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FACTORS AFFECTING THE PARKING PROBLEM AT SEKSYEN 9, SHAH ALAM, SELANGOR.

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Abstract:

Car parking is viewed as a classic urban problem and getting worse by the day in Malaysia. It seems out of control when cities expand into townships. Parking problems can cause traffic congestion and obstruction as well as road bully incidents. The objective of this study is to determine the factors affecting parking problems at Seksyen 9, Shah Alam, Selangor. Such a study is important and timely especially in urban environments of new emerging townships whereby increase in new and inexperienced drivers each day and brisk vehicle sales are the main contributory factors to road congestion. The research was conducted via questionnaire survey related to insufficient parking bay, parking haphazardly, parking patterns, motorists' attitudes, and lack of enforcement, public transport services and safety. The outcomes of the study revealed that insufficient number of parking bays is the most important factor causing parking problems. This is due to the increased affordability to purchase vehicles since cars have become necessities nowadays. A few recommendations are suggested such as reviewing the parking planning policies, improving public transport and providing parking bay special privileges for local workers at the area. Future research should delve into the solutions taken by a few local authorities in Malaysia to solve the parking problems.

Keywords: Parking problem; Motorist; Enforcement; Parking Bays; Factors

1.0 INTRODUCTION

Car parking is viewed as a classic urban problem and seems to be out of control when cities expand into townships. According to Haslinda et al. (2016) the first issue is creation of illegal parking near buildings. The increasing number of vehicles encourages illegal parking space, which evolve to become a culture in Malaysia where motorists park their vehicles for short periods. Motorists park their vehicles whether by blocking other vehicles, or by parking at illegal areas. The second issue is unrestricted enforcement by the authorities leading to the haphazard parking. The drivers are not deterred from illegal parking even after they were issued with compounds by the local authorities due to repeating the same mistake. There is also no heavy legal action imposed. The issue of drivers parking haphazardly in commercial areas is especially problematic where in their mind it is "just for a while" but unwittingly causing traffic congestion. The third issue is the driver's attitude or behavior of refusing to walk to their destination even though the parking bays are located nearby. This problem is very hard to solve as it involves the driver's attitude. Thus, the parking problems create the situation generating inconvenience to other motorists and the public.

2.0 LITERATURE REVIEW

By using theoretical framework, there are seven factors affecting parking problems, which are insufficient parking bays, parking haphazardly, parking pattern, lack of enforcement, behavior of motorists, service of public transport and safety factor.

2.1 Insufficient Parking Bay

The limited number of parking bays is getting worse nowadays (Haslinda et al., 2016; Duvanova et al, 2016). With the prevailing good economic climate and the affordability of the purchasers to buy cars,

there is an increase in car ownership. This is inversely proportioned to the supply of parking space in which the number of parking space gradually decreases as opposed to increasing number of vehicles (Duvanova et al., 2016).

2.2 Parking Haphazardly

Haslinda et al. (2016) reported that it has become a ‘culture’ with the growing number of vehicles in urban areas. With insufficient car parking bays, motorists continue to double or triple park, or parking on pavements and walkaways in public areas in order to take someone’s parking lot. When people come to work for short durations of time, the workers do not park their vehicles at off-street parking. They tend to park at street parking which is illegal parking. Aderamo & Salau (2013) stated that there is no provision of off-street parking in the city. Illegal parking causes traffic congestion, which then leads to delays in travelling thus increasing the travelling cost (Aderamo & Salau, 2013).

2.3 Parking Pattern

In order to provide optimal parking supply, it is important to determine how much parking can be provided at a particular site by the planner. This provides an index or parking ratio to calculate the parking number to be provided in a particular area or location (Aderamo & Salau, 2013). A serious problem is unplanned parking whereby the city does not have any planned parking facilities. That is why vehicle operators stop their vehicles in any place, where they need.

