



Factors affecting the behavioral intention to park legally among urban Malaysian in Kuala Lumpur, Malaysia

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Abstract

One of the main issues that created traffic congestion is the illegal parking activities leading to traffic violation and dissatisfaction on how local authorities are managing the on-street parking in Kuala Lumpur. Current study focused on the relationship between motorist behaviour, safety and security, parking place and facilities, parking fee and intention to park legally. This study also examines the effect of enforcement factors being the mediator for motorist behaviour, safety and security and the intention to park legally. The results of the study were derived from 419 licensed motorists through convenience sampling and the response was analysed using the Statistical Package for Social Sciences (SPSS) and the Smart Partial Least Square software. This study found that there is a significant relationship between motorist behaviour and intention to park legally. In addition, enforcement factors that mediated between motorist behaviour, safety and security and the intention to park legally were also found to be significant. However, other predictors such as safety and security, parking place and parking fee had shown that there is no direct relationship with the intention to park legally. Future study should consider conducting the study on a larger scale at national level.

Keywords: Enforcement factors, Intention to park legally, Motorist behaviour, Parking fee, Parking place and facilities, Safety and security.

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Contribution of this paper to the literature

This study could provide valuable information pertaining to the relationship of various factors contributing to the intention to park legally. The findings can prove to be useful for relevant authorities (policy makers) who could use the information to address those parking issues and to determine the future parking needs.

1. Introduction

With a huge population of 8.420 million recorded in the Kuala Lumpur in 2022 (Dept of Statistic Malaysia, 2020) it has shown that families in the Kuala Lumpur are having cars in excess of its members, leading to inefficiency in road transportation services, troubling issues of parking violation and contributing to the existing traffic congestion (Gautam, 2019). In Litman (2016) Paradigm Shift in Parking Planning, it was concluded that apart from the illegal parking, there can be many type of parking issues that include insufficient or over supply of parking bays, parking rates are either too low or too high, insufficient of user friendly information such as signboards and poor management of services by the managers. Chin et al. (2018) revealed that in the future the peak traffic congestion caused by parking violation and traffic volume could be worse in the Kuala Lumpur with an expectation of 4.5 times more in 2022. Zanjani (2016) also concurred that there was little and limited research focusing on legal parking related issues, and the causes and complications arising from illegal parking were not being looked into in detail in previous associated studies. Furthermore, on-street parking problems are more serious in developing countries and there has been limited research conducted in that context (Biswas, Chandra, & Ghosh, 2017). Previous studies conducted on parking issues were mostly concentrated on the cruising time for parking (Farzam, 2017) parking pricing (Klotz, 2019) enforcement (Nourinejad, 2017) parking competition (Arnott, 2006) and parking for commercial vehicles (Amer & Chow, 2017). Hassan (2016) reveals that motorists' behaviour to initiate parking legally can be determined based on individual wishes and needs, enforcement activities, emotions, influences of groups with similar character, peer pressure or the establishment of habits.

Nonetheless, since there were little effort in demonstrating of a relationship pertaining to motorists attitude and behaviour in parking legally which will benefit the on-street parking environment in term of economic development and quality of life (Redman, Friman, Gärling, & Hartig, 2013) therefore, it is a worthy effort to carry out a study on relationship on motorists behavioural intention, awareness of the law, the concern of safety and security, parking places and violation, unpaid parking fees and the effectiveness of the enforcement effort in this long outstanding on-street parking issues that enable stakeholders to understand and address it effectively. According to Shetty, D'mello, Purushothama, Rent, and Monisha (2017) more than 67 percent respondents in their research had low awareness about road traffic rules while more than 86 percent of the respondents were not obeying the traffic rules and this has contributed significantly by the ignorance, attitude and behaviourism of motorists. Sani, Tabibi, Fardadi, and Stavrinou (2017) highlighted that motorist with emotional dysregulation was significantly related to driving violations whereas difficulty in regulating emotions was related to driving errors. Furthermore, Trógolo, Melchior, and Medrano (2014) revealed that there is no study which is systematically and comprehensively explored the relationship between emotion dysregulation and style in driving or performing a violation act. Apart from that, Liu and Wang (2020) argued that even though effective factors are related with an array of driving behaviour, however, the mechanism on emotion affecting driving behaviour has not been proven. As such, the behavioural aspect of motorists' intention to park legally needs to be further evaluated.

On matters related to safety and security aspects which are of great concern globally and since safety and security form as a basic need for individuals (Maslow, 1987) hence, such expectation must be met before someone's potential can be maximized (Bridgman, Cummings, & Ballard, 2019). Empirical studies have found that the distribution of crime activities were related to the design of street network (Davies & Johnson, 2015) while Kim and Kim (2017) revealed in his findings that other characteristics such as type of businesses, number of workers, ownership status and years of business operation will also contribute to the accident and crime pattern of a particular area. According to Musu-Gillette, Zhang, Wang, Zhang, and Oudekerk (2017) a safe and secured street environment does matter and will influence motorist parking intention and selection of parking areas. While safety and security has been explored in many studies as a safety element and for motorists precautionary measure, however, there seemed to be limitation in examining the relationship of safety and security with behavioural intention to park legally as Spiliopoulou and Antoniou (2012) found that one of motorists' behaviour is the habit of parking as close as possible to their destination regardless of the environment. Therefore, the study of safety behaviour provides a basis for generating predictions regarding the levels at which relationships between safe and secured environment and behavioural intention may be observed.

The evolution of town planning, of which parking place and facilities planning becomes an important component and if it is not addressed with careful planning, it will have a negative impact on urban sprawl (Kimmerle, 2020). The urban parking planning component requires greater attention by the authority on the long term implication and to make available sufficient parking places and with efficient control and management of it will be most practical and ideal. In study by Ibrahim, Nazrul, Borhan, Rahmat, and Atiq (2020) he added that every lawful parking type has three key parts which is quantity, quality and management and Subhadip, Chandra, and Ghosh (2017) further concurred that one of the main criteria for motorists in choosing their destination is the general attractiveness and the convenience of on-street parking and facilities. Apart from this, the minimal cost of parking, widespread social pressure to buy and drive cars, poor quality of the bus system, limited coverage of the mass rail system and high costs of using it, and the relatively low costs of purchasing and driving a car are the causes in providing and ensuring sufficient parking places (Mark, 2020).

