

Beyond the Barrier: Decoding Public Satisfaction of the Snatch-P Automated Parking System in Kangar, Perlis, Malaysia.

Balqis Hanifah Omar¹, Siti Aishah Sha'idan², Nazni Noordin^{3*}

Faculty of Administrative Science and Policy Studies, Universiti Teknologi MARA (UiTM), Kedah, Malaysia

*Corresponding Author

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ABSTRACT

The efficacy of digital public services is increasingly measured by the level of end-user satisfaction. Despite the rapid shift towards digitalized municipal services, user resistance and system efficiency remain critical challenges. This study is conducted to identify the determinants of public users' satisfaction in using the Automated Barrier Parking System implemented by the Kangar Municipal Council (KMC), Perlis, managed by third-party service provider Snatch Park Bizsolutions Sdn. Bhd (known as Snatch-P). A quantitative cross-sectional research design was adopted for this study, in which data were collected using a structured questionnaire from a sample of 367 public users who were selected using a purposive sampling method, aligned with rule of thumb suggested by Krejcie and Morgan. Descriptive statistics, Pearson correlation analysis, and multiple regression analysis with SPSS version 30 were used in this study. The results showed that user-friendly system, payment system, parking space provision, and traffic flow are positively related to public users' level of satisfaction, and user-friendly system is identified as the most dominant factor compared to others. The finding implies that public users' level of satisfaction is largely driven by system friendliness and payment convenience facilitated by provision and optimization of parking space and traffic flow management. This research offers critical insights for local authorities and digital service providers in refining smart parking ecosystems for more effective digital governance.

Keywords: Smart Parking, User Satisfaction, Automated Barrier System, Digital Public Services, Urban Mobility.

INTRODUCTION

Public user satisfaction has traditionally been regarded as one of the key indicators of assessing effectiveness and efficiency of the service delivery of the government. According to the recent literature in the field of the public administration, user satisfaction is the overall evaluative judgment created due to the comparison of the expectations of the users and real service experiences (Morgeson et al., 2021). Satisfaction in the context of digital public services entails the manner in which the public systems can address the functional needs of the users besides affording them convenience, reliability, and value. The rapid urbanisation and rise in the number of vehicles has only made the issue of parking more challenging in most cities, thereby adding to the congestion, long commute and dissatisfaction by citizens. Modern transport literature has shown that poor parking management is one of the contributing factors to the problem of mobility and the poor performance of transport infrastructure systems (Litman, 2021).

To overcome these difficulties, automated and smart parking solutions have become one of the primary choices taken by local governments to enhance the efficiency of their operations and traffic control (Barter, 2020). Automated Barrier Parking Systems are a combination of the technologies like automated entry/exit systems, as well as cash-free payment systems to save time spent on cruising and maximize the movement of vehicles within parking areas (Marsden et al., 2020). Nevertheless, recent research stresses that such systems only become successful in cases when the technology is deployed, and users perceive and experience system use positively

(Juhari et al., 2024). On an automated service setup with little human contact, system usability, convenience of paying, adequacy of parking spaces, and efficiency of traffic flow are highly important factors of user satisfaction (Osman et al., 2023).

The Kangar Municipal Council launched the Automated Barrier Parking System in Perlis, Kangar, as a component of their parking management program, and the operation of the system and payment remittance is handled by a third-party business under the commercial platform Snatch-P. Although the system is designed to modernise parking management, there has been a variation in the level of satisfaction by the public users, which shows that empirical research is required. Even though empirical exploration of smart parking satisfaction has been done in big cities, there is less about smaller cities like Kangar. Thus, the paper aims at discussing the factors influencing the satisfaction levels of the public users of the Automated Barrier Parking System in Kangar, Perlis, in terms of user-friendly systems, payment systems, availability of parking space, and traffic flow.

