The Role of Physical Facilities in Mediating the Relationship Between Quality of Service Personnel and Service Environment on Service Perceptions of Airport Services

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ABSTRACT

The Kuala Lumpur International Airport (KLIA) has been the gateway to exciting cities in South East Asia and in 2010 was ranked the 9th busiest international airport in the world. Even though KLIA has been an international airport for many years, it is difficult for it to compete with other international airport within the same categories such as the Incheon airport in Korea and Changi airport in Singapore. This scenario begs the question what are the main determinants that influence customer’s perceptions on the services offered by these international airports. In this paper, the author attempts to measure the airport stakeholders’ perception pertaining to the services offered by KLIA as one of the best airport in the world. A total of 456 respondents were selected from three types of respondent: namely passengers, airport personnel and airport tenants by using purposive quota sampling. Three predictors, service quality, service environment and service personnel were found to have medium to high correlation with the dependent variables, service perception. Further multiple regression test showed that the predictor variable, airport facilities was found to mediate the relationship between service quality and service environment on service perception. The strength of association between service quality and service environment was reduced with the introduction of the predictor, airport facilities indicating the mediating effect of airport facilities. Furthermore, the R square value increases from 0.637 to 0.642 showed the partial mediation effect of airport facilities. The outcome of the study is useful in providing the direction towards sustaining and improving not only the intangible but the tangible components of airport facilities in the country as one of the element in building the image and reputation as one of the busiest airport in the world.

KEYWORDS: Service Quality, Service Environment, Airport Facilities, Mediating Effect, Malaysia.

INTRODUCTION

Past scholars have argued that customers’ evaluation of service experience is determined by both its tangible and intangible components. This distinction is due to the inherent intangibility and perishability of services, as well as the inability to separate between production and consumption. The characteristics of services (intangibility, heterogeneity, inseparability, and perishability) make the evaluation of service quality difficult. We argue that, airline passenger’s satisfaction with airport services may be influenced by many different factors and therefore should be treated as separate and distinct variables [1]. Many services contain high components of intangibility, and can only be described by experiencing the service itself. Services are therefore, more challenging to visualize by the service provider and also difficult for the customer to evaluate the service unless they experience the service by themselves and comparing the standard with the performance of the service output [2]. In addition, unlike products that can be owned by the customers, physical facilities accompanying the service are technically rent out to the customer. Services also contain some features of tangibility such as physical facilities, service personnel and service ambient that help the service provider to enhance the delivery of the services. Physical quality relates to the tangible aspects of a service [3].

REVIEW OF LITERATURE

The review of literature includes the following concepts which are included in the conceptual framework of this paper. We will discuss the following concepts; customer’s service perception, airport facilities, service environment and the role of service personnel.

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Customer’s Service Perception

In the service industry, air transportation has always been categorised as having a high percentage of intangible components [4, 5]. In order to provide high service quality, service providers need to enhance many aspects of the service, such as interpersonal communication, physical facilities, service ambient, technology and other aspects in order to attract and delight the customers [6, 7]. Passenger satisfaction is an essential goal of any airport providing airline services for domestic and international destinations. Furthermore, in [8] found that high quality service and customer satisfaction are important factors leading to sustainable competitive advantage in many service industries. In [9] postulated that excellent passenger service is a great asset for an airport in today’s competitive environment. In [10] believed that high service quality can lead to a customer’s higher overall satisfaction and subsequently repeat purchases. Similar to other service industries, service quality is an important issue in the management of airports. Airport service quality therefore depends on the airport’s ability to understand and exceed customers’ expectations and needs [11].

Airport Facilities

Similar to any service business, excellent airport facilities are critical components in achieving efficient and effective airport operations, airport maintenance and airport administration as well as the maintenance of aircraft and other airlines related services. For an airport services, on site air support facilities are necessary for an efficient routine operations. Aircraft maintenance facilities are major support facility that includes heavy maintenance procedures [12]. Furthermore, it includes maintenance of ground handling equipment which helps the airlines and their agents to better operate, maintain and store different types of ground handling equipment. Fuelling facilities is another important component of airport support facility before the aircraft is refuelled. Another critical service is the aircraft kitchen and cleaning services whose staffs are responsible for all the in-flight meals and cleaning services. Moreover, the airports are responsible to ensure the aircraft is clean before passengers are allowed into the aircraft for their selected destination.

Physical facilities are one of determinants that may influence customer’s expectation towards an airport service delivery. When better facilities are offered to customer, they will form higher expectations when visiting the airports. Lifts, restaurants, waiting area, escalator, toilet, prayer room, trolleys and other physical facilities are examples of facilities that should be provided by airport management so that either passenger or customer can experience the best possible service. In [13] who studied passenger perceptions of service quality at six Brazilian airports defined 36 attributes involving not just services, but also the airport installations that affect most passengers. In [14] also calculated 36 quality indices, which includes elements such as availability of luggage carts, thermal comfort, acoustic comfort, pavements, visual aids, fencing, and drainage systems. Hence, the airport management need to put more effort to ensure that the physical facilities are in good condition all the time. If the facilities are not able to function well, it will create problems to the operation of the airports and poor customer’s perception toward the service delivery.

