

# The Relationship between Parking Charge, Car Driver and Safety on Intention to Park Lawfully among Urban Malaysian in Kuala Lumpur, Malaysia: A Conceptual Framework

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**Abstract:** The purpose of current study is to establish whether there is a valid relationship between the factors identified in the independent variables (i.e. parking charge factors, car driver factors, and safety factors) with the dependent variable (intention to park lawfully) and to measure the intensity of each independent variable relationship with the dependent variable. This study uses the Theory of Reasoned Action (TRA), Drive Theory of Social Facilitation (DTSF) and Positive Law Theory (PLT) to establish the relationship between parking charge factors, car driver factors, and safety factors with the intention to park lawfully.

**Keywords:** Car driver factors, Safety factors, Parking charge factors, Intention to park lawfully

## 1. INTRODUCTION

The rapid growth and urbanization in the Kuala Lumpur with the current year 2020 population close to 8 million (KLP, 2020) and together with findings showing families having cars in excess of its members has created an inefficiency in public transportation services and this has added-on to the troubling issue of parking violation and contributing to the existing traffic congestion (GMP, 2019). With the continuous growth of new passenger and commercial vehicles registered in Malaysia which has been consistent for the recent 3 years with 2019 recording additional 1% growth compared to 2018 (MAA, 2020). With the advancement of technology, the automobile industry appears to focus on growing the market share among younger car drivers to encourage the purchase of vehicles of various types of capabilities (Tesla, 2016).

On issues surrounding the usage of vehicles, BCG (2017) revealed that the peak congestion in the future caused by parking violation and traffic volume could be worst of in Kuala Lumpur with an expectation of at least 5 times more in 2022 and it is more dismaying when the study by the Centre for Governance and Political Studies (Cent-GPS) found that 87% of Malaysians in the Klang Valley are alone in their vehicles, which is one of the highest single car driver commuter rates in the world (The Star, 2019). The type of parking violations contributed to existing traffic congestion were those that referred to unlawful parked as double parking, parking along the curb as well as on a reserved parking places and within those types, the type with the highest percentage of unlawful parking is on double parking (65.4%) as compared with reserved parking places (26%) (Tsakalidis *et al.*, 2015).

In Litman's (2016) Paradigm Shift in Parking Planning concluded that there can be many type of parking issues that also includes insufficient or over supply, too low or high prices, not enough user information such as signboards or perhaps poor management. On the management, the enforcement unit of CHKL has issued compound or tickets for parking violation and as in 2018, more than 4.0 million compound or tickets worth closed to RM1.0 billion has not been settled (The Sun, 2018). According to Shetty *et al.* (2017) at least 67% respondents in their study had low awareness about

road traffic rules while more than 86% of the respondents are not obeying the traffic rules. The consequences of habitual parking violation and traffic congestion, the car drivers' behaviour and other related factors will impact the society and it shall be the responsibilities of respective authorities to take action in accordance to the approved laws or by-laws (RTA, 1987), otherwise the situation will be difficult to manage when an intention to park lawfully becomes otherwise. What would be the motivation for car drivers to adhere to the law and to park lawfully? Could it be just when there's sufficient and available parking bays it will motivate car driver's intention to park lawfully? Or could there be probably other internal or external factors that motivate car driver's to avoid parking violations?

## **2. PROBLEM STATEMENT**

On-street parking problems are more serious in developing countries and limited study has been conducted so far in their context (Subhadip *et al.*, 2017). Generally, studies conducted on parking issues were mostly concentrated on the cruising time for parking which normally to find solution to decrease the cruising time for parking, aiming at avoiding congestion (Farzam, 2017). In addition, the available published studies to date are mainly on studies on the practicality aspects of parking including parking pricing (charge), cruising for parking, enforcement (Nourinejad, 2017), parking competition (Arnott, 2006), and parking for commercial vehicles (Amer & Chow, 2016).