Research Objectives

The primary objective of this study is to determine the level of public users' satisfaction with the Automated Barrier Parking System implemented in Kangar, Perlis. This study seeks to determine the relationship between a user-friendly system and public users' satisfaction with the Automated Barrier Parking System. The study also aims to examine the relationship between the payment system and public users' satisfaction, as well as the relationship between parking space and public users' satisfaction. Finally, this study aims to analyse the relationship between traffic flow and public users' satisfaction with the Automated Barrier Parking System.

Research Hypotheses

Based on the research objectives, this study hypothesises that a user-friendly system has a significant relationship with public users' satisfaction with the Automated Barrier Parking System. It is further hypothesised that the payment system significantly influences public users' satisfaction with the Automated Barrier Parking System. Besides, this study proposes that parking space has a significant relationship with public users' satisfaction. Finally, it is hypothesised that traffic flow significantly influences public users' satisfaction with the Automated Barrier Parking System.

LITERATURE REVIEW

Public Users' Satisfaction

The user satisfaction is the most significant measure of quality in service provision in the context of the public-service delivery environment, especially regarding automated and technology-based services (Van Ryzin, 2021). The concept of satisfaction in the given scenario of automated barrier parking systems is associated with the perceptions of efficacy of the services based on both the expectations of the quality of service and actual experiences of the users (Parasuraman et al., 1988; Oliver, 2010). The perceived satisfaction is a central measurement that is directly associated with the general quality of services, its effectiveness, and user experience that, in turn, defines the satisfaction and flexibility of the users of the population (Grimmelikhuijsen et al., 2020). Service quality characteristics, like the reliability, responsiveness, assurance, tangibles and empathy being crucial factors towards user satisfaction in automated service-delivery situations (Osman et al., 2023).

User-Friendly System and Public Users' Satisfaction

A user-friendly system is an aspect of a smart parking system that allows the user to quickly and conveniently find, enter and pay by the parking space. It was found that the intuitive system design can help to minimize the time and frustration when trying to find a parking and this will enhance the overall satisfaction (Lim et al., 2021). The ease of use will be especially significant in case of busy times, with smooth running systems that do not delay users contributing to confidence and trust (Zhou and Wang, 2020). Moreover, smart sensors enable the responsive system design, which improves the reliability of the system and user experience as the system directs a user to the parking spots available correctly (Chen et al., 2019). In general terms, convenient parking system is an easy to use system that makes the process easier, less stressful and leads to more usage of the system.

Payment System and Public Users’ Satisfaction

A payment system can be defined as the electronic system that can help users to carry out parking transactions in a secure and efficient way. Convenience and safety of payment play a crucial role in the development of positive user experience and trust to the digital parking services (Laudon and Traver, 2021; Wirtz et al., 2018). Research indicates that offering quick and convenient methods to access and pay, including mobile apps and cashless interactions, contributes to a higher user satisfaction rate by shortening the time spent on the transaction, as well as increasing the friction in the working process (Lee and Chen, 2019). The Automated Barrier Parking System developed in Kangar, Perlis, uses mobile-based payment system using prepaid tokens through the Snatch-P application, which will provide contactless and secure transactions. Nevertheless, the application of single payment system might restrict convenience among some classes of users, thus, the significance of accessibility and reliability of payments in smart parking systems.