Service Environment

The service environment or “servicescape” not only affects the service quality but also represents a firm’s intangible asset [15]. Ambient are elements that (e.g. temperature, lighting, noise, music and scent) affect customer’s perceptions of the environment. In addition, there are also tangible clues that come from inanimate objects which include equipment, furnishings, displays, signs, colours, textures, sounds, and lighting. Providing sensory input, tangible clues reveal how the service establishment relates to its customers’ desires and needs [16]. Empirical studies confirm that these factors influence service quality perceptions of restaurants and retail venues [17, 18]. Signs and symbols communicate explicit (i.e. posted labels, directions and rules) or implicit (quality of materials and furnishings) meaning about the physical environment. Servicescape is defined by [19] as the “built environment” or the “man-made, physical surroundings as opposed to the natural or social environment”. The “Servicescapes” or service environment can be defined as the style and appearance of the observed physical surroundings and other tangible elements encountered by customers at service delivery sites. In many service industry, ambient is one of the important elements in supporting services that are inherently cannot be seen, touch, smell or even taste. The physical environment is particularly relevant in highly intangible services [20] and in services where the consumer experiences the services while in the firm’s facility. Servicescapes, therefore comprises of physical elements provided by service organizations where the service transactions occurs. Hence, it is hard for the service provider to visualize the service to its customers without any aid from physical elements and also the ambient such as sign, scent, symbol, music, colour, etc. It is necessary for the service provider to design a good service environment that will help the customers to experience the service better, create customer retention and influence them to spread positive word of mouth to their relatives and friends. For example, pleasant music is associated with longer
consumption times [21, 22, 23, 24], shorter time perceptions [25], less negative emotional reactions to waiting [26], more favourable attitudes toward the services [27, 28], an increased desire to affiliate and more positive attitudes toward the provider [29].

Service Personnel and Service Quality

Similar to other service organisations, the role of airport’s service employees are paramount since airports are visited by local and foreign customers who came from all over the world. It has been proven that better-trained workforce is more productive [30, 31] and delivers higher quality services [32]. Moreover, the passengers will ascertain the airport service quality through physical facilities and the performance of airport staff. In the context of an airport, the staff can be classified into three categories which are high contact, low contact and minimum contact services personnel. High contact service personnel are service employees who manage the ticketing counter, information counter, so on and so forth. They are the front-line employees of the services firm where customers will form the first impression on the service delivery of the airports. If the service given by the front line employees is poor then the airport will be labelled as a low quality airport and vice versa.

There are many dimensions of service quality which can be utilised to evaluate the performance of service personnel at airports such as tangibility, reliability, responsiveness, assurance, and empathy. For example, the tangibility of airport staff includes their physical appearance which may represent the airports’ image and reputation. In terms of responsiveness, they must be helpful and provide prompt service to passenger when it is needed. Furthermore, the element of courtesy is very important where the airport staff apply suitable body languages and appropriate voice tone when they communicate with the passenger. In this respect, employees training should include elements such as social and interpersonal skills which are mostly concerned with ensuring employees’ responsiveness, courtesy and understanding of customers needs and requirements.

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RESULTS AND DISCUSSION

In order to determine the mediating effect of airport facilities on the relationship between the independent and dependent variables, a path analysis using Multiple Regression Analysis. The authors conducted regression analysis in three (3) steps as suggested by [33]. All results are shown in the following sections.

Step 1:
The dependent variable is regress on the independent variable. In other words, the authors are determining whether the independent variable is a significant predictor of the dependent variable. All results can be observed in the following equation.

Independent Variable $\rightarrow$ Dependent Variable

$Y = 0.398 + 0.515 X_1 + 0.421 X_2 + 0.163$

$Y = \text{Service Perception of Airport Customers,}$

$X_1 = \text{Service Environment,} \quad X_2 = \text{Quality of Service Personnel}$

Both $\beta$ value for $X_1$ and $X_2$ are significant with R Square ($r^2$) value of 0.637

This indicates that the 63.7% of the changes in the customer’s service perception is explained by both the service environment and customer’s service perception. The result produced in the coefficients analysis of the first
Regression also showed that the service environment has a stronger influence on Service Perception as shown by the higher beta value of 0.452 as compared to perception of Quality of Service Personnel with a beta value of 0.408. Furthermore, the tolerance value is greater than 0.20 and the Variance Inflation Factor (VIF) is smaller than 10 indicating the lack of “Multicollinearity”.