Zanjani (2016) mentioned that there were also little and limited study focusing on lawful parking related issues and the causes and complication arises from unlawful parking being looked into in details and comprehensively in the previous associated studies. Meanwhile, Ponnambalam (2018) recommended that more study is needed to determine which behavioral changes have a greater effect on the overall road environment and the safety of the car driver. With the absence of a holistic study on the relationship between parking charge, car driver behaviour, and safety on the intention to park lawfully, it has remained a gap in the literature, particularly in the Kuala Lumpur context. Therefore, current study is timely and significant to explore and determine the relationship to strengthen and to enforce the law more effectively. In doing so, it could lead to a more conducive parking environment, reduction of unnecessary traffic congestion and the management of it being more efficient.

## **3. RESEARCH QUESTION**

The following are current study research questions:

RQ<sub>1</sub>: Is there a positive relationship between parking charge and the intention to park lawfully among car drivers?

RQ<sub>2</sub>: Is there a positive relationship between car driver and the intention to park lawfully among car drivers?

RQ<sub>3</sub>: Is there a positive relationship between safety and the intention to park lawfully among car drivers?

## **4. LITERATURE REVIEW**

### **4.1. Parking Charge and the Intention to Park Lawfully**

According to Ng (2014) on-street parking charge if properly instituted it will accomplish three important objectives such as meeting the transportation resources needs in mitigating traffic congestion, reduces potentially market distorting subsidies that have created unnecessary auto travel and to create a revenue stream that can be invested in access enhancements and system, which could assist in lowering parking demand. Litman's (2020) further discussion on obstacles in parking pricing is whenever there is no charges apply for on-street parking, car drivers may park unlawfully or causes 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 % (Willson, 2013).

However, Litman (2020) emphasized that the implementation of the correct parking charge policy is important for on-street parking places since it is the most visible and convenient for car drivers provided it is reasonable and affordable by lower income group of car drivers. As an indicator in the city of Kuala Lumpur where land are scarce and expensive, the parking charge has increased three

folds and it is considered exorbitantly high at the central business district area (SAYS, 2016). Antonio, Jos and Alexandros (2019), mentioned that with busy city areas saturated, there is a strong indication that the on-street parking charge is considered too low in most of the countries. Nonetheless, Antonio et al. (2019) taking from the political economy perspective, mentioned that there will be likely opposition from the local communities whenever the parking charge is reviewed upwards.

At the meantime, Nourinejad (2017) opined that the cost of fixed hourly parking charge can either decrease or increase the demand elasticity. When the parking duration is elastic, the possibilities of higher parking charge is consistent with the demand. At the same time, when it is inelastic, the demand may increase or decrease with the parking charge (Nourinejad, 2017). In contrast, Ng (2014) revealed that there were studies that shows that there will be high decreases in parking demand when parking charge increases. Ng (2014) further mentioned that on-street hourly parking charge if it is imposed without thorough thinking can lead to higher traffic congestion and could crumble society's social welfare. Nonetheless, Nourinejad (2017) concurred that if hourly parking charge imposed without considering its practicality, then it will contribute to traffic congestion. In spite of that, Nourinejad (2017) also opined that if it is managed prudently, it can lead to better traffic management.

SAYS (2016) says that having the varying parking charges can disperse drivers to unpopular parking lots, which makes parking resource used more effectively and emphasized that in charging different parking charge during peak hours is a better option generally on strategies for comprehensive benefits. However, Antonio et al. (2019) opinion that determination of the length of duration allowed for parking is a critical factor and to set levels that is just enough time for car drivers to perform their activities. Thus, the hypothesis can be proposed as follows:

*H<sub>1</sub>: There is a positive relationship between parking charge and the intention to park lawfully among car drivers.*

#### **4.2. Car Driver and the Intention to Park Lawfully**

As revealed by Subhadipet. al, (2017), car drivers' 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. Peprah, Oduro and Ocloo (2014) put it that the population's culture and attitude is significant in the increased in violation and accidents such as parking at the wrong side of the road.

