



The Effects of Moral Norms, Social Norms and Pro-Environmental Attitude on Travel Behavior In Malaysia

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Abstract

Public transportation helps to reduce air pollution that creates negative impacts on work performance, work quality, and productivity. The study investigates the effects of moral norms, social norms, and pro-environmental attitudes on the travel behavior of public transport commuters. A survey was carried in Greater Kuala Lumpur, and a total of 904 usable questionnaires were analyzed using Partial Least Squares. The findings showed that a pro-environmental attitude had a weak relationship to travel behavior, but moral norms played a strong instrumental influence when commuters chose public transport. Recommendation and suggestions provided.

Keywords: Travel Behavior; Moral Norms; Social Norms; Pro-environmental Attitude

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1.0 Introduction

Private transport is the leading cause of air pollution in Kuala Lumpur. In 2018, Kuala Lumpur ranked 126th based on the air quality standard, compared to other cities. Due to urbanization and economic growth, most big cities face massive traffic congestion that reduces productivity and work quality. Major initiatives and campaigns have been carried out to reduce private transports on the road and promote the high usage of public transportation, especially in big cities. Malaysia has launched a Greater Kuala Lumpur/ Klang Valley Land Public Transport Master Plan with few targets such as higher modal share, excellent comfort, convenience, and finally, improving quality of life. Malaysians are inclined towards pro-environmental attitude to have a better quality of life. Public transport is the foremost option for reducing traffic congestion and provides significant environmental advantages that contribute to a better quality of life. The majority of the population in Malaysia prefers private transport as more convenient and heavily depends on a motorized vehicle in their daily life. The campaign of carpool is not well received and practiced by Malaysia. Thus, it failed to reduce the number of private transports on the road. As of December 2019, Malaysia recorded 31.2 million registered motor vehicles, with an average increase of 1 million units annually (Bernama, 2019). A Nielsen survey in 2014 showed that Malaysia has the third-highest per-capita car ownership in the world, with 93 percent of households owning at least one car, and 54 percent owning more than one (Malaysiakini, 2017).

Interestingly, Malaysians portray a healthy pro-environmental attitude toward other things (Ghazali, 2019) but not on a transportation mode choice. Numerous mega-projects to develop a comprehensive public transport system have been carried out in Greater Kuala Lumpur. Public transportation offers economic benefits which are excellent in cost-effective (Choi and Loh, 2013). It provides economic mobility by transporting a large number of passengers compared to single-occupancy private transportation. Public transportation or public transit offers few benefits to money-saving, health, and wellbeing. Studies have shown that public transport usage helps save money, especially on the maintenance of private transportation, and benefits commuters in their health by exercising and relaxing. While

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traveling on public transportation, passengers can relax, read, and reduce stress. However, public transport ridership is still below target compared to other big cities like Singapore and Hong Kong. The awareness and willingness to support the environment by using public transport are still not encouraging. Public transport has been regarded not only to reduce traffic congestion but also to save the environment. In navigating lower public transport ridership, transport authorities are looking into many potential approaches. It is suggested that the willingness and awareness of commuters would ensure long-term support. It is essential to explore Malaysian public transport riders regarding their environmental perspectives toward public transport behavior. The study aims to explore the psychological influence on the travel behavior of public transport riders. Thus, the main objective of this paper is to investigate the effect of pro-environmental attitude, social norms, and morals norms on travel behavior of public transport riders in the Greater Kuala Lumpur. The study adopted the theory of planned behavior as it has been used widely in travel behavior research (Ambak et al. 2016). The research objective. This study's outcome could help relevant parties address the low modal share in Greater Kuala Lumpur by capitalizing on psychological elements and pro-environmental attitudes.

2.0 Literature Review

Few studies on public transport in Malaysia covered on TPB on public buses and employees (Ambak et al. 2015; Madha et al. 2016); gender and transport policies (Ng and Acker, 2018) and mode of choice (Chuen et al. 2014). Also, Borhan et al. (2014) had found out that environmental impact has no significant, positive, and direct effect on behavioral intention. It is undeniable that psychological studies lack in travel behavior research in Malaysia, especially in public transport.

2.1 Travel Behavior

Travel behavior can predict the choice of transportation modes among individuals (Liang et al. 2018). Previous studies have shown that norms, values, beliefs, attitudes, and lifestyles positively influence travel behavior (Etminani-Ghasrodashti & Ardeshiri, 2015). According to Riggs (2017), travel behavior is linked to economic and social factors.

2.3 Pro-environmental Attitude

Commuters' attitude is an essential component of travel behavior research (Parkany, 2005). One of the main conditions for sustainable development is the pro-environmental attitude of as many people on the planet (Pavalache-Iliea & Unianua, 2012). A pro-environmental attitude would help commuters to choose public transportation in the long run.