2.4 Lack of Enforcement

The lack of enforcement by the authorities led to the creation of illegal parking (Haslinda et al., 2016). According to the Kuala Lumpur City Council Report, over time, the number of compounds increased drastically. There was a 22% increase in issuance of parking compounds as compared to 2014, which totaled 673,295 compounds issued. Generally, motorists do not have a law abiding mentality. This encourages them to ignore the summonses they were served by the authorities, hence motorists will tend to repeat the same faults. The irregular parking offences that violate the transportation rules will be fined with lower charges. The cost for penalty is quite low and this will give the opportunity to the motorists to ignore the transportation regulations.

2.5 Behavior of Motorist

The issue arises when motorists’ mindset could not be bothered by the other road users. In a typical blocked parking scenario, motorists have to wait until the driver or vehicle owner of the blocking motorist appears. They may be waiting for a while or maybe run into hours. When the car horns start blaring, it will create noise and disturb the public environment. These inconsiderate motorists’ behavior affect the peace of mind of other motorists and create congestion. Not only that, it has become the main factor discouraging others to shop and dine at areas nearest to their residential or work areas thus affecting the retail and commercial activities in the vicinity. Parking behavior affects working hours and entertainment habits (Spiliopoulou & Antoniou, 2012).

2.6 Service of Public Transport

The demand for parking may be reduced by higher provision of public transport such as taxi, bicycle, walking or car-pooling. This is influenced by the density of the buildings. When the density of building is high, then public transport is frequently provided for the people to reach their destinations. This will reduce the walking distances between various destinations (Spiliopoulou & Antoniou, 2012). For most major cities in Malaysia, for example, Johor Bharu, Penang, Kuala Terengganu, Kota Bharu and so on, the choice of transport for residents is limited, and only depends on some types of transport only.

2.7 Safety

According to Abidi et al., (2015), the search for parking space is an ongoing process. The motorist does not like to go further even the parking bays are not further from their destination (Haslinda et al., 2016). The security and safety factors have become major concerns to motorists as well as they mostly parked their vehicles during the day. During the night, the car parking areas were unmanned and underused due to the safety concerns. In other instances, the parking bays that are recognized as not friendly to lady drivers, the elderly and the handicapped can be a setback too (Abidi et al., 2015).

3.0 METHODOLOGY

In order to study the factors affecting the parking problems, the quantitative research method was employed. A quantitative research method can be defined as a research that addresses research objectives through empirical assessments involving numerical measurements and analysis approaches. According to Haslinda et al. (2016), 200 respondents will be selected from the general public who had attained the age of 18 years old and are licensed to drive. The questionnaire consists of two sections, Section A and Section B. Section A is on demographic background while Section B consists of questions regarding the factors affecting parking problems which comprises 7 factors with 26 variables using Likert scale type responses of strongly disagree, disagree, agree and strongly agree.

4.0 ANALYSIS AND FINDINGS

The lowest acceptable number of respondents for a pilot study is 30 respondents. Therefore, a sample of 30 respondents is taken to conduct the pilot study. The result of pilot study is as shown in Table 1.

Table 1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.768	.768	26

Lobiondo-Wood and Haber (2013) mentioned that 0.7 and above is the acceptable result indicating reliability. Therefore, the Cronbach's Alpha result of 0.768 above is reliable.

In this research, Factor Analysis was used to determine the factors affecting parking problems at Seksyen 9, Shah Alam. Table 2 displays the results of Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.607
Bartlett's Test of Sphericity	Approx. Chi-Square	1229.851
	df	136
	Sig.	.000

According to Hassan et al. (2012), the result value of Bartlett's test of Sphericity is significant ($p < 0.001$, $p = 0.000$). In addition, the Kaiser-Meyer-Olkin is 0.607 which is greater than 0.6. It is suggested that if the Bartlett's Test of Sphericity is significant, and if the Kaiser-Meyer-Olkin measurement is greater than 0.6, then factorability is assumed (Coakes and Ong, 2011). Thus, based on the result, it is appropriate to proceed with the Factor Analysis to determine the factors affecting parking problems.