Ponnambalam (2018) deems that the changes in driving behaviour are also related to the workload of the car drivers when searching for a suitable parking place. In general, this significantly adding stress onto the car drivers while looking out for a parking place and it will trigger changes in driving behaviour and driver's composition (Ponnambalam, 2018). Adding on, there were also numerous studies that had shown that car drivers' behaviour to initiate parking lawfully or vice-versa can be determined based on individual wishes and needs, enforcement activities, emotions, influences of group with similar character, peer pressure or the establishment of habits.

On the other hand, 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 car drivers' views about safe driving impact their overall driving behaviour. From the behavioural angle, according to Bingham, Simons-Morton, Pradhan, Li, Almani, Falk, & Albert (2016), peer pressure have influenced teenage car drivers to perform or not to perform certain driving practices and Hassan (2016) concluded that the influence and attraction to misbehaviour by another party had an exceptional impact on teenage car drivers in not abiding to traffic rules.

Wang (2019) further emphasised that with constants changes in authority's parking policies, it is important for the policymakers and authorities to understand car drivers' parking behaviour and their potential impacts and associated consequences on the social welfare and transportation system. While car drivers often use emotions to make decisions, sometimes when it is appropriate to do so and other times when it is not (Sani *et al.*, (2017) added that car drivers with emotional dysregulation was significantly related to driving violations whereas difficulty in regulating emotions was related to driving errors. However to the best knowledge of Mario, Franco and Leonardo (2014) there is no

study which is systematically and comprehensively explored the relationship between emotion dysregulation and style in driving or performing a violation act.

Liu, R. (2017) further mentioned that even though effective factors are related with an array of driving behaviours, however, the mechanism on emotion affecting driving behaviours has not been proven. It has been widely anticipated that emotions are not the appealing forces that lead to an extensive impact on behaviour but rather that human beings can regulate their emotions leading to some form of engagement in emotion regulation regularly (Davidson, 1998 as cited in Mario *et al.*, 2014). Therefore, the hypothesis can be proposed as follows:

*H<sub>2</sub>: There is a positive relationship between car driver and the intention to park lawfully among car drivers.*

### **4.3. Safety and the Intention to Park Lawfully**

The safety factors in this study is closely related to accidents happen on the street due to road congestion and causes damages to private or public properties and the wellbeing of the car drivers, either as a car driver or a pedestrian. Accident and crime can happen anytime, anywhere, with full public view and even in some popular or high end neighbourhood (OSAC, 2019). Kim (2017) reaffirmed that busier places would have higher chances for incidents due to higher inflow of people leading to higher probability of more potential offenders and victims. An investigation on car drivers' behaviour found that car drivers have a habit to park as close as possible to the destination regardless whether it is a lawful or an unlawful spot (Subhadip *et al.*, 2017).

However, there were researchers would believe that on-street parking has the capability to provide a safe parking environment which is subject to the existing culture and attitudes of car drivers or pedestrian towards safety (Peprah *et al.*, 2014). In addition, a number of studies have proven that on-street parking was an effective tool that could ensure safety through lowering down vehicle speed (Subhadip *et al.*, 2017).

While street crime perceived as being a social problem, in the parking context where car drivers normally becomes pedestrian, a safe street environment does matter and will influence car driver parking intention and selection of parking areas and prior to moving on further, the car driver will continue to look out for a safe parking place before considering progressing to higher-level of needs (Musu-Gillette, Zhang, Wang, Zhang, & Oudekerk, 2017). However, in NST (2017) reported that the increasing social issues and alarming crime level in Malaysia was due to public's lack of sensitivity to their valuable items thus providing criminals the opportunity to commit crime and this indirectly jeopardises car drivers confidence as pedestrian. Thus, the following hypothesis can be postulated as follows:

*H<sub>3</sub>: There is a positive relationship between safety and the intention to park lawfully among car drivers.*

## **5. RESEARCH HYPOTHESIS**

The following are current study research hypotheses:

**H<sub>1</sub>:** There is a positive relationship between parking charge and the intention to park lawfully among car drivers.