However, even though there was a study by Chin et al. (2018) on the need of reasonable time and effort and potentially able to find available parking bay within a certain area, on the contrary, there were other studies that reported a negative correlation between parking places and other factors. McKenzie (2019) revealed that motorists generally perceived that there are not enough parking bays when they could not find it right in front of their destination while there are motorists who chose not to walk beyond 200 meters distance (Baker & Wood, 2010) leading them to park illegally. The habitual behaviour is an implication of the relationship between parking places

and facilities and the intention to park legally and these needs to be further evaluated in order to determine the correlation (Gardner & Rebar, 2019). According to Eggleston (2015) that charging the correct fee is paramount while a wrong pricing does harm, leading motorists searching for a vacant bay, congesting traffic flow, wastage of fuel, and continue to pollute the air (Shoup, 2014). This is evident that the on-street parking fees charged by the local authority are reasonable and acceptable which is consistent with the authority's objective that low fees facilities were made in order not to burden the poor and the needy (Antonio, Jos, & Alexandros, 2019). However, on the contrary, even though the parking fee is considered reasonable, Thanh and Friedrich (2016) revealed that there was 71 percent respondents who does not pay for on-street parking in the city of Hanoi and at the same time in the Kuala Lumpur according to CHKL, 30 percent of the summons issued are related to unpaid parking fee and both statistics were significant on top of losses in authorities revenue from numerous illegal parking situation and faulty parking facilities. Since there was limited literature on in-depth study on the negative correlation, the exploration of the relationship between parking fee and the intention to park legally in this study will enhance the authority's prospect of management and improved revenue from public services.

Meanwhile, with numerous on-street parking related issues, the authorities role in tackling matters pertaining to motorists behaviour, rampant illegal parking situation, insufficient parking bays and unpaid parking fees (Litman, 2016) requires appropriate enforcement which is the key for the effectiveness of on-street parking regulation and parking fee management (Antonio et al., 2019). The enforcement of traffic law will help to achieve higher possible levels of compliance to law and regulation (Alsaad, 2021) and can lead to positive outcomes such as improved traffic flow and revenue, resulting in a more healthy society. Likewise, as in some studies, implementation of effective enforcement has helped in increasing driver compliance (Alsaad, 2021) found that law enforcement does mediate the association between e-government and corruption. However, with the alarming high percentage of respondents with low awareness and disobeying the law (Shetty et al., 2017) and the lack of past studies to investigate these complex issues warrants the need to explore the possibility of how enforcement can be applied to reduce bad motorist behaviour and increase the level of compliance among motorist. Hence, the current study attempted to fill the gaps by examining the role of enforcement as a mediator in the relationship between motorist behaviour and the intention to park legally and between safety and security and the intention to park legally among motorists in the Kuala Lumpur.

In conclusion, the problem statement of present study is surrounded by issues related to the intention to park legally at on-street parking facilities. Based on the current situation, there seems to be inefficiency on the authority's part and the policy maker's role in implementing and ensuring that the on-street parking facilities are efficient and properly managed to encourage parking legally among motorists in the Kuala Lumpur. However, there is no straightforward research setting for this study. The challenges encountered in present study is lack of comprehensive study to support and explain the complexity of the relationships between motorist behaviour, safety and security, parking place and facilities, parking fee and the enforcement factors as mediating variables to the intention to park legally.

2. Literature Review

For this study, nondirectional hypotheses were developed to suggest a relationship or differences as follows.

2.1. Motorist Behaviour and the Intention to Park Legally

As revealed by Subhadip et al. (2017) motorists' preference for on-street parking at times were the motivation in making the trip to the location and in a survey conducted, the "ease to park" is a significant feature contributing to the intention to the destination (McCarthy, 1980). Baker and Wood (2010) reveals that at an average, people are reluctant to walk beyond 200 m radius from their parking bay, thus this is contributing to the behaviour of the motorists. Peprah, Oduro, and Ocloo (2014) put it that the population's culture and behaviour is significant in the increase in violation and accidents such as parking at the wrong side of the road. Ponnambalam (2018) found that the changes in driving behaviour are also related to the workload of the motorist when searching for a suitable parking place. In general, this significantly adds stress onto the motorist while looking out for a parking place and it will trigger changes in driving behaviour and driver's composition (Ponnambalam, 2018). Rayan (2019) mentioned that there are three (3) factors that influence an individual attitude which are views, perceptions, and behaviours and it is likely that the drivers' views about safe driving impact their overall driving behaviour. However, motorist behaviour as one construct in relation to parking legally is still ambiguous and has not been clearly explored by past studies (Ponnambalam, 2018). There is a gap that needs to be investigated in present study. Therefore, the first hypothesis for present study is proposed below as:

H₁: There is a positive relationship between motorist behaviour and the intention to park legally among motorists.

2.2. Safety and Security and the Intention to Park Legally

An investigation on motorists' behaviour found that motorists have a habit to park as close as possible to the destination (Spiliopoulou & Antoniou, 2012). In addition, the pedestrian safety feature encompass the parking environment as National Safety Council (2020) mentioned that the ability of motorist in selecting the right parking place such as picking spots that are well-lit and close to the destination can go a long way toward deterring theft and crime, thus overcomes the safety and security concern. Subhadip et al. (2017) in their study reckoned that despite a number of studies has reported that on-street parking does trigger accident and have safety concern, there were researchers (Peprah et al., 2014) would believe that on-street parking has the capability to provide a safe and secured parking environment. Peprah et al. (2014) concurred that a number of studies has proven that on-street parking was an effective tool that could ensure safety through lowering down vehicle speed. As in Subhadip et al. (2017) findings, it was revealed that on-street parking incorporated with some other traffic calming measures had successfully lowered down 40 percent of untoward accidents. Ishak (2016) concurred that the Malaysian public perception of safety, security and the enforcement efficiency is critical and it is necessary to overcome. In addition, Ibrahim et al. (2020) has revealed a key fact that the trust predictor has an indirect significant positive relationship on users' intention to use park-n-ride parking facilities where the service provider was not able to instill trust in

the motorists. While all things considered, trust in the enforcement and the safety and security of parking and street environment is vital and trust positively influence the behaviour (Ibrahim & Hossam, 2017) nonetheless, motorist will continue pursuing looking out for a safe parking place before considering progressing to higher-level of needs (Musu-Gillette et al., 2017). Therefore, recent studies fail to address issues and the influence of a safe and secured environment on the intention to park legally and since there is a gap to be investigated in this study, thus, the hypothesis can be proposed as follows:

H₂: There is a positive relationship between safety and security and the intention to park legally among motorists.