Parking Space and Public Users’ Satisfaction

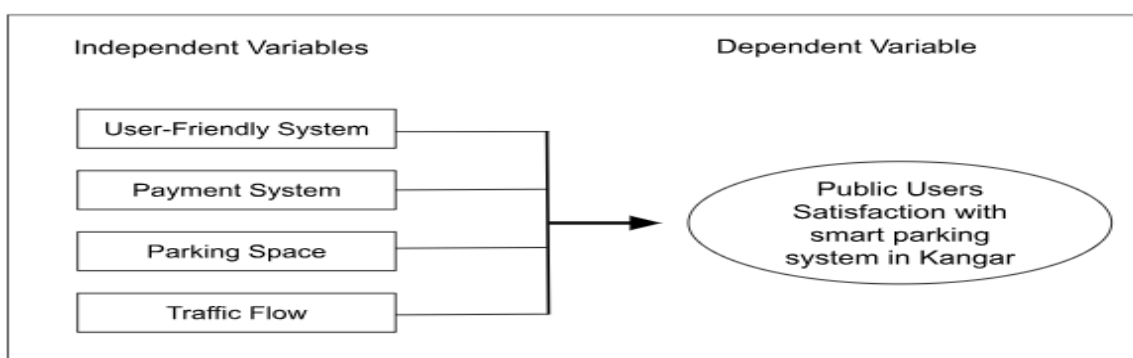
Parking space is defined as the physical aspect of provision and organization of parts of a parking facility used to park cars. The quality of parking space is a critical challenge in smart parking systems because the users can only proceed with their parking process successfully once they have passed the automated entry points. Research indicates that the lack of parking space in most cases causes motorists to move around parking lots, resulting in congestion and frustration among users (Shoup, 2017). Such problem is apparent especially in places like Kangar where growing number of vehicles puts strain on available parking facilities. The satisfaction of users can also decrease due to the lack of parking spaces or their inaccessibility because the automated barrier systems are used as people consider the system ineffective despite its technological improvements (Litman, 2021; Kumar et al., 2024).

Traffic Flow and Public Users’ Satisfaction

Traffic flow in Smart parking is a movement of vehicles in parking zones and roads around parking areas. A good traffic flow can lead to the decrease of congestion, cruising time, and delays, which will enhance the overall user experience (Litman, 2021). Smarter parking systems with real-time navigation and automatic entry-exit systems can also make the circulation of vehicles easier and minimize the bottlenecks (Shoup, 2017). It is possible, however, that poor system integration and the inappropriate physical layouts can cause congestion even with technological adoption (Barter, 2020). Congestions around automated barrier installations have been reported as a problem in Kangar, which reveals the fact that the structural limitations and demand may jeopardize the efficiency of the traffic, which indicates that the proper operation of traffic stays under the condition of the technological quality and the local space environment (New Straits Times, 2025).

CONCEPTUAL FRAMEWORK

Figure 1: Conceptual Framework of Factors Influencing Public User Satisfaction with the Automated Barrier Parking System in Kangar, Perlis.



Based on the reviewed literature, the conceptual framework used to formulate the study has identified user friendly system, payment system, parking space and the flow of traffic as the independent variables that influence

the satisfaction level of the public users of the Automated Barrier Parking System. This framework emphasizes the value of the various factors of system usability, efficiency, infrastructure, and traffic management, in the satisfaction of the publics in the digital public services.

MATERIAL AND METHODS

Research Design : This research used a quantitative cross-sectional design to investigate the determinants of satisfaction of public users with the Automated Barrier Parking System in Kangar, Perlis. A cross-sectional design applied for this study as it sought to investigate the relationships between a number of independent variables and a dependent variable for a particular point in time.

Study Context : The Automated Barrier Parking System highlighted in this case study was introduced in the Kangar Municipal Council (KMC) parking system as a parking management service. Although the Kangar Municipal Council takes on the role as the implementing body, all matters related to both system operations and payment processing on a day-to-day basis are handled on behalf of KMC by a private company, Snatch Park Bizsolutions Sdn. Bhd., which trades as Snatch-P in its system. Users access this system directly through barrier car park gates and cashless payment through a mobile phone platform.

Population : The targeted population was the public users who used the Automated Barrier Parking System in the town of Kangar, Perlis. With information provided through communication with a staff member of the Kangar Municipal Council, it was indicated that the population consisted of 8,000 users who had utilized the Automated Barrier Parking System. The population determined the size of the sample.

Sample Size Determination : A sample size calculation was conducted using the Sample Size Determination Rule of Thumb by Krejcie and Morgan (1970) to ensure that a sufficient sample size for analysis purposes is obtained. A sample size of 367 respondents was required for a population of 8,000 users. The sample size is considered adequate enough to carry out multivariate analysis of data and corresponds to the data that was analyzed using SPSS version 30.