**H<sub>2</sub>:** There is a positive relationship between car driver and the intention to park lawfully among car drivers.

**H<sub>3</sub>:** There is a positive relationship between safety and the intention to park lawfully among car drivers.

## **6. 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 meant for this study is made up independent variables and dependent variable. The

dependent variable refers to the primary interest of this study. Through the analysis of the dependent variable, for example finding what are the variables that influence it, it is possible to find answers to the problems (Sekaran & Bougie, 2014).

It is generally conjectured that an independent variable is one that influences the dependent variable in either a positive or negative way, that is, when the independent variable is present, the dependent variable is also present and with each unit of increase in the independent variable, there is an increase or decrease on the dependent variable (Sekaran & Bougie, 2014). In this study, the independent variables are based on the issues observed in the problem statement that are categorized into three factors, which are the car drivers related factor, safety related factor and parking charge related factor.

The purpose of this study is to establish whether there is a valid relationship between the factors identified in the independent variables with the dependent variable and to gauge the intensity of each independent variable relationship with the dependent variable. This study uses the Theory of Reasoned Action (TRA), Drive Theory of Social Facilitation (DTSF) and Positive Law Theory (PLT) to establish the relationship between car driver factors, safety factors and parking charge factors with the intention to park lawfully. In summary, the framework for the research is as in Figure 1 which has been adapted from researchers such as Nguyen, *et al* (2018), Ahmad(2016) and Reilly (2019).

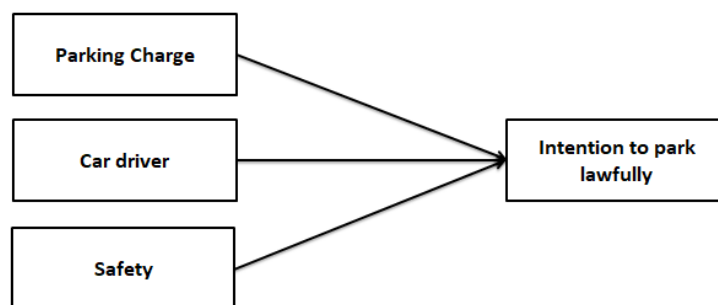


Figure 1: Research framework (Reilly, 2019 & Ahmad, 2016)

## 7. CONCLUSION

This study brought us to a clearer understanding on the behavioural of human kind and the lack on the independent variables of car driver's attitude, safety and parking charge that leads to the dependent variable in explaining factors that are influencing road users behaviour, a thorough research of the same is timely for such situation especially in the Malaysian context. There is numerous parking policies already in place especially in developed cities no matter what are the size of it. Policies will serve as a guide in ensuring traffic system is in place and car drivers are adhering to it and to improve the street driving condition.

The causes and the implication to car drivers, pedestrians and the society at large has not been thoroughly studied, hence, there's no effective solutions have been proposed to solve this problem in the long run. All literatures reviewed in this study prove that previous researches have put efforts in studying many parking related issues and is also beyond Malaysia, but comparatively, very rare studies were focused on factors that will determine an individual to park lawfully. In other words, the general studies on unlawful parking were either brief descriptive analysis or mathematic type of modelling study. There was no research purely focusing on unlawful parking phenomenon and could analyse this phenomenon with a comprehensive perspective.

The results of this study could provide valuable information pertaining to the relationship of various factors contributing to the intention to park lawfully. The findings can prove to be useful for relevant authorities and policy makers who could use the information to address the parking issues and to determine the future parking needs. Another objective of this study is to support car driver's intention to park lawfully which will contribute significantly to issues related to traffic congestion leading to bad air quality, waste of productive time and cost for burning of unnecessary fuel (Weinberger & Millard-Ball, 2017).

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