2.3. Parking Places and Facilities and the Intention to Park Legally

Parking places and facilities are an important part of transportation planning because a typical vehicle spends 95 percent of its lifetime sitting in a parking place (Charles, 2019). Ibrahim and Hossam (2017) added that every lawful parking type has three key parts which is quantity, quality and management. Subhadip et al. (2017) concurred that one of the main criteria for motorists in choosing their destination is the general attractiveness and the easily available on-street parking and facilities. However, there are researchers who hold different ideas on on-street parking places. Adding on, McKenzie (2019) revealed that the general perception of motorists is that there are not enough parking bays when they could not find it right in front of their destination and they may keep circulating and searching for a parking bay for minutes. In contrast and in reality, there are available parking bays, although a person may have to walk a few blocks away from the destination (McKenzie, 2019). According to Parmar, Das, and Dave (2020) a strategically developed and organised system with established parking policies will bring enhancement to individual driving experiences. In summary, no clear relationship being revealed in regards to parking places and facilities with the intention to park legally, thus it remains a gap and the hypothesis developed is as follows:

H₃: There is a positive relationship between parking places and facilities and the intention to park legally among motorists.

2.4. Parking Fee and the Intention to Park Legally

Litman (2020) discussed on obstacles in parking pricing is whenever there are no charges applied for on-street parking, motorists may park freely and illegally or cause traffic congestion or public nuisance. Studies have found that parking without charges can increase the single-driver rate for commute trips by as much as 50 percent (Willson & Shoup, 1990). Litman (2020) emphasized that the implementation of the correct parking fee policy is important for on-street parking places since it is the most visible and convenient for motorists provided it is reasonable and affordable by lower income groups of motorists. Christiansen, Engebretsen, Fearnley, and Usterud Hanssen (2017) supported that parking fee helps secure efficient allocation of limited parking places. Christiansen et al. (2017) also proved that usage of cars for work purposes is lowered when employees are required to pay a daily fixed parking fee whenever they drive to work. In reference to the findings, views and opinion of literatures in regards to on-street parking fees, previous studies were more focus on availability (Chin et al., 2018), affordability (Mei, Feng, Kong, Zhang, & Chen, 2020), elasticity and the management part of it (Nourinejad, 2017) and the impact when it is non-chargeable (Litman, 2020). However, there is limited study on the actual relationship between parking fee and the intention to park legally that shows that the rate of on-street parking fee does give a significant impact on motorist intention, and to address the gap, the hypothesis developed is as follows:

H₄: There is a positive relationship between parking fee and the intention to park legally among motorists.

2.5. Relationship between the Combined Predictors and the Intention to Park Legally

In a nutshell, actions, cognitions and emotions do not run independently of each other. Their proper interaction enables a motorist to perceive the environment around them, listen to their inner wishes and respond appropriately to people in their surroundings (Farnsworth, 2019). The relationship between the four variables namely motorists behaviour, safety and security, parking place and facilities and parking fee has found to be interconnected as in reference to previous study undertaken on travel demand management measures by public and their effectiveness in changing travel behaviour. These factors mainly include intentions and behaviours of the individuals (Muhammad, 2017). However, Lee et al. (2014) mentioned that the elements had direct and indirect effects and could be different due to culture, geographical location and what outcome variable to be investigated. The changed in motorist attitude leading to a changed in travel behaviour is associated with the safety and security situation of parking places as highlighted by Cao, Yang, and Zuo (2016) in relation to, when motorists turns to pedestrians upon parking, safety and security for on-street parking become a significant traffic issue especially when it is opined as unconducive parking place or the available parking bay is far away from the destination (National Safety Council, 2020). Thus, elements of safety and security and appropriate parking place facilities will affect a positive motorist experience (Ahmad, 2016) in which motorists' low confidence level of safety and security and the unattractiveness of the available parking places and facilities does convey a strong message to the motorists in their choice of selection and the impact to their behavioural intention. Honenacker (2019) highlighted that when motorists is experiencing emotional challenges that relates to the three mentioned variables, their changed behavioural intention may choose to park illegally without making parking fee payment. In summary, there is a relationship between the four predictors and the ability to establish this construct will enable the present study to investigate the relationship of combined variables and the intention to park legally. Therefore, the following hypothesis will run a test to analyse the combination of all predictors with the predicted variable.

H₅: There is a positive relationship between motorist behaviour, safety and security, parking place and facilities and parking fee and the intention to park legally among motorists.

2.6. Enforcement Factors and the Intention to Park Legally

Authorities implementing street patrolling has been the essential part of law enforcement (Heley, 2018). Appropriate enforcement is key for the effectiveness of on-street parking regulation and pricing (Antonio et al., 2019). Illegally parked vehicles leads to unfavourable society impact such as reduced traffic speed and loss of revenue (Nourinejad, 2017). If parking demand rises without relevant improvements in enforcement, on-street

parking problems can become extreme too (Barter, 2016). Heley (2018) supported that having sufficient enforcement officers on the ground, it is possible for them to carry out their duties effectively. Heley (2018) added based on his study, the findings revealed that enforcement officers' performance in law enforcement agencies will improve when they have the ability to increase the discretion of the law while Goddard (2020) reaffirmed that people will benefit from the enforcement of laws since it helps to prevent criminals from taking advantage of others. The need for a safe and secured street environment does matter since it does influence motorists who will continue to look out for a safe parking place before considering progressing to higher-level needs (Musu-Gillette et al., 2017). In view of various research findings that has very much focussed on establishing an understanding of the role played by enforcement on top of efforts taken by respective authorities to improve enforcement personnel communication, morale and performances and the improved effectiveness of the enforcement unit, however, more studies are needed to develop a better understanding of the enforcement mediating relationship associated with motorists behaviour, safety and security and their intention to park legally. The mediating function of the enforcement can be a potential mechanism that would cause mediation in the independent variable and the dependent variable which the independent variable can produce changes on a dependent variable, establishing a new relationship. Therefore, with the enforcement factors functioning as a mediator in this study on factors related to motorists and safety and security, thus, the hypothesis can be proposed as follows:

H₆: There is a mediating effect of enforcement in between motorist behaviour and the intention to park legally among motorists.