Sampling Technique : The sampling methodology used in this research was criterion purposive sampling, which entails the selection of the participants using criteria set regarding the research. Only users, who used the Automated Barrier Parking System and who had experience on the system were sampled which this guaranteed that the participants had the necessary familiarity to be assessed.

Instrument for Data Collection : The survey tool was a questionnaire, which was structured based on the past research work on smart parking systems. It split its attention on the perceptions of the system-related attributes of participants and the level of their general satisfaction with the automated parking system. All the measurement items were rated on a four-pointer Likert scale with Strongly Disagree (1) and Strongly Agree (4). Using a scale consisting of four points aimed to avoid a large number of neutral answers and to make the participants make more definitive assessments in regard to their experience with the automated parking system.

Data Collection Procedure : The questionnaire forms were administered to selected public users who had made use of the Automated Barrier Parking System in Kangar, and the objective was met with their consent; it was also made clear to them that their answers will remain confidential for research use only, and only completed forms will be considered for analysis.

Data Analysis : Data analysis was done using the Statistical Package for Social Sciences (SPSS) version 30. Mean and standard deviation descriptive statistics were employed to find the level of satisfaction and perception of the public users in respect to the independent variables. Pearson correlation was used to evaluate the magnitude and direction of association between the satisfaction and independent variables. Multiple regression analysis was also done to select the most critical factors that affect the satisfaction in public users with respect to the Automated Barrier Parking System, taking variables user-friendly system, payment system, parking space, and traffic flow as independent variables. Multiple regression tests allow examining the impact of independent variables on the dependent variables simultaneously.

RESULTS

Respondents' Demographic Profile

This subsection will highlight the demographic factors of the respondents who were involved in the study. As stated by Pallant (2020), demographic analysis is vital in explaining the profile of the respondents and in gaining contextual understanding of the participants of the study. A total of 367 survey responses were collected for the study. These represented the active users of the Automated Barrier Parking System in Kangar, Perlis.

Table 1: Demographic Profile of Respondents

Profile	Category	Frequency	Percentage (%)
Gender	Male	183	50.1
	Female	184	49.9
	Total	367	100
Age	19 years and below	38	10.4
	20 years and above	128	34.9
	30 years and above	78	21.3
	40 years and above	68	18.5
	50 years and above	39	10.6
	60 years and above	16	4.4
	Total	367	100
Occupation	Government sector	85	23.3
	Private sector	103	28.1
	Self-employed	49	13.4
	Not working	25	6.8
	Retired	27	7.4
	Housewife	19	5.2
	Student	59	16.1
	Total	367	100
Frequency of ABPS Usage per Week	Daily	73	19.9
	Weekly	106	28.9
	Once in a while	128	34.9
	Monthly	60	16.3

	Total	367	100
Residency Status	Local	183	49.9
	Outsider	139	37.9
	Visitor	45	12.3
	Total	367	100
Duration of ABPS Usage	Less than 6 months	116	31.6
	6–12 months	104	28.3
	13–17 months	113	30.8
	18 months and above	34	9.3
	Total	367	100

Table 1 provides the demographic profile of the respondents involved in this study. It is shown that the number of respondents involved in the survey was 367. These were participants of the Automated Barrier Parking System in Kangar, Perlis. The categories of the respondents, in terms of gender, were well represented. The percentage of males was higher (50.1%), while the percentage of females was (49.9%). This way, the potential for gender bias in the determination of the results in relation to the satisfaction of the public users was avoided. Furthermore, most of the respondents belonged to the working-aged categories. These categories include those aged 20 years old and above (34.9%), 30 years old and above (21.3%), and 40 years old and above (18.5%). This way, the system was used by those in the working age. However, the system was used by other people regardless of their age.

