each route shows the correct bus stop and transit along the route shown in the applications?	5	4.17	1.02
4	I can assess each route through the applications without any disruption.	3	3.56	1.05
5	Do you agree that by displaying the Rapid KL bus in the application can help the user plan their journey?	5	4.45	0.85
6	Do you agree that by showing every Rapid KL bus route can improve the effectiveness of the application?	5	4.48	0.81

Based on the table 3, the lowest mean value namely 3.91 and 3.94 shows the users are facing difficulty to get the bus plate number in the Mobile app and Rapid KL should improve the

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app in providing bus plate number details as the high mean value marked when large numbers of respondents agreed to include the bus plate numbers in the Rapid KL mobile app.

Table 3: Descriptive statistics for availability of plate number variable.

No	Statements	Mode	Mean	Standard Deviation
1	Do you agree that each bus shown in the applications must include its plate number?	5	4.3	0.98
2	I can view driver's detail by using plate number for example driver background and offense record.	5	3.91	1.12
3	Bus plate number can link me to track real time location.	5	4.12	1.04
4	Each Rapid KL bus plate number are correctly shown in the application.	5	3.94	0.94
5	Do you agree that by correctly shown Rapid KL bus plate number in the application can help the user identify which bus and route need to be taken?	5	4.5	0.79

The variable fare as shown in table 4 is much concerned factor of the most respondents as the highest mean values that range from 4.24 to 4.72. This has been proved that fare for certain route either by cash and cashless need to be included since it is one of the vital reasons why the users choose to ride Rapid KL bus services than driving their own transport which might cause high fuel cost.

Table 4: Descriptive statistics for fare variable

No	Statements	Mode	Mean	Standard Deviation
1	Do you agree that fare for each group must be shown in the application?	5	4.72	0.63
2	Do you agree that all fares category such as Touch and Go fare and cash must be shown in the application?	5	4.72	0.63
3	Do you agree that customers can access their My Rapid Touch and Go applications properly.	5	4.24	0.94
4	Do you agree that by showing Rapid KL bus service fare may improve the effectiveness of the application?	5	4.66	0.66
5	Do you agree that other payment method also must be shown in the applications for example Electronic Ticket.	5	4.53	0.74

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The estimate time of departure and arrival the Rapid KL buses is the one the key features that need be improved in the Rapid KL mobile app as many of the app users notified high range of mean as shown in the table 5 because the commuters are find the real time of the bus schedule will help them to plan their journey accordingly in order to avoid wasting the waiting time.

Table 5: Descriptive Statistics for estimate time departure and arrival including possible delay variables

No	Statements	Mode	Mean	Standard Deviation
1	Do you agree that estimate time departure for all buses for particular route must be shown in the application?	5	4.55	0.74
2	Do you agree that estimate time arrival for all buses for particular route must be shown in the application?	5	4.56	0.71
3	Do you agree the arrival and departure time shown in the application must be accurately fulfilled?	5	4.5	0.76
4	Possible delays in the applications will appear (if any)	5	4.17	1.03
5	Do you agree that possible delays for Rapid KL bus services for particular route must be shown in order to improve Rapid KL bus services and reducing customer frustration in terms of real time information?	5	4.69	0.66
6	Do you agree that by showing estimate time departure and arrival may benefit the user?	5	4.64	0.79

In a nutshell, this study is conducted to find out the opinion and preferences of the Rapid KL bus users towards the mobile application provided by Rapid KL. All the variables received high scores from the respondents proved that the variables or features in the app are need to be improved to raise the effectiveness of the Rapid KL mobile application uses among the its users.

If Rapid KL is taking consideration to review their mobile application and well-upgrading these four features, it is possible to provide high quality service to the users and ultimately, creating customer loyalty. It also could increase the number of Rapid KL Mobile app users as well as the number of people commuting the public transportation which can reduce the road congestion and carbon emission on environment.

Part 3: Possible solutions

Lastly, there are five possible solutions for Rapid KL to improve its mobile application primarily Technology and Mobile Applications area. All these possible solutions and recommendations discussed below are distributed to the respondents and included via

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questionnaire to study the objectives of this research which is to find out the user opinions based on the possible solutions.

Table 6: Frequency Distribution for Technology and Mobile Application

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
TMA1	F	1	0	63	52	269
	%	0.3	0	16.4	13.5	**69.9**
TMA2	F	1	20	56	71	237
	%	0.3	52.2	14.5	18.4	**61.6**
TMA3	F	1	1	67	97	219
	%	0.3	0.3	17.4	25.2	**56.9**
TMA4	F	1	10	74	66	234
	%	0.3	2.6	19.2	17.1	**60.8**
TMA5	F	1	10	65	62	247
	%	0.3	2.6	16.9	16.1	**64.2**

Based on the findings in table 6, most of the statements were received the highest score with "strongly agree" by the respondents. This shows that the respondents are seeks for a simple mobile application or sounds as 'user-friendly'. This is because most of the mobile application is overwhelming with annoying advertisements. Meantime, the statistics also proved that the users of Rapid KL mobile application also anticipating for safer uses and the programmed features must be meeting the users' requirements namely equipped with faster processing and accurate details during the searching.

4.0 Conclusion

Mobile application is indispensable for everyone now-a-days; therefore, the use of SITS platform plays a significant role in the Rapid KL service as more and more people are using the public transport. In the current study a quantitative study (survey) was conducted to understand the effectiveness of the mobile application provided by the Rapid KL among the users. Based on the result it was observed that most of the respondent's requirements are not same with the features offered by Rapid KL through their mobile applications and it did not meet the user's requirements. While analysing the third part, it was observed that the feedback back for possible solution has a stronger agreement. Therefore, the information

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from the current study can be helpful for Rapid KL in their future consideration on improvement of the mobile application service.

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