H₇: There is a mediating effect of enforcement in between safety and security and the intention to park legally among motorists.

2.7. Research Framework

The theoretical framework is the foundation on which the entire empirical research is based. It is a logically formed, defined and explained network of associations among the variables deemed relevant to the problem situation and identified through such processes as interviews, observations and literature review (Sekaran & Bougie, 2014). Based on the issues identified, the following Theoretical Framework Figure 1 meant for this study was made up of independent variables, mediating variable and dependent variable and the dependent variable refers to the primary interest of this study was on "Factors Affecting The Behavioral Intention To Park Legally Among Urban Malaysian In Kuala Lumpur, Malaysia".

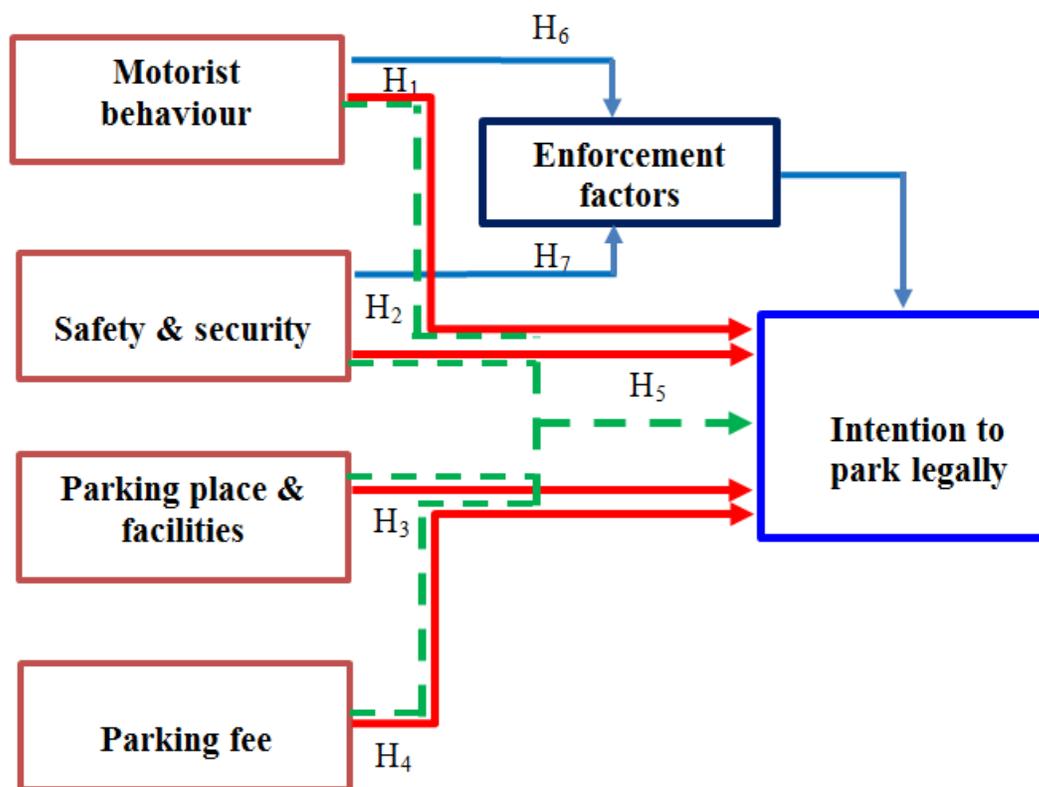


Figure 1. Research framework.

Source: Nguyen et al. (2018); Ahmad (2016) and Reilly (2019).

3. Methodology

For this study, the targeted populations were the individuals who were qualified and were issued with a valid Competent Driving License by Road Transport Department (RTD) Malaysia and they were referred to as motorists that drove regularly within the Kuala Lumpur. The scope of present study was limited to Kuala Lumpur metropolis because of the attentiveness of commercial activities, which resulted in the presence of 662 commercial buildings with a total built-up of close to 14 million square meters (National Property Information Center, 2021). In addition, with the homogeneity of motorists and car park users in our society, the generalization of population can be measured via this sampling to represent the population of interest (Tabachnick & Fidell, 2013). In order to capture the correct respondents, the researcher has sought and had been granted permission to access monthly season pass customers of two (2) established medium size car park operators in the Kuala Lumpur. They were Park Access Sdn. Bhd and Topcode Marketing Sdn Bhd. In combined total, both the company managed an average of 5,000 parkers daily and mostly consisted of monthly season pass customers and a small portion of casual parkers. The main criterion for qualified respondents is that they must be holders of a competent driver license. Generally, a holder of a competent driver license has attained the age of 18 year old and could be a non-Malaysian too (Road

Transport Department, 2019). For this study, the non-probability technique was applied and the selection of respondents was based on convenience sampling at the pre-identified branches that belong to the mentioned car park operators. In the convenience sampling, information or data for the research were gathered from members of the population conveniently accessible to the researcher (Sekaran & Bougie, 2014). However, Sekaran and Bougie (2014) cautioned that convenience sampling is the least reliable of all sampling designs in terms of generalizability. Since there was not much knowledge or information available on the topic under investigation as highlighted in Chapter 2, with this exploratory phase of study where quick and timely information is needed, convenience sampling was a viable alternative (Sekaran & Bougie, 2014).

