Influence Of Self-Service Technology On Passenger Satisfaction In Uae International Airport

Gopal PK[1] , Dr. Gouher Ahmed[2] , Dr. K Rajesh Kumar[3]

[1]Research scholar Department of Business Administration Annamalai University, India

[2]Professor of Management, Co-Research supervisor, Skyline University, UAE

[3]Professor, Research supervisor, Department of Business Administration Annamalai University, India

Abstract

The purpose of this study was to determine how self-service technology affects passenger satisfaction in airports. The key concern here is what impact using self-service technologies will have on consumer happiness at the airport in the United Arab Emirates. The quantitative research method was employed in this sort of study. The study utilizing research instruments to collect data, quantitative/statistical data analysis is done with the goal of testing the hypothesis that has already been developed. The instrument scale used in this research was the Likert Scale SST self-service technology variables, which are (Functionality, Enjoyment, Security, Customization & Convenience), and Passenger Satisfaction with a range of 1–5. Primary data were used to gather the data for this study. The study's findings provide important insight on the philosophy and use of self-service technologies. In terms of theory, this study completes the process by which passenger satisfaction and self-service technology interact in the context of public transportation, particularly in the airport sector, and it advances our knowledge of the variables that influence passenger satisfaction. The results of this study have demonstrated various impacts of latent factors on passenger satisfaction with regard to practice.

Keywords: Functionality, Enjoyment, Security, Customization & Convenience, Passenger Satisfaction and United Arab Emirates

1. Introduction

In the competitive company world of today, when new technologies are necessary to match customer demands, offering dependable, effective services is essential to attracting in new customers and keeping existing ones. One of the most alluring technologies is self-service, and in this study it was examined how its use affects

consumer happiness, particularly at airports. Only experts may utilise this tool due to the intricacy of conventional business intelligence tools. Because of this, many businesses continue to rely on conventional data warehouse systems and sluggish, rigid business intelligence software development processes, which prevents them from achieving the degree of agility they would like (Arvldvs et al., 2014).

Self-service technologies (SSTs) are frequently not up to performance requirements, despite the fact that they are purposefully created to increase quality and contain the information needed to answer customer needs. A lack of SQ-SSTs has an adverse effect on customer satisfaction as a result. While other businesses made significant SST investments, the majority of them also failed to achieve the desired SQ-SSTs and satisfaction (Colla and Lapoule, 2012). The theoretical framework for this study is based on the SST adoption model as well as a few particular examples of the technology acceptance model. The SST adoption model is further used to capture the causes and effects of service quality in order to forecast passenger happiness in the environment of self-service technology.

The SST adoption model, certain SSTs fail to be effectively adopted with an acceptable service quality because service providers do not recognise that user engagement through technology is involved. The customer considers the technology to be controllable, adaptable, practical, and efficient (Parasuraman, 2000). A person's desire to utilise new technology is shown by their innovativeness, which is also a desirable trait. Perceived loss of control and a sense of technological overwhelm are used to convey discomfort. Last but not least, a lack of confidence in technology's reliability is what leads to insecurity (Parasuraman, 2000). A consumer is more likely to employ a new technology, including SSTs, if they are optimistic, inventive, and lack much discomfort or uneasiness. Specific service dimensions can be measured using a variety of measuring scales. Most notably, SERVQUAL assesses quality from the perspective of a typical customer. The potential facilitators and barriers to technology adoption are measured using the technology assessment model (TAM). Technologies readiness (TR) research has been done to determine if consumers are ready to accept new technology.

SST's service quality is measured using Lin and Hsieh's SSTQUAL scale. SSTQUAL is widely used in studies and is regarded as the most important scale for evaluating the quality of consumer-technology relations. Similar or related studies have been carried out in this area, according to a review of the existing literature. Extrinsic motives were identified as a major driver of adoption by Oh et al. in their study of visitor adoption and desire to use SST in a resort hotel scenario. Through combining the human urge for interaction with elements of perceived usability, privacy, autonomy, and efficiency, this study produced a conceptual framework. According to the scale, which was based on TAM, these factors had the greatest beneficial influence on how customers adopted SST in a hotel setting.

In their study, Choi and Park looked at how a smart entry service (SST) was adopted in an airport setting. To evaluate the intention to use, including functionality, security, perceived enjoyment, perceived ease-of-use, and perceived

usefulness, a different methodology for measuring the quality of SST services was devised. In their research, Jang and Noh looked at SST service quality in the context of IPTV. This researcher developed a model that increases the TAM scale. This study investigated the relationship between functionality (including simplicity of use), design, pleasure, and security to determine the intention to use of SST. The study came to the conclusion that perceived usefulness, usability, and enjoyment were all influenced by service quality. All three of these research made use of a TAM version or an expanded TAM, some of which included or excluded SSTQUAL dimensions.

2. Statement of the Problem

Customer service is a collection of activities that seeks to satisfy customers in order for a business to expand or to make sure that customers receive the goods or services they expect. Consumers are increasingly using self-service technology (SST), which enables them to obtain the services they want without assistance from staff. In other words, a self-service network promotes customers to participate actively in production while remaining independent of staff assistance. As a result, the effectiveness and calibre of the service are increased. Self-service technologies include telephone banking, web technology, mobile phones, automated hotel and restaurant kiosks, etc. Self-service has had a limited amount of success, despite the increased accessibility to retail outlets. However, the lack of knowledge of the variables impacting the interaction between consumers while using self-service is the primary cause of such poor results. Customer satisfaction is really a good indicator of both the effectiveness of self-service offerings and the quality of the services provided. Therefore, the purpose of this study was to determine how self-service technology affects consumer satisfaction in airports. The key concern here is what impact using self-service technologies will have on consumer happiness at the airport in the United Arab Emirates.