Occupation-wise, the respondents were diverse in terms of their occupation. The highest proportion of users was from the private sector (28.1%) and the government sector (23.3%), followed by students (16.1%), self-employed persons (13.4%), retired persons (7.4%), those not in employment (6.8%), and housewives (5.2%). This shows that the Automated Barrier Parking System serves users who have different occupation profiles. The frequency of ABPS use per week was highest among those who used it occasionally (34.9%), followed by weekly users (28.9%), daily users (19.9%), and those who used it once a month (16.3%). For the residency status, almost half of the total number of the respondent users are local users (49.9%), followed by outsiders (37.9%) and visitors (12.3%), as the Automated Barrier Parking System can be utilized by both residents and non-residents of the locality of the respondent, the location of which is the town of Kangar. Finally, analyzing the length of the usage of the Automated Barrier Parking System, it can be revealed that the respondent users include those who are experienced as well as those who are not so experienced, as 31.6% of the respondent users have been utilizing the Automated Barrier Parking System for less than six months, followed by those who used it between six to 12 months (28.3%), 13 to 17 months (30.8%), and 18 months and above (9.3%).

Descriptive Analysis

This analysis was conducted to address the first research objective (RO1) : To examine the level of public users' satisfaction with the Automated Barrier Parking System.

Descriptive analysis was performed to ascertain the level of satisfaction among public users and the perception of the respondents about the Automated Barrier Parking System implemented in Kangar, Perlis. According to Pallant (2020), descriptive statistics comprising the mean and standard deviation are appropriate to summarise respondents' perceptions in quantitative studies. The interpretation of mean scores in the current study is informed by a four-point Likert rating scale where higher mean value implication is positive for the statements that were measured.

Table 2: Summary of Descriptive Statistics for Public Users' Satisfaction and Independent Variables

Variable	Mean	Standard Deviation	Level
Public Users' Satisfaction	2.46	0.73	Moderate
User-Friendly System	2.49	0.71	Moderate
Payment System	2.51	0.72	Moderate
Parking Space	2.46	0.73	Moderate
Traffic Flow	2.25	0.94	Moderate

The findings showed that the overall mean satisfaction score for public users is 2.46. It means that public users felt moderately satisfied with the Automated Barrier Parking System. According to Pallant (2020), mean scores that fall within the middle range of a Likert scale generally indicate a moderate level of perception or satisfaction among respondents. According to Oliver (1997), moderate satisfaction indicates that users feel that some benefits have been obtained, though further improvement is still needed. This implies that, although the system has functional advantages, it has still failed to gain high overall acceptance. Regarding the independent variables, it is observed that the highest mean score is associated with the payment system with a mean score of 2.51, followed by user-friendly system with a mean score of 2.49, parking space with a mean score of 2.46, and traffic flow with a mean score of 2.25. As suggested by Sekaran and Bougie (2016), lower mean values indicate weaker perceptions towards the construct being measured. The lower mean score, associated with traffic flow, implies that users feel that the traffic flow around the parking space is the least satisfactory feature.

Pearson Correlation Analysis

This analysis was conducted to address the second, third, fourth, and fifth research objectives (RO2,RO3,RO4,RO5) : Examine the relationships between user-friendly system, payment system, parking space, traffic flow, and public users' satisfaction with the Automated Barrier Parking System.

The Pearson correlation analysis was done to investigate the relationship of each independent variable on the satisfaction of public users. According to Cohen (1988), the Pearson correlation coefficients provide information on the strength and direction of linear relationships between continuous variables.

Table 3: Pearson Correlation between Independent Variables and Public Users' Satisfaction

Independent Variable	Correlation Coefficient (r)	Significance (p)	Strength
User-Friendly System	0.825	< 0.001	Strong
Payment System	0.839	< 0.001	Strong
Parking Space	0.837	0.001	Strong
Traffic Flow	0.796	< 0.001	Strong

The findings show that there is a positive and significant correlation of all the independent variables with the satisfaction of public users at the 0.01 significance level. According to the guidelines on correlation coefficient interpretation of Guilford (1956), all the correlation coefficients are included in the range of 0.70 to 0.90, which is a strong positive relationship. The payment system has the highest correlation with the satisfaction of the public users (r = 0.839), user-friendly system (r = 0.825), parking space (r = 0.837), and traffic flow (r = 0.796).