On the sample size for this study, Krejcie and Morgan (1970) had developed a table that provides a good sample representation of a given population (Sekaran & Bougie, 2014). Based on the table, and with the population (N) centred at 5000, for statistical evaluation, it required a sample size (S) of 357 responses. According to Sekaran and Bougie (2014) a 30 percent of response rate was acceptable, thus there were 1,200 questionnaires disseminated to the targeted respondents and was distributed proportionately based on the parking capacity of each branch. The study design was a descriptive research using the quantitative method and the total useable data for the analysis was 420 samplings. In view that this was a quantitative study, a prepared survey questionnaire was selected as the study instrument. Respondents were asked to indicate their responses on a 5-point Likert scale. The demographic of the respondents were also captured in the same questionnaire. Before the questionnaire was disseminated to the targeted respondents conveniently, it has gone through face validity where three (3) professors from public and private universities and one (1) industry player were consulted before a pilot test with 50 respondents was initiated electronically. Throughout the study, ethics was observed where permission was asked, confidentiality was protected and the study process was carried out in good faith. Finally, with the obtained questionnaire screened and data cleaned, it was analysed using SPSS software for descriptive analysis and the SmartPLS software program for measurement model analysis before presenting it as the study outcome.

4. Findings

4.1. Respondents' Profile

From the questionnaire collected, the overall response show that 2.1 percent of respondents were aged between 18 – 20; 12.1 percent aged between 21 – 25; 10 percent aged between 26 – 30; 10.2 percent aged between 31 – 35; 8.3 percent aged between 36 – 40; 14.5 percent aged between 41 – 45; 12.9 percent aged between 46 – 50; 12.1 percent aged between 51 – 55; and 17.6 percent were above 56 years old. Other than those aged between 18 – 20, the other respondents' age group were considered well balanced for analytical purposes. In terms of gender, female respondents were slightly lower than male and out of the total 420 respondents, 208 were female while there were 212 samples collected from male respondents and the collected data indicates a well-balanced response from respective gender for this study. On the percentage for female and male representation, it was recorded that there were 49.5 percent and 50.5 percent for female and male respondents respectively. Questions related to years of driving experiences were posed to gauge respondent's view on the items asked which could lead to significant differences when a test is initiated. From the data, the result of those who have less than 1 year of driving experience was at 3.3 percent while those with 1 – 5 years of experience were at 11.7 percent. Those armed with 6 – 10 years of experience were at 13.3 percent while 9.8 percent were for those having 11 – 15 years of driving experience while more than 20 years of driving experiences constituted 50.5 percent of the respondents.

Majority of the respondents were also car owners themselves with 91.4 percent out of 420 respondents and it was not surprising since car ownership was not difficult in the Malaysian context. Respondents who do not own a car comprised of 8.6 percent, equivalent to 36 respondents. This could be contributed to the fact that since the survey was carried out in a workplace environment, some respondents could be using vehicle provided by their employer or an individual who drives a family owned vehicle especially those who were categorised as 18 – 20 year old who may not have a financial means to own a car or respondents who are students as revealed in the next descriptive statistics. The majorities of the respondents were employees in the private sector and contributed 51.4 percent to the survey representing 216 respondents. Those who worked in the government sector contributed 6.4 percent with 27 respondents while the student population consisted of 9.5 percent (N=40), business owners consisted of 15.2 percent (N=64) and 17.4 percent made up of others and equivalent to 73 respondents. The categories of respondents were considered as a balance mixed for this study.

The final part of the demographic questionnaire was focused on the understanding of the length or duration spent daily on driving by respondents and it was established that out of the total data collected, 214 respondents formed the majority that drove less than two (2) hours daily which comprised of 51 percent of total respondents. Respondents who drove between 2 – 4 hours daily were the second largest group with 39.8 percent and comprised of 167 respondents. Meanwhile only a small percentage of respondents that were driving between 4 – 6 hours daily (7.4 percent, N=31) while respondents spent time driving more than 6 hours daily were the lowest and only consist of 1.9 percent (N=8) of the total respondents. The results indicated that the majority of the respondents drove between less than 2 hours to 4 hours daily. The response was considered a good indicator which shows that short drive time leads to motorists searching for parking place whenever they need to stop.

Table 1. Descriptive statistics for study variables.

Variables	Code	N	Min.	Max.	Mean	Std. deviation
Intention to park legally	INT	419	1.50	5.00	4.073	0.608
Motorist behaviour	MOF	419	1.00	4.40	2.184	0.703
Safety and security	SSF	419	1.60	5.00	4.042	0.708
Parking place and facilities	PFF	419	1.00	5.00	2.617	0.793
Parking fee	FEE	419	2.00	5.00	3.920	0.629
Enforcement factors	EFF	419	1.20	5.00	3.327	0.640

Note: INT: Intention to park legally; MOF: Motorist behaviour; SSF: Safety and security; PFF: Parking place and facilities; FEE: Parking fee; EFF: Enforcement factors.

The descriptive analysis has calculated and established the statistical values such as Means, Standard Deviation (SD), Minimum (Min) and Maximum (Max) for all the constructs, namely the dependent, independent and the mediating constructs. The details in Table 1 were extracted from SPSS showing the results of the statistical values. As for illustration on Table 1 the overall Mean on variables were ranging between 2.184 and 4.073 with SD of between 0.608 and 0.793. The construct that had the highest Mean score was the intention to park legally at 4.073 while the lowest Mean score pointed to motorist behaviour at 2.184. The second and third highest Mean score of 4.042 and 3.920 were scored by safety and security and parking fee respectively. In addition, the fourth and fifth highest among the 6 constructs were the enforcement factors and parking place, both having the Mean score of 3.327 and 2.617 respectively.

Table 2. Internal consistency smart PLS output.

Variables	Cronbach's alpha	rho_A	Composite reliability	Average variance extracted (AVE)
Intention to park legally	0.706	0.721	0.836	0.631
Motorist behaviour	0.698	0.724	0.810	0.520
Safety and security	0.765	0.775	0.833	0.525
Parking places and facilities	0.853	0.856	0.874	0.542
Parking fee	0.702	0.766	0.815	0.529
Enforcement factors	0.683	0.699	0.808	0.515

For the initial step on the assessment of internal consistency reliability, the purpose is to establish the estimation of the intercorrelation of the observed items in each construct. According to Hair Jr, Sarstedt, Hopkins, and Kuppelwieser (2014) reliability is resulting from the capability of items that generate reliable output while Churchill Jr (1979) refers to it as the capability to test or investigate, or any assessment procedure that generates similar output on repeated measures. In this study, the assessment of reliability is established by using the composite reliability measure calculated using SmartPLS. The SmartPLS output as shown above in Table 2 includes scoring or rating for Cronbach's Alpha, Dijkstra-Henseler's Rho, Composite reliability and Average Variance Extracted (AVE). The composite reliability scoring is between 0.808 to 0.874 and the AVE scoring were above 0.5, thus in general, with Cronbach's Alpha of close to 0.7 or higher, composite reliability estimates meeting its minimum threshold and with good AVE rating, the output suggested that it has the internal consistency reliability.