3. Review of Literature

Service Quality of SSTs
Wang et al. (2001) suggest that, Customers' information satisfaction (CIS) is measured for websites that sell digital goods and services. They describe CIS as a summary emotive reaction of variable intensity that occurs after consumption and is sparked by key elements of sales activities, information systems (websites), digital goods and services, customer support, post-sale services, and corporate culture. In a similar vein, Anderson and Srinivasan (2003) define satisfaction as how customers rate their online shopping experience in comparison to other online or traditional retail outlets. SSTs are "technology interfaces that enable consumers to provide a service independent of direct service personnel interaction," according to Meuter et al. (2000, p. 50). SSTs offer a very wide range of services, including as financial transactions (such as retail purchases), self-help (such as distance

learning), and customer services (e.g., hotel checkout). SSTs are attractive to businesses because they promise to outperform in-person services in terms of cost-efficiency, service quality, and client appeal (Parasuraman and Grewal 2000).

Alba et al. (1997) highlighted that design elements like interactive information searching and increased option comparisons are of significant benefit to customers in computer mediated retail environments in their pioneering conception of SSTs. More specifically, when these SST elements function effectively, clients acquire positive opinions of the technologies and the services themselves because they sense that they have more influence over the service process and results (which Bateson [1985b] called "perceived control") (Hoffman and Novak 1996). Given these advantages, practitioners and researchers have tried to comprehend how SST features might be better developed to increase efficacy from the perspective of consumers. Even while earlier research on SSTs and e-services has shown some evidence of the beneficial benefits of certain design elements (e.g. Coyle and Thorson 2001), little is understood about the cumulative influence of many SST design elements. In this work, we fill this information vacuum by offering fresh perspectives on what can increase the efficacy of SST. In our study, we explicitly look at two questions. The first is how perceived control and interface assessment are impacted by numerous SST design elements, or what we refer to as a "combined-feature design. We focus on interactivity (i.e., how much users may alter the structure or content of the mediated environment in real time; Steuer 1992) and comparative data (i.e., the quantity of truthful and evaluative information provided about aggressive product offerings; Alba et al. 1997). Importantly, earlier research has demonstrated that consumer attributes may also affect SST efficacy (Langeard et al. 1981). Some users are more skilled at searching SSTs to get the services they want, whereas others only utilise innovations grudgingly or with little skill.

Therefore, we investigate how two user characteristics play a role in SST effectiveness: technology readiness (TR), or a person's general propensity to adopt new technology, and prior experience with related technologies, which helps a person become familiar with technology interfaces (Alba and Hutchinson 1987). (Parasuraman 2000). Therefore, the next investigation is on the significance of these personal characteristics in shaping perceived control and interface appraisal. In order to forecast and clarify the roles of design and user characteristic factors in SST effectiveness, we depend on resource-matching theory, technology-based services, and self-services concepts in the literature review that follows. We propose that SST design elements, such as comparison information and interaction, indicate the cognitive resources needed in SST activities based on the theory and ideas. Individually, they increase efficacy; but, when the characteristics are combined, they place an undue weight on the user's cognitive processing, which lowers control and evaluation (i.e., lower effectiveness). Additionally, by illustrating resource availability or the degree of customer elaboration in the service activities, personal characteristics like past experience and TR affect the effect of feature designs on SST efficacy.

Technology-based services and self-services concepts

Perceived control is highlighted as a crucial component of SST success in the research on technology-based services and self-services. A subjective judgement of control over a task in an environment is referred to as "perceived control." It refers to a customer's perception of control over the procedures and results of the service interface in an SST context (Langeard et al. 1981). Additionally, it is a situation-specific psychological consequence that is frequently impacted by external factors and consumer characteristics, such as confidence using a certain technology (e.g., Mittal et al. 2002). One of the earliest marketing disciplines to realise the strength and importance of perceived control was services research. Perceived control became a prominent argument when they tried to differentiate between interactions between higher- and lower-quality services. According to Hui and Bateson (1991), for instance, perceived control is the secret to unlocking customers' emotional and behavioural reactions to service interactions.

They found via empirical research that a higher sense of control is linked to higher levels of customer satisfaction, longer-lasting customer loyalty, and higher-quality services. As a result, academics looking at SSTs continued to argue that a key factor in customers' evaluations and what motivates their intents and usage of the technologies is perceived control (Zeithaml et al. 2002). In light of cognitive resource principles, we hypothesise that perceived control advances with cognitive and decisional efforts in a task; it is bolstered by the perception of a perceived opportunity to alter the characteristics of a stimulus interface, to gather and evaluate information, and to make choice decisions (Averill 1973). Customers acquire a sense of control and make favourable judgements of the stimulus (or SST) when they have the resources to engage in either navigating the interactive feature or evaluating service options since doing so requires mental effort. Therefore, we contend that the resource matching theory offers conceptual support for elucidating consumers' perceived control in SSTs. In the services literature, such an explanation has been proposed but