Table 3: Rotated Component Matrix

	Component						
	1	2	3	4	5	6	7
(A2)People are afford to purchase the vehicle	.860						

(A3)The increasing of vehicle causing hard to find parking space	.831						
(A4)The parking provided are insufficient in this location	.803						
(A1)The number of vehicle is increasing day by day	.789						
(B2)I find it is save to when i'm park haphazardly		.867					
(B1)I always park haphazardly		.835					
(B3)I park haphazardly for short duration		.741					
(D4)I ignore paying summonses			.895				
(D6)I assume summonses will be cancelled			.841				
(G2)I park nearest to the shop because of the safety element				.899			
(G1)I do not like go further from parking bay				.888			
(F2)It is hard to use public transport to come in this area					.871		
(F1)Not much public transport such as buses and taxi provided in this area					.787		
(C2)The parking pattern is not suitable in this location						.819	
(C1)I park hardly with the parking pattern						.778	
(E3)I like to park free near to the shop							.864
(E4)I hard to find parking during working hour							.576

Seven new factors were successfully constructed using factor analysis and assigned as the factors affecting parking analysis at the case study area. The mean for each factor is added by using the “compute variable” function in the SPSS. The mean for each factor is then calculated as shown in Table 4:

Table 4: Mean of the Factor

Factor	N	Mean
Insufficient parking bay	165	3.2697
Parking Haphazardly	165	2.5333
Lack of Enforcement	165	2.6546
Safety	165	3.1425
The Service of Public Transport	165	2.5000
Parking Pattern	165	2.4272
Behavior of Motorists	165	2.6515

The insufficient parking space (3.2697) falls into the main factors affecting the parking problems at the case study area followed by safety (3.1425), lack of enforcement (2.6546), behavior of motorists (2.6515), parking haphazardly (2.5333), service of public transport (2.5000) and lastly parking pattern (2.4272). All the factors contributing to the parking problems as in the questionnaire were answered by the public who have driver’s license in the case study area.

5.0 CONCLUSION

From the research done, all the seven factors contribute to the parking problems. The insufficient parking bay is the main factor causing the parking problems, while the parking pattern is the least factor that does not affect the problem much. The recommendations suggested to reduce the problems are such as to review and improve the parking planning policies, improve public transport and provide special parking bays for the workers at that area. For future research, it is suggested to study the solutions taken by a few local authorities in Malaysia to solve the parking problems.

REFERENCES

- Abidi, S., Krichen, S., Alba, E., & Molina, J. M. (2015). A new heuristic for solving the parking assignment problem. *Procedia Computer Science*, 60(1), pp. 312–321. <https://doi.org/10.1016/j.procs.2015.08.132>
- Aderamo, A. J., & Salau, K. A. (2013). Parking patterns and problems in developing countries : A case from Ilorin , Nigeria. *African Journal of Engineering Research*, 1(2), pp. 40–48.
- Duvanova, I., Simankina, T., Shevchenko, A., Musorina, T., & Yufereva, A. (2016). Optimize the Use of a Parking Space in a Residential Area. *Procedia Engineering*, 165(921), pp. 1784–1793. <https://doi.org/10.1016/j.proeng.2016.11.923>
- Haslinda, A., Ng, R., & Mohamed, R. (2016). Factors Influencing Haphazard Parking in The Klang Valley, Malaysia. *International Journal of Academic Research in Business and Social Sciences*, 6(9), 159–181. <https://doi.org/10.6007/IJARBS/v6-i9/2303>
- Hassan, S., Ismail, N., Yonsharlinawati, W., Jaafar, W., Ghazali, K., & Budin, K. (2012). Using Factor Analysis on Survey Study of Factors Affecting Students ' Learning Styles, 6(1), 33–40.
- Coakes, J. C. and Ong, C. (2011). SPSS Version 18.0 for Windows Analysis Without Anguish. 1st Edition. Dougall Street, Milton: John Wiley & Sons Australia, Ltd, 2011.
- Spiliopoulou, C., & Antoniou, C. (2012). Analysis of Illegal Parking Behavior in Greece. *Procedia - Social and Behavioral Sciences*, 48, pp.n1622–1631. <https://doi.org/10.1016/j.sbspro.2012.06.1137>