The discriminant validity is established when the square root of the AVE exceeds the correlations between the measure and all other measures and based on the results generated from SmartPLS, the square root of AVE has exceeded the off-diagonal elements in their respective columns and rows. As in Table 3 and as shown, the bold and highlighted data represent the square roots of the AVE while the non-bolded data represent the intercorrelation value between constructs. Therefore, the result indicated that the Fornell and Larcker's criterion was established.

Table 3. Fornell-larcker discriminant validity.

Variables	Enforcement factors	Intention to park legally	Motorist behaviour	Parking Fee	Parking places and facilities	Safety and security
Enforcement factors	0.717					
Intention to park legally	0.233	0.794				
Motorist behaviour	-0.167	-0.421	0.721			
Parking fee	0.443	0.206	-0.168	0.727		
Parking places and facilities	0.200	0.077	0.120	0.199	0.736	
Safety and security	0.415	0.187	-0.150	0.307	0.031	0.725

From the statistical test initiated on the seven (7) hypothesis using the various techniques in SmartPLS, and as shown in Table 4, three (3) hypotheses were supported while four (4) hypotheses were not supported in this study.

Table 4. Summary of hypothesis testing.

Hypothesis	Hypothesis statement	Findings
H ₁	There is a positive relationship between motorist behaviour and the intention to park legally among motorists.	Supported
H ₂	There is a positive relationship between safety and security and the intention to park legally among motorists.	Not supported
H ₃	There is a positive relationship between parking place and facilities and the intention to park legally among motorists.	Not supported
H ₄	There is a positive relationship between parking fee and the intention to park legally among motorists.	Not supported
H ₅	There is a positive relationship between motorist behaviour, safety and security, parking place and facilities and parking fee and the intention to park legally.	Not supported
H ₆	There is a mediating effect of enforcement in between motorist behaviour and the intention to park legally among motorists.	Supported
H ₇	There is a mediating effect of enforcement in between safety and security and the intention to park legally among motorists.	Supported

5. Discussion and Conclusion

As the conclusion to the purpose of this study in investigating factors affecting the behavioural intention to park legally among urban Malaysian in the Kuala Lumpur, mediated by enforcement, the demographic variables indicates that gender and daily hours of driving on the road does not carry any significant on the intention to park legally while differences in age and years of driving experiences has a significant difference on motorist behaviour, parking places and facilities, parking fees and enforcement factors except on safety and security. The structural assessment for the research framework indicates that the model has adequate prediction relevance for the

constructs through blindfolding procedure using SmartPLS software. To put it briefly, this study's results revealed that the impact of intention to park legally was different. On the direct effect, the relationships between motorist behaviour and intention to park legally was found significant with reasonable statistical results and this shows that motorist behaviour related to attitude and subjective norm is an effective factors for intention to park legally while the other direct effect relationship between predictors and the outcome were found to be insignificant. In subsequent analysis, enforcement factors had demonstrated the mediation effects on motorist behaviour and safety and security with the intention to park legally. In summary, with seven hypotheses formulated from the research framework, three (3) were found supported.

The findings of the study were discussed and suggested that managers incorporate workable plans and strategies in implementing on-street parking services by the authorities. The ability to recognise motorists behaviour and expectation and to provide quality service with added value is key to improvement. Recognising the essential role of the enforcement unit and incorporating a more efficient and effective patrolling will instill greater sensitivity towards the law and confidence on safety and security. The ability to collect motorists feedback periodically through survey and the ability to trace changes from the input on motorists' behaviour and expectation will improve the on-street parking services and situation. Other than managerial implication, other points were raised on theoretical implication, social contribution, policy implication and methodological contribution. While there were also limitations in the study, several thoughts were established as consideration for future study that includes a study to be carried out on a larger scale that involves other cities and an enlarged categories of respondents, motorists consideration on other options such as parking off-street when finding a on-street parking bay is unsuccessful, development of other potential predictors, the possibility that technological development will affect the behavioural intention, in-depth exploration on safety and security impact and consideration to establish a focus group that could give a better insight through discussion and on this note, a few more replication of the current study will strengthen the conclusion found in this study.

