

THE FACTORS THAT AFFECT CHOICE OF TRANSPORTATION MODE: CASE STUDY UNIVERSITIMALAYSIA KELANTAN (UMK) STUDENTS

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ABSTRACT

A study was carried out to examine the preferences of UMK students on choosing the type of transportation for their travels in university campus. This study focused on providing the information about the factors that will affect the choice of transportation mode among UMK students. Overall 354 questionnaires were conducted. Consequently, SPSS were used to identify the factors that affect the determination of the choice of transportation mode. Results indicated that travel time, services quality and cost are the main factors that influence choice of transportation among UMK students.

Keywords: Transportation preference; travel time; service quality; cost; safety and security

INTRODUCTION

The transportation mode is very important and it is very useful for movement. It can be seen that transportation has become an integral part of human daily life.

The transportation is a major component in the extensive transport and also in the communications sector. This is because of communication sector will be involve in transportation sector due to it can provide an alternative to physical transport in some instances. In other word, they are complementary to the transport service. Transportation is plays an essential role in the world because it offers an access between spatially separated location which is for the movement of goods or people. On the other hand, an improvement of transportation will help to reduce the generalized costs of travel such as save time and save money. The reduction of cost enables to improve the efficiency and effectiveness in the business sector.

There are a few factors that we focus which can affect the travel choices which are travel time, services quality, cost, security and safety due to students tend considering the in-vehicle travel time such as waiting, transferring need to be essentially more burdensome than in-vehicle travel time, attracting students to public transit in significant numbers requires transit agencies to focus increasingly on improving transit users' experience outside of their vehicles such as short down the waiting time.

According to previous studies, factors that can affect students to choosing the transportation mode are cost of transportation, services quality, travel time, safety. Specifically, researcher wants to study how UMK student's choosing the best transportation mode they use is influenced by cost of transportation, services quality, travel time and safety. Not only that, researcher wants to examine the relationship between the factors influenced and the student's best choice of transportation mode.

1. Research Objective:

1. To examine the relationship between travel time and transportation preference among UMK students.
2. To examine the relationship between service quality and transportation preference among UMK students.
3. To examine the relationship between cost and transportation preference among UMK students.
4. To examine the relationship between safety and security and transportation preference among UMK students.
5. To examine the most influencing factor of transportation preference among UMK students.

2. Literature Review

Most of the people will use public transportation nowadays. (Polat, 2012) argued that "public transport services are important and specific. According to (Matas, 2004), "the public transport environment is interactive and active." It includes a combination of alternative transportation modes; various types of passengers such as UMK students have their different travel purposes, different travel frequencies and different travel times.

Within crowd there are some changes in travel time based on age, gender, geography and family status (Metz, 2008). For example, some poor students, they may take bus or train to go back hometown during semester break. Besides that, for the students that have good family situation they will take flight and willing to pay more money to reduce the travel time to go back hometown.

In the content of (Button, 2010), the summed-up expense of a trip is "explicit as a solitary, generally fiscal, measure consolidating, for the most part in straight frame, the vast significant of the critical yet different cost, which constitute the entire expenses of a trip". This is because of that somewhat costly when a student needs to purchase a ticket to back their hometown or travel such as air ticket.

A good service quality in public transportation mode can change customer selection of transportation mode as they will seek for the best service that they deserve with the price that

they paid. There are still some transit agencies that have an interest in gaining a high service quality level, taking into account passengers priorities and requirements (Bertini & El-Geneidy, 2003).

Another factor that customers choose of the transportation mode is safety and security. Most of the customers want to make sure their traveling in arrive safely. First is crime rate. Transport Users also want to make sure their life is no be threatened because crime rates were higher at the certain area such as bus stops near the alleys (Liggett et al., 2001). According to the Russian Ministry of Emergency, travelling by train is about three times safer than by plane and 10 times safer than by car. However, railways also have been reported many accident in past.

3. Method and Materials

A non-probability convenience sampling was chosen as the sampling design as there is no specific list of respondents that can be established from the population as the sampling frame. A sample could be randomly selected to ensure that every UMK students had same opportunities of being chosen in the sample. The researchers are using questionnaire method to collect data because it is low cost, easy to administer, they are standardized and also free from a few types of error. It is also an efficient method of collecting information from a large number of respondents such as UMK students.

An analysis data collection in this research proposal involves the Quantitative data analysis, descriptive statistics and Pearson’s correlation and linear regression.

4. Findings

Table 4.1: Independent and dependent variables reliability coefficient

FACTORS	NUMBE RS OF ITEMS	RELIABILI TY
Travel time	6	0.697
Service Quality	6	0.717
Cost	6	0.788
Safety	6	0.735
Transportatio n preference	5	0.849

The alpha value of reliability analysis for the dependent variable 0.849 and independent variables are 0.697, 0.717, 0.788, and 0.735 which are all acceptable.