These results indicate that the efficiency of the payment systems, user-friendly system, parking spaces, and traffic flow are closely related with the increased rates of the satisfaction of the public users.

Multiple Regression Analysis

This analysis was conducted to identify the most significant determinants of public users' satisfaction, in line with the overall objective of the study.

A multiple-regression analysis was conducted to determine the effects of the variables on the level of satisfaction of the public users of the Automated Barrier Parking System. As Gujarati and Porter (2009) explain, multiple-regression analysis enables exploration of the independent and combined effects of a number of explanatory variables on a dependent outcome.

Table 4: Multiple Regression Results

Independent Variable	Standardised Beta (β)	t-value	Significance (p)
User-Friendly System	0.289	6.188	< 0.001
Payment System	0.266	5.138	< 0.001
Traffic Flow	0.227	5.304	< 0.001
Parking Space	0.184	3.283	0.001

Model Summary:

- $R^2 = 0.796$
- $F = 352.109$
- $p < 0.001$

The outcome of the regression shows that the general model was statistically significant. In line with Hair et al. (2019), a value of R^2 that is above 0.70 is considered an excellent one. The value of R^2 that is observed, 0.796, therefore suggests that the joint effect of user-friendly system, payment system, parking space and traffic flow explains 79.6 percent of the variance in the satisfaction of the public users.

The user-friendly system was the most significant among the four explanatory variables ($\beta=0.289$), then there is the payment system ($\beta=0.266$), then the traffic flow ($\beta=0.227$) and parking space ($\beta=0.184$). These coefficients indicate that the effect of user-friendliness is more influential on satisfaction compared to parking space.

Summary of Hypothesis Testing

Based on the results of the regression analysis, all hypotheses proposed in this study were supported.

Table 5: Summary of Hypothesis Testing

Hypothesis	Relationship	Result
H1	User-Friendly System \rightarrow Public Users' Satisfaction	Accepted
H2	Payment System \rightarrow Public Users' Satisfaction	Accepted

H3	Parking Space → Public Users' Satisfaction	Accepted
H4	Traffic Flow → Public Users' Satisfaction	Accepted

The acceptance of all hypotheses implies that increased system usability, ease of payment, availability of parking slots, as well as traffic flow, lead to increased levels of satisfaction among public users on the Automated Barrier Parking System.

DISCUSSION

The aim of this research is to identify the factors that influence the level of satisfaction among the public for the Automated Barrier Parking System implemented in Kangar, Perlis. The presentation of the findings for this research will be connected to theories and past research to highlight the implications for the study.

The result of the research shows that the degree of the public users' level of satisfaction with the Automated Barrier Parking System is in the moderate category. This shows that, although the public users appreciate the advantages offered through the utilization of the Automated Barrier Parking System, there is still a gap in the level of performance that meets their expectations to a higher extent. According to more current research on the public services, the state of a system being in the moderate category indicates a point at which the performance of the system succeeds in offering some merits but still needs some enhancement in order to satisfy the expectations of the clients (Van Ryzin, 2021).

Among the independent variables, the user-friendly system emerged as the most significant factor influencing public users' satisfaction. In light of this finding, the role of the usability of the system in the context of automated public services, wherein the users will be dealing with the system rather than the staff, becomes quite relevant. In this digital era, current studies on digital public services have consistently proved that the usability of the system helps to minimize user effort, thereby achieving higher levels of satisfaction among the users (Grimmelikhuisen et al., 2020; Lim et al., 2021). In the context of smart parking, user-friendliness in the design of the system helps to ensure positive user experiences (Cahyani et al., 2024).

The payment system was revealed to be the second most important factor affecting satisfaction. The relevance of this aspect to having a convenient payment system and options in automated parking systems cannot be overemphasized. The efficiency of a secure payment system ensures that a user does not encounter any delay or ambiguity, which in turn affects satisfaction with said system. Contemporary research shows that secure cashless payment systems improve user trust in digital technology acceptance (Laudon & Traver, 2021; Alkenazan et al., 2021).