2.4 Norming

Many studies have shown the significant impact of norming in decision-making (Zhang et al. 2015), especially in environmental psychology. As norming is developed within the person without any force, it is much easier to get voluntary participation on issues that conform to specific standards of society and the environment. Norming is developed through emotions, understandings, and surroundings, shaping an individual's mind and behavior. Norming is one of the essential factors motivating private transport to switch to public transportation and retain regular public transport riders. The feeling of moral obligation usually derived from the self-expectation of specific action in a unique situation is known as personal norms (Fang et al. 2017). Previous studies have shown that norming is one of the main contributors to travel mode changes.

2.4.1 Moral Norms

Moral norms are associated with a personal attitude towards ethical implications. Concerning public transport, moral norms can be implied as passengers' perception of the degree of moral correctness to keep using public transport services (Sumaedi & Yarmen, 2015). It is relating to guilt feelings in doing something. When a person has a strong belief to do well to others, he would willingly take action. Kaiser (2006) found that moral norms are more significant compared to self-interest in the environmental domain. The concern about the environment should also be included in public transport travel behavior as traffic congestion would affect the environment. In the context of public transport, moral norms relate closely to the awareness of the environment and understand the adverse effect of private transport utilization (Cox, 2010). Recently, many studies about pro-environmental behavioral intentions have been focusing on the impact of moral norms (Poškus, 2015; Ru et al. 2018).

2.4.2 Social Norms

Social norms refer to rules and values accepted by a group that influences behavior by socializing with others (Zhang et al. 2015; Fant et al. 2017). It is a valuable tool for behavior change and social impact (Riggs, 2017). Riggs (2016) posits that social norms are useful tools to change travel behaviors, especially concerning the environment.

3.0 Research Methodology

A survey was conducted among public transport users in Kuala Lumpur at ten Light-Rail Train (LRT) stations of Kelana Jaya Lane. A simple random sampling was used to ensure that each potential respondent within the target population stood an equal chance of being included in the sample. The population of Greater Kuala Lumpur as of 2019 stood at 7.780 millions. As suggested by Chuen et al. (2014), the minimum 384 responses are adequate for population sizes of 100 million and below. Therefore, 908 responses collected was adequate. The measurement of instruments was adopted from various authors. Instruments for social norms and moral norms were

taken from Bamberg et al. (2007) and Javid et al. (2013). Instruments for Pro-Environment attitude and travel behavior were adopted from Schneider et al., (2013) and Javid et al. (2013).

The structural modeling model (SEM) technique is a commonly used method to test relationships between constructs based on their assigned indicators (Chin, 1998). Its path models are usually defined using two sets of linear equations known as the measurement and structural models (Henseler et al., 2009). Smart PLS was used to analyze the data.

4.0 Findings

The majority of participants were females (54%), while males represented 46%. Almost 62% of respondents were in the age category of 20 to 29 years old, followed by those below 20 years old (19%), 30-39 years old (12%), and above 40 years old (7%). Most of the respondents possessed a degree (50%) and diploma or certificate (24%). Most of the respondents earned less than RM2, 999 a month (49%), 22% were having a salary between RM3000 – 4,999, and 16% made between RM5000 to 9,999. The majority of respondents (54%) spent less than RM199 monthly for public transport costs, and about 33% paid between RM200 and RM399 a month for transport.

For this study, the research model is assessed using a two-step process: 1) the assessment of the measurement model and 2) the assessment of the structural model. The measurement model is to validate the outer model while the structural model is to measure the inner model. In the measurement model, two tests are required, which are convergent validity and discriminant validity. A measurement model has satisfactory internal consistency reliability when the composite reliability (CR) of each construct exceeds the threshold value of 0.7. The average variance's value was more than 0.5, as suggested by Hair et al. (2017). Table 1 presents the construct reliability and average variance results.

Table 1. The convergent validity

	CR	AVE
Moral Norms	0.880	0.648
ProEnvironment	0.875	0.636
Social Norms	0.909	0.833
Travel Behavior	0.877	0.705

The heterotrait-monotrait ratio of correlation (HTMT) is used to test the discriminant analysis. In examining the discriminant analysis, the heterotrait-monotrait ratio of correlation (HTMT) is highly recommended due to its superior performance compared to the Fornell-Larcker criterion. The threshold limit of 0.80, as suggested by Kline (2011), is adhered to. All the values were lower than the threshold; therefore, it demonstrated adequate discriminant analysis. Table 2 present the discriminant analysis. Thus, the measurement model has been shown sufficient convergent validity. All reliability and validity tests are confirmed, which is an indicator that the measurement model for this study is valid. Therefore, the measurement is fit to be used to estimate the structural model parameters.