Table 4.2: Relationship between time of travel and transport preference Correlations

		Travel time	Transport preference
Travel time	Pearson Correlation	1	.597**
	Sig. (2-tailed)		.000
	N	354	354
Transport preference	Pearson Correlation	.597**	1
	Sig. (2-tailed)	.000	
	N	354	354

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4.2 indicates the relationship between time of travel and transport preferences among UMK students. Based on the results of the significant value $P < 0.05$; this shows that there is a moderate relationship between transport preferences and time of travel towards the choosing of transportation modes among UMK students. The p value of transport preference is 0.000 which is less than the highly significant level 0.001. Therefore, H1 is accepted.

The positive value of Pearson Correlation 0.597** shows that the relationship between transport preferences and time of travel among UMK students is in positive level. It shows that 5.97% dependent variable (transport preference) is influenced by independent variable (time of travel).

Table 4.3: Relationship between servicequality and transport preference (Correlations)

		Service quality	Transport preference
Service quality	Pearson Correlation	1	.575**
	Sig. (2-tailed)		.000
	N	354	354
Transport preference	Pearson Correlation	.575**	1
	Sig. (2-tailed)	.000	
	N	354	354

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4.3 indicates the relationship between transport preference and service quality. Based on the results of the significant value $P < 0.05$; this shows that there is a relationship between transport preferences and service quality among UMK students. The p value of brand is 0.000 which is less than the highly significant level 0.001. Therefore, H2 is accepted.

The positive value of Pearson Correlation 0.575** shows that the relationship between purchasing behavior towards brand is in positive level. It indicates that 57.5% dependent variable (transport preference) is affected by independent variable (service quality). Thus, the correlation between transport preference and service quality toward choosing of transportation mode among UMK students is highly significant.

Table 4.4: Relationship between cost of travel and transport preference (Correlations)

		Cost	Transport preference
Cost	Pearson Correlation	1	.542**
	Sig. (2-tailed)		.000
	N	354	354
Transport preference	Pearson Correlation	.542**	1
	Sig. (2-tailed)	.000	
	N	354	354

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4.4 indicates the relationship between cost of travel and transport preference. Based on the results of the significant value $P < 0.05$; this shows that there is a relationship between transport preferences and cost of travel towards the choosing of transportation modes among UMK students. The p value of brand is 0.000 which is less than the highly significant level 0.001. Therefore, H3 is accepted.

The positive value of Pearson Correlation 0.542** shows that the relationship between purchasing behavior towards brand is in positive level. It indicates that 54.2% dependent variable (transport preference) is affected by independent variable (cost of travel). Thus, the correlation between transport preference and cost of travel toward choosing of transportation mode among UMK students is highly significant.

Table 4.5: Relationship between safety and security and transport preference (Correlations)

		Safety and security	Transport preference
Safety and security	Pearson Correlation	1	.552**
	Sig. (2-tailed)		.000
	N	354	354
Transport preference	Pearson Correlation	.552**	1
	Sig. (2-tailed)	.000	
	N	354	354

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4.5.4 indicates the relationship between safety and security and transport preference. Based on the results of the significant value $P < 0.05$; this shows that there is a relationship between transport preferences and cost of travel towards the choosing of transportation modes among UMK students. The p value of brand is 0.000 which is less than the highly significant level 0.001. Therefore, H4 is accepted.

The positive value of Pearson Correlation 0.552** shows that the relationship between purchasing behavior towards brandis in positive level. It indicates that 55.2% dependent variable (transport preference) is affected by independent variable (safety and security). Thus, the correlation between transport preference and safety and security toward choosing of transportation mode among UMK students is highly significant.

Table 4.6: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
1 (Constant)	-.566	.207		-2.732	.007
Travel time	.472	.050	.381	9.489	.000
Service Quality	.204	.056	.173	3.646	.000
Cost	.308	.046	.278	6.638	.000
Safety and security	.187	.054	.162	3.467	.001

a. Dependent Variable: transportation preference

The regression between travel time and transportation preference of UMK students is significant at 0.000 ($p < 0.05$). It showed that travel time have high significant relationship with transportation preference among UMK students. The regression between service and transportation preference and regression between cost and transportation preference was both significant at 0.000 ($p < 0.05$). It showed that cost and service have high significant relationship with transportation preference among UMK students.

The regression between safety, security and transportation preference is significant at 0.001. Therefore, from the finding the researcher concludes that travel time, service and cost are the most influencing factor that affects transportation preference among UMK students.

5. Conclusion

5.1 Conclusion and Discussion

The study had addressed the relationship between travel time, service quality, cost, safety, security and UMK student's transportation preference and the dominant factors that influence transportation preference among UMK students. The dimension of factors that influenced transportation preference was travel time, service quality, cost and safety/security. From this analysis, the researcher finds out that all the independent variables have positive relationship towards the consumer purchasing behavior. Based on the analysis, travel time is one of the primary factors that influencing transportation preference among UMK students. Within crowd there are some changes in travel time based on age, gender, geography and family status (Metz, 2005). UMK students are very concern on the travel time and most of them are willing to pay money for a trip for reduce the travel time, which means that changes in the transport system will lead to reduce travel time would increase boon.