References

- Ahmad, S. N. (2016). The role of social facilitation theory on consumer decision making: A conceptual framework. *American Journal of Management*, 16(2), 1-80.
- Alsaad, A. (2021). *E-government and corruption control: The mediating effect of law enforcement inderscience online*. Retrieved from <https://www.inderscienceonline.com/doi/abs/10.1504/EG.2022.119619>
- Amer, A., & Chow, J. Y. J. (2017). A downtown on-street parking model with urban truck delivery behavior. *Transportation Research Part A: Policy and Practice*, 102, 51-67. <https://doi.org/10.1016/j.tra.2016.08.013>
- Antonio, R., Jos, O., & Alexandros, D. (2019). *The environmental and welfare implications of parking policies*. Retrieved from Environment Working Paper No. 145, Organisation for Economic Co-operation and Development.
- Arnott, R. (2006). Spatial competition between parking garages and downtown parking policy. *Transport Policy*, 13(6), 458-469. <https://doi.org/10.1016/j.tranpol.2006.05.003>
- Baker, R. G., & Wood, S. (2010). Towards robust development of retail planning policy: Maintaining the viability and vitality of main street shopping precincts. *Geographical Research*, 48(1), 65-74. <https://doi.org/10.1111/j.1745-5871.2009.00622.x>
- Barter, P. (2016). *On-street parking management: An international toolkit German society for, internationale cooperation GmbH*. Retrieved from <https://www.sutp.org/publications/on-street-parking-managment/>
- Biswas, S., Chandra, S., & Ghosh, I. (2017). Effects of on-street parking in urban context: A critical review. *Transportation in Developing Economies*, 3(1), 1-10. <https://doi.org/10.1007/s40890-017-0040-2>
- Bridgman, T., Cummings, S., & Ballard, J. (2019). Who built maslow's pyramid? A history of the creation of management studies' most famous symbol and its implications for management education. *Academy of Management Learning & Education*, 18(1), 81-98. <https://doi.org/10.5465/amle.2017.0351>
- Cao, Y., Yang, Z. Z., & Zuo, Z. Y. (2016). The effect of curb parking on road capacity and traffic safety. *European Transport Research Review*, 9(1), 4. <https://doi.org/10.1007/s12544-016-0219-3>
- Charles, C. (2019). *How self-driving cars might change city parking IEEE spectrum*. Retrieved from <https://spectrum.ieee.org/cars-that-think/transportation/self-driving/autonomous-parking>
- Chin, V., Jaafar, M., Subudhi, S., Shetomentsev, N., Do, D., & Prawiradinata, I. (2018). *Unlocking cities, the impact of ridesharing across India. The Boston Consulting Group*. Retrieved from https://image-src.bcg.com/BCG-Unlocking-Cities-Ridesharing-India_tcm21-185213.pdf
- Christiansen, P., Engebretsen, Ø., Fearnley, N., & Usterud Hanssen, J. (2017). Parking facilities and the built environment: Impacts on travel behaviour. *Transportation Research Part A: Policy and Practice*, 95, 198-206. <https://doi.org/10.1016/j.tra.2016.10.025>
- Churchill Jr, G. A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*, 16(1), 64-73. <https://doi.org/10.2307/3150876>
- Davies, T., & Johnson, S. D. (2015). Examining the relationship between road structure and burglary risk via quantitative network analysis. *Journal of Quantitative Criminology*, 31(3), 481-507. <https://doi.org/10.1007/s10940-014-9235-4>
- Dept of Statistic Malaysia. (2020). *Kuala Lumpur population*. Retrieved from <https://worldpopulationreview.com/world-cities/kuala-lumpur-population/>
- Eggleston, P. H. (2015). *Participatory action to assess and improve public parking policy: An outcome-based evaluative case study publication No : 3706511*. Doctoral dissertation, Cappella University ProQuest Dissertations and Thesis Global.
- Farnsworth, B. (2019). *Human behavior : The complete pocket guide*. Retrieved from <https://imotions.com/blog/human-behavior/>
- Farzam, S. (2017). *An integrated approach to urban parking modelling and pricing publication No : 27720274*. Doctoral Dissertation, University of Porto ProQuest Dissertations and Thesis Global.
- Gardner, B., & Rebar, A. L. (2019). *Habit formation and behavior change*. New York: Oxford Research Encyclopedia.
- Gautam, S. (2019). *People in Kuala Lumpur waste 25 minutes every day looking for parking*. Retrieved from <https://blog.getmynparking.com/2020/03/04/people-in-kuala-lumpur-waste-25-minutes-every-day-looking-for-parking/>
- Goddard, J. (2020). *Law enforcement and security*. Retrieved from <https://lordslibrary.parliament.uk/law-enforcement-and-security-separation-issues-etc-eu-exit-regulations-2020>
- Hair Jr, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, G. V. (2014). Partial least squares structural equation modeling. *European Business Review*, 26(2), 106-121. <https://doi.org/10.1108/EBR-10-2013-0128>
- Hassan, H. M. (2016). Investigation of the self-reported aberrant driving behavior of young male Saudi drivers: A survey-based study. *Journal of Transportation Safety & Security*, 8(2), 113-128. <https://doi.org/10.1080/19439962.2015.1017782>
- Heley, F. A. (2018). *Officers on patrol: A qualitative examination of patrol officer behaviour and decision making publication No: 10789422*. Doctoral dissertation, North Dakota State University ProQuest Dissertations and Thesis Global.
- Honenacker, T. (2019). *Why parking issues should matter to cities meeting*. Retrieved from <https://meetingoftheminds.org/why-parking-issues-should-matter-to-cities-29897>
- Ibrahim, A., Nazrul, H., Borhan, M. N., Rahmat, R., & Atiq, O. K. (2020). Understanding users' intention to use park-and-ride facilities in Malaysia: The role of trust as a novel construct in the theory of planned behaviour. *Sustainability*, 12(6), 1-14. <https://doi.org/10.3390/su12062484>