Table 2. The Discriminant Analysis

	1	2	3	4
Moral Norms				
ProEnvironment	0.554			
Social Norms	0.674	0.321		
Travel Behavior	0.786	0.426	0.577	

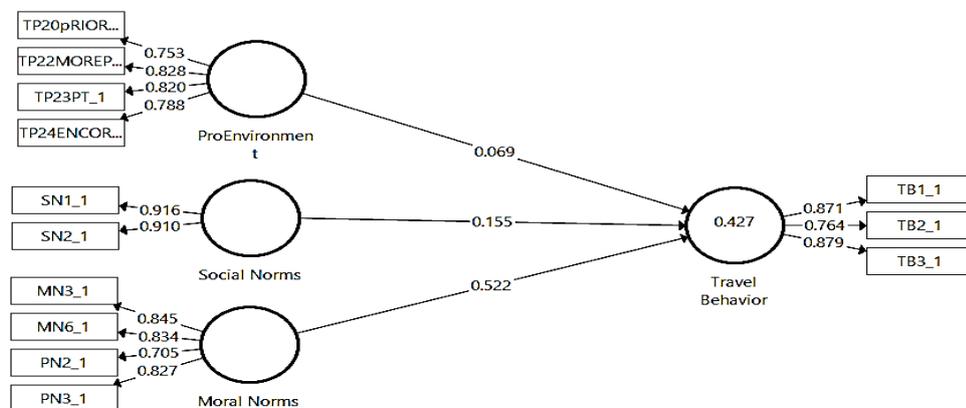


Fig. 1. The Structural Model

Table 3. The Path Analysis

	β	SD	T-Value	P
Moral Norms → Travel Behavior	0.522	0.035	14.767	0.000
ProEnvironmental Attitude → Travel Behavior	0.069	0.033	2.127	0.034
Social Norms → Travel Behavior	0.155	0.034	4.561	0.000

In PLS, a structural model can be evaluated using the coefficient of determination (R^2) and path coefficients. All the independent variables contribute a total of the variance of 42.7% ($R^2=0.427$) in travel behavior. According to Hair et al. (2017), a value of R^2 around 0.67 is considered substantial; values around 0.333 are average, and values of 0.19, and lower are considered weak. In this study, the effect of independent variables to travel behavior is deemed to be moderate. Moral norms indicate a strong relationship to travel behavior ($\beta= 0.522$; $t=14.767$) while pro-environment has the weakest association to travel behavior ($\beta= 0.069$; $t=2.127$). On the same note, social norms showed a moderate effect on travel behavior ($\beta= 0.155$; $t=4.561$). Table 3 shows the details of the path analysis of each variable. Fig 1 presents the structural model of the study.

5.0 Discussion

The study has explored the relationship between pro-environment attitude, moral norms, and social norms on public transport riders' travel behavior. The majority of the public transport riders are in the lower-income bracket group and young. A majority of public transport riders are young but educated; the moral norms showed a strong presence. The influence of social media, peers, and family provides a strong positive impression on public transport and create positive social norms. The awareness of the environment influences their moral norms. Moral norms played an instrumental role in influencing riders to choose public transport. This finding is similar to Sumaedi & Yarmen (2015) found that moral norms positively impact travel behavior in Bogor, Indonesia. While social norms and moral norms are widely researched and explored, a pro-environmental attitude is not getting much attention.

It is crucial to promote a pro-environmental attitude, especially among younger commuters, to ensure long-term public transport (Fang et al. 2018). A study by Lelono et al. (2018) found that a pro-environmental attitude helps passengers be loyal when using public transport. The pro-environmental attitude, social norms, and moral norms have a strong influence on travel behavior in addressing environmental and social problems. The study's findings are an excellent indication to encourage more public transport usage, especially among young riders. It would help the country reduce its traffic congestion, thus improving air quality for the community's betterment (Pronello & Gaborieau, 2018). Previous studies have highlighted that most young people would opt for public transport due to cheaper options. Still, when their economic status improved later on, slowly they will switch to private transport. Therefore, providing excellent comfort and convenience that worth the money would help regular users to stick to their daily transport mode.

6.0 Conclusion

The paper's objective is to explore the relationship between the pro-environment attitude, social norms, and moral norms of public transport riders. This study reinforces the inclusion of psychological factors into travel mode. The findings have shown that pro-environment attitudes towards public transport riders are still shallow but encouraging. Perhaps the reason for choosing public transport over private transport was due to the low cost compared to the intention to support the environment. However, it is a good indication that moral norms posit a healthy relationship to public transport usage. As the majority of public transport are youngsters and educated, these findings showed immense potential for Malaysians to switch to public transportation because they were concerned about the environment. The survey also revealed that most riders (93%) were less than 40 years old, while older passengers were the minority.

The finding is a good indicator that public transport riders are aware of environmental impact even though more aggressive efforts need to be done to encourage higher modal share. As Malaysia is progressing towards a better nation, higher public transport ridership would help the country achieve a sustainable land public transport system. Eventually, further, push for better productivity and economic growth. In reaching a target of 40% public transport modal share, more campaigns and publicity especially relating to the environment, would encourage people to switch from private to public transport by triggering their environmental psychology instinct. Few limitations can be highlighted in this paper. Firstly, this study adopted a longitudinal survey; therefore, limit the exploration of valuable information.

The survey was conducted at stations when commuters are rushing to catch their trains, thus limit a good quality of response. For future research, qualitative research is recommended to explore the commuters' concern and perception of public transport usage in-depth. It is also essential to research private transport commuters and the public on psychological effects for a sustainable transportation system.

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