Apart from that, through this study the researcher find out that service quality and cost also the main factors that influencing transportation preference among UMK students. Service quality plays an important role in choosing a transportation mode because high quality of product and services able to satisfy UMK students wants and needs. These findings confirms that according to (TTRL & EC 1996) state that improvement in reliability and speed in urban bus services in Britain in the 1970s significantly increased ridership UMK students mostly considered cost as factor in determining the transportation they want to use. The most influencing factor to choose the transportation mode for UMK student is cost of transport because the rate of mean for the cost which is 3.8174 is the highest compare to other factors.

However, through this research the researcher finds out that safety and security are the least factor that influenced transportation preference among UMK students. Although UMK students

will use the transportation mode that is most safety and high security, it's just not enough for them to use the service. Safety and security will not reveal the whole truth about preference of transportation because each of the transportation has their own security and safety issues. According to (RBC, 2010), on July 19, 2010 in India, 60 people were killed and another 170 injured as are sult of head-on collision of two trains in the station Saintia (200 km from Kolkata). Besides that, crime rates were higher at the certain area such as bus stops near the alleys (Liggett et al., 2001) and there are many accidents involve flight in a large media (Slovic,2000) and those with very low probability (Viscusi,1992).

Overall conclusion for this research is that all the independent variables such as travel time, service quality, cost, safety and security have positive relationship with dependent variables which is the transportation preference among UMK students and travel time, service quality and cost are the dominant factors that influence consumer purchasing behavior towards hand phone among UMK students.

5.2 Recommendation

There are few recommendations suggested for future research. The future researchers should focus on the similar study of factors which influencing transportation preference with the extended scope to other universities as well. Comparison with other university or collages might give more ideas and information about this research. Factors also can be varied in the future research. The data and information gathering would be more variety.

In this research, travel time, service quality, cost and safety and security are the factor that will influence the transportation preference of respondents. Respondents have once in a while exact inclinations toward the start of the interaction, also, preference have a tendency to be developed during the interaction (Bettman et al., 1998).

Therefore, user able to change their transportation preference, for example, the preferable travel time. This personalization problem can be addressed by a Recommender System which call PECITAS (Personalized City Transport Advisory System).PECITAS routing algorithm depends on a solitary ideal route calculation for travel systems. The system able to provides to the recommendation of the best route between two arbitrary points in the city to the user to help user know well the situation of the route (Huang, 2007). This able to help user choose the correct transportation mode.

Besides that, future research may use qualitative method or mixed method which combine qualitative with quantitative. Mixed methods research offer for the " chance to recompense for weaknesses of inherent method, take the chance to gain advantage from the strengths of method, and counterbalance inescapable method biases"(Greene, 2007).

Therefore, this method can gather more detailed information of the students about their choice of transportation modes in terms of travel time, service quality, cost, safety and security whether those factors will influence them to make decision towards preference of transportation modes. This is because the interviews may be used to obtain in-depth information from the respondents about choice of transportation modes.

References

- Bertini, R. L., & El-Geneidy, A. (2003). *Using archived data to generate transit performance measures*. Transportation Research Record: Journal of the Transportation Research Board, 1841, 109-119.
- Bettman, J. R., Luce, M. F., & Payne, J. W. (1998). *Constructive consumer choice processes*. Journal of consumer research, 25(3), 187-217.
- Button, K. (2010). *Transport economics: Edward Elgar Publishing*.
- Greene, J. C. (2007). *Mixed methods in social inquiry* (Vol. 9): John Wiley & Sons.
- Huang, R. (2007). *A schedule-based pathfinding algorithm for transit networks using pattern first search*. Geoinformatica, 11(2), 269-285.
- Liggett, R., Loukaitou-Sideris, A., & Iseki, H. (2001). *Bus stop-environment connection: Do characteristics of the built environment correlate with bus stop crime?* Transportation Research Record: Journal of the Transportation Research Board(1760), 20-27.
- Matas, A. (2004). *Demand and revenue implications of an integrated public transport policy: the case of Madrid*. Transport Reviews, 24(2), 195-217.
- Metz, D. (2008). *The myth of travel time saving*. Transport Reviews, 28(3), 321-336.
- Polat, C. (2012). *The demand determinants for urban public transport services: A review of the literature*. Journal of Applied Sciences, 12(12), 1211.
- RBC. (2010, July 19). *Retrieved from Head-on collision of trains in India: 60 dead*: <http://www.rbc.ru/society/19/07/2010/5703dc1a9a79470ab5022d82>
- Slovic, P. E. (2000). *The perception of risk: Earthscan publications*.

Transport and Travel Research Limited., and European Commission. Directorate-General

Transport. 1996. *Transport research. Effectiveness of measures influencing the levels of public transport use in urban areas.* Luxembourg, Lanham, Md.: Office for Official Publications of the European Communities; UNIPUB distributor.

Viscusi, W. K. (1992). *Fatal tradeoffs: Public and private responsibilities for risk: Oxford University Press.*