Traffic flow was also found to influence the satisfaction of the public users, with a significant positive effect. Easy flow of traffic around the parking facility will ensure optimal entry, exit, and minimize waiting time. A study on the transportation system informed the negative impact of inefficient traffic management on the satisfaction of the automated parking system, despite the functionality of the technological aspect (Litman, 2021; Barter, 2020). The result shows the need for the adoption of effective traffic management systems in conjunction with the system's optimisation process at the facility.

Despite scoring the lowest on the scale of influences among the four factors identified, the impact of parking space was nevertheless one of the determinants of satisfaction for public users. This indicates that technological efficiency is not enough where the physical space for parking is not adequate enough to meet the users' requirements. Recently conducted studies on parking in city areas prove the dissatisfaction of users due to low parking space even when automated technologies are available (Shoup, 2017; Kumar et al., 2024).

Regarding service quality factors, overall results are consistent with the SERVQUAL model as much as they highlight service performance and physical facilities together in relation to service delivery and customer satisfaction. It should be noted that in fully automated service contexts like Automated Barrier Parking Systems, some service qualities such as empathy are perceived indirectly since they may not be delivered directly through

human interaction but through various aspects such as ease of use or accessibility. This means that user-centered design serves to represent empathy in fully automated service contexts.

Conclusively, the results of this research show that the satisfaction levels of public users towards the automated parking system are affected by both the system variables as well as the environment. The results have confirmed all the hypotheses tested in this research, which validate that user-friendly system, payment system, parking space, and traffic flow have emerged as crucial factors that influence public user satisfaction with the Automated Barrier Parking System located in Kangar, Perlis. This research could provide key information that can help authorities, as well as third-party vendors, in improving the performance levels of automated parking systems.

Implications Of The Study

The results of this research have several implications for public service, especially in the implementation of automated parking systems. In this regard, it is clear from the results that for successful implementation of automated parking systems in public, it is necessary to give importance to user-friendliness. In this way, improvement in areas related to user-friendliness may result in improving satisfaction levels of public users. Moreover, the importance of effective cashless payment systems in this context again emerges due to its remarkable effect on satisfaction. From the operation perspective, the key takeaways of the findings include the importance of collaboration between the concerned local bodies and the third-party service providers. System monitoring and the resolution of the issues related to the systems can contribute to the improvement of satisfaction levels among the users. Additionally, management of traffic flow around the parking areas can be an important factor.

The study has resulted in policy implications which include viewing automated parking systems as holistic solutions and integrating them into the general transportation and mobility field instead of regarding them as technological applications. These solutions should address infrastructure-related determinants as well as the technology-related determinants of parking management systems to meet the public expectations built into these systems.

CONCLUSION

In this research, the determinants of satisfaction of the public users towards the Automated Barrier Parking System introduced in Kangar, Perlis, have been explored. With this aim in mind, this research has made efforts to identify system and environmental factors that have a major impact on satisfaction in general and in regard to automated parking systems in particular, as it has been introduced as a system to support a public service in general and to support intelligent transportation systems in Perlis in particular. The results signify that user-friendly system, payment system, parking space, and traffic flow affect satisfaction in public users significantly. In this case, user-friendly system has been recognized as the most dominant determinant, followed by payment system, traffic flow, and parking space. The relevance of this research falls under the aspects of automated parking systems, with the significant contribution of the research being in the understanding of the user perspective of automated parking systems, especially in the context of a smaller municipal area. The relevance of this research suggests that the effective deployment of automated parking systems in the future needs not only the deployment of technology but also the adoption of a user-friendly design of the system, effective payments systems, sufficient parking spaces, as well as effective traffic management. This study is important because it provides a framework on which future research especially on user satisfaction regarding automated parking systems can be carried out. Furthermore, the research encourages longitudinal mixed-method studies to determine changes in satisfaction over time.

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