Step 2:
In the second step, the mediator (airport physical facilities) is regressed on the independent variable. In other words, the authors are trying to confirm that the independent variable is a significant predictor of the mediator. If the mediator is not associated with the independent variable, then it couldn’t possibly mediate anything. All results are shown in the following equations. Furthermore, the perception on airport environment has a stronger influence on the mediating variable, airport facilities as shown by the higher beta value of 0.589. Again, in this second step the tolerance value is greater than 0.20 and the VIF is smaller than 10 indicating the lack of “Multicollinearity”.

\[
\begin{align*}
\text{Me}_1 &= 1.173 + 0.589X_1 + 0.182X_2 + 0.156 \\
\text{Me}_1 &= \text{Airport Facilities} \\
X_1 &= \text{Service Environment}, X_2 = \text{Quality of Service Personnel} \\
\text{All } \beta \text{ values in both equations are significant with } R^2 \text{ value of 0.535 for } \text{Me}_1 \text{ (Airport Facilities)}
\end{align*}
\]

Step 3:
According to [34], the final step demonstrates that when the mediator and the independent variable are used simultaneously to predict the dependent variable, the previously significant path between the independent and dependent variable (Step #1) is now greatly reduced, if not totally insignificant. In other words, if the mediator were to be removed from the relationship, the relationship between the independent and dependent variables would be noticeably reduced. Furthermore, the tolerance value is greater than 0.20 and the VIF is smaller than 10 indicating the lack of “Multicollinearity”. The equations are shown in the next page.

\[
\begin{align*}
Y &= 0.249 + 0.389X_1 + 0.388X_2 + 0.107 \text{Me} + 0.172 \\
Y &= \text{Airport Service Quality}, X_1 = \text{Service Environment}, X_2 = \text{Quality of Service Personnel}, \text{Me (Mediating Variable)} = \text{Physical Facilities} \\
\text{Both } \beta \text{ values for } X_1 \text{ and } X_2 \text{ are significant with } R^2 \text{ value of 0.642}
\end{align*}
\]

The authors also discovered that the beta value (\(\beta\)) for the mediating variable; physical facilities is significant and the beta value (\(\beta\)) for both dimensions of the independent variable (\(X_1\) and \(X_2\)) is lower (0.389 and 0.388) compared to the beta values (\(\beta\)) for both dimensions (\(X_1\) and \(X_2\)) of the independent variables (0.515 and 0.421) in Step #1. These results confirm that there is partial mediation indicating that the mediating variable accounts for some, but not all, of the relationship between the independent variable and dependent variable. In addition, the \(R^2\) value in Step #3 is higher (0.642) that the \(R^2\) value in step #1, highlighting the mediating effect of physical facilities in the relationship between the independent variables (service environment and quality of service personnel) on customer’s perceptions of airport service quality.

CONCLUSION

In this paper, the researchers hope to determine how the facilities available at airports can mediates the influence of two independent variables on the perceptions of customers visiting an international airport in Malaysia. The independent variables have been identified as quality of service personnel and service environment while the mediating variables have been identified as the airport facilities in Malaysia. It is the aim of the researchers to investigate the relationship between three variables (physical facilities, service environment and quality of service personnel) that are critical in its contribution to raise the standard of service delivery at Kuala Lumpur International Airport (KLIA) as the gateway for foreigners who enters Malaysia. We postulates that there is a positive and significant relationship between the independent variables and the dependent variables; customer’s service perception and the relationship is mediated by the quality of airport facilities as depicted in the conceptual framework in Figure 1.

Results of the first multiple regression analysis highlighted the importance of both Service Environment and Quality of Service Personnel on customers service perception. In this paper, we have determined that the perception on physical facilities mediates the influence of service environment and quality of service personnel on customer’s
service perception. Furthermore, the findings revealed that service environment or “service ambience” is the dominant variable followed by service quality and the influence of these variables is mediated by the airports’ physical facilities. In the context of maintaining high customer satisfaction, it is paramount for administrators of airports to maintain and improve not only its service environment and service quality but also its physical facilities in order to increase the level of customer’s satisfaction and loyalty [35, 36]. The long term success of the airports may well depend on the successful implementation of these elements.

Sustaining efficient service delivery is always a major concern for many airline firm if they are committed to promote the positive image and reputation of the organisation but also to the image of the nation as a whole. The management of KLIA should be aware that maintaining activities at the airport demand consistent improvement not only on the airport’s environment, appearance of personnel, but also providing up to date and user-friendly physical facilities. For example, during peak hours, insufficient trolleys and benches will cause customers to experience dissatisfaction towards the service delivery. Due to changes in customers’ need and lifestyle, maintaining competitive advantage requires better service environment as well as trustworthy airport staffs. Airport staffs that are able to built positive relationship with customers will help build trusts towards the safety, reliability and efficiency of the overall service output [37]. In fact there is a need to equip the airport staff with knowledge and skills of customer relationship. In addition, in [38] suggested that technology will significantly improve the quality and speed of production and lower costs. We proposed that modern technology is part of physical facilities and similar to production, it is important in service industry such as airport services. If the airport authorities utilised modern and effective technology, machinery and facilities to perform daily operation it will substantially minimise the cost of operation and simultaneously increase productivity and create high service delivery.

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REFERENCES