- Ibrahim, & Hossam, E.-D. (2017). *Car parking problem in urban areas, causes and solutions*. Paper presented at the 1st International Conference on Towards a Better Quality of Life.
- Ishak, S. (2016). Perceptions of people on police efficiency and crime prevention in urban areas in Malaysia. *Economics World, 4*(5), 243-248. <https://doi.org/10.17265/2328-7144/2016.05.005>
- Kim, S., & Kim, J.-K. (2017). Road safety for an aged society: Compliance with traffic regulations, knowledge about traffic regulations, and risk factors of older drivers. *Transportation Research Record, 2660*(1), 15-21. <https://doi.org/10.3141/2660-03>
- Kimmerle, G. J. (2020). *The ubiquitous parking structure: It's time for a reappraisal publication No: 27672489*. Doctoral Dissertation, University of New Jersey ProQuest Dissertations and Thesis Global.
- Klotz, E. (2019). *The true cost of parking: An exploration of two cities reform efforts publication No : 13878156*. Master's Thesis, Tufts University ProQuest Dissertations and Thesis Global.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607-610. <https://doi.org/10.1177/001316447003000308>
- Lee, C. H., Ko, E., Tikkanen, H., Phan, M. C. T., Aiello, G., Donvito, R., & Raithele, S. (2014). Marketing mix and customer equity of SPA brands: Cross-cultural perspectives. *Journal of Business Research, 67*(10), 2155-2163. <https://doi.org/10.1016/j.jbusres.2014.04.025>
- Litman, T. (2016). *Parking management: Strategies, evaluation and planning*. Retrieved from http://www.vtpi.org/park_man.pdf
- Litman, T. (2020). *Parking pricing implementation guidelines*. Retrieved from <http://www.vtpi.org/parkpricing.pdf>
- Liu, Y., & Wang, X. (2020). The analysis of driver's behavioural tendency under different emotional states based on a Bayesian network. *IEEE Transactions on Affective Computing, 5555*(1), 1-1. <https://doi.org/10.1109/TAFFC.2020.3027720>
- Mark, D. (2020). *Drive less to help solve Bangkok's air pollution Bangkok post*. Retrieved from <https://www.bangkokpost.com/opinion/opinion/2039775/drive-less-to-helpsolve-bangkoks-air-pollution>
- Maslow, A. H. (1987). *Motivation and personality* (3rd ed.). New York: Addison-Wesley.
- McCarthy, P. S. (1980). A study of the importance of generalized attributes in shopping choice behaviour. *Environment and Planning A: Economy and Space, 12*(11), 1269-1286. <https://doi.org/10.1068/a121269>
- McKenzie, D. (2019). *Parking meter international parking and mobility institute*. Retrieved from <https://www.parking-mobility.org/wpcontent/uploads/i-fed-the-meter.pdf>
- Mei, Z., Feng, C., Kong, L., Zhang, L., & Chen, J. (2020). Assessment of different parking pricing strategies: A simulation-based analysis. *Sustainability, 12*(5), 1-13. <https://doi.org/10.3390/su12052056>
- Muhammad, M. K. (2017). *Managing urban transport : Towards sustainability*. University of Malaya: Urban Management.
- Musu-Gillette, L., Zhang, A., Wang, K., Zhang, J., & Oudekerk, B. A. (2017). *Indicators of school crime and safety: 2016. National center for education statistics*. Retrieved from <https://nces.ed.gov>
- National Property Information Center. (2021). *Malaysia's property stock Q1 2020*. Retrieved from <http://napic.jpjh.gov.my/portal/web>
- National Safety Council. (2020). *Tis the season for parking lot injuries*. Retrieved from <https://www.nsc.org/road-safety/safety-topics/distracted-driving/parking-lot-safety>
- Nguyen, Q. A., Hens, L., MacAlister, C., Johnson, L., Lebel, B., Tan, S. B., . . . Lebel, L. (2018). Theory of reasoned action as a framework for communicating climate risk: A case study of schoolchildren in the mekong delta in Vietnam. *Sustainability, 10*(6), 1-14. <https://doi.org/10.3390/su10062019>
- Nourinejad, M. (2017). *Economics of parking: Short, medium, and long-term planning publication No : 10621704*. Doctoral Dissertation, University of Toronto ProQuest Dissertations and Thesis Global.
- Parmar, J., Das, P., & Dave, S. M. (2020). Study on demand and characteristics of parking system in urban areas: A review. *Journal of Traffic and Transportation Engineering English Edition, 7*(1), 111-124. <https://doi.org/10.1016/j.jtte.2019.09.003>
- Peprah, C., Oduro, C. Y., & Ocloo, K. A. (2014). On-street parking and pedestrian safety in the Kumasi metropolis: Issues of culture and attitude. *Developing Country Studies, 4*(20), 85-94.
- Ponnambalam, C. T. (2018). *Effects of searching for street parking on driver behaviour, physiology, and visual attention allocation: An on-road study*. Master's Thesis, University of Toronto, ProQuest Dissertations and Thesis Global.
- Rayan, T. A. (2019). *A comparative study of reported and perceived driving behaviour in relation to road crashes in three different regions of the Kingdom of Saudi Arabia publication No: 13879879*. Doctoral Dissertation, Catholic University of America ProQuest Dissertations and Thesis Global.
- Redman, L., Friman, M., Gärling, T., & Hartig, T. (2013). Quality attributes of public transport that attract car users: A research review. *Transport Policy, 25*, 119-127. <https://doi.org/10.1016/j.tranpol.2012.11.005>
- Reilly, J. (2019). *Law enforcement methods to improve relationships within the illinois communities publication No: 22619086*. Doctoral Dissertation, Walden University ProQuest Dissertations and Thesis Global.
- Road Transport Department. (2019). *Malaysia driver license eligibility age requirements*. Retrieved from http://www.RTD.my/Age_Eligibility_Driving_Test.htm
- Sani, S. R. H., Tabibi, Z., Fadardi, J. S., & Stavrinou, D. (2017). Aggression, emotional self-regulation, attentional bias, and cognitive inhibition predict risky driving behavior. *Accident Analysis & Prevention, 109*, 78-88. <https://doi.org/10.1016/j.aap.2017.10.006>
- Sekaran, U., & Bougie, R. (2014). *Research methods for business: A skill-building approach* (6th ed.). United Kingdom: John Wiley & Sons Ltd.
- Shetty, S. K., D'mello, M., Purushothama, J., Rent, P., & Monisha, V. (2017). Awareness and obedience of road traffic rules among motorists in Mangaluru Suburbs, India. *International Journal of Community Medicine and Public Health, 4*(10), 1-6. <https://doi.org/10.18203/2394-6040.ijcmph20174253>
- Shoup, D. (2014). The high cost of minimum parking requirements parking Issues and policies transport and sustainability. In (Vol. 5, pp. 87-113). Bingley: Emerald Group Publishing Limited.
- Spiliopoulou, C., & Antoniou, C. (2012). Analysis of illegal parking behavior in Greece. *Procedia - Social and Behavioral Sciences, 48*, 1622-1631. <https://doi.org/10.1016/j.sbspro.2012.06.1137>
- Subhadip, B., Chandra, S., & Ghosh, I. (2017). Effects of on-street parking in urban context: A critical review. *Transportation in Developing Economies, 3*(1), 10. <https://doi.org/10.1007/s40890-017-0040-2>
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston, MA: Pearson.
- Thanh, T. T. M., & Friedrich, H. (2016). *Legalizing the illegal parking, a solution for parking scarcity in developing countries*. Paper presented at the World Conference of Transport Research Society.
- Trógolo, M. A., Melchior, F., & Medrano, L. A. (2014). The role of difficulties in emotion regulation on driving behavior. *Journal of Behavior, Health & Social Issues, 6*(1), 107-117. <https://doi.org/10.5460/jbhsi.v6.1.47607>
- Willson, R. W., & Shoup, D. C. (1990). Parking subsidies and travel choices: Assessing the evidence. *Transportation, 17*(2), 141-157. <https://doi.org/10.1007/BF02125333>
- Zanjani, S. D. (2016). *An empirical investigation of factors affecting parking violation frequencies of commercial vehicles : A case study in New York city publication No: 10163860*. Master's Thesis, University at Buffalo ProQuest Dissertations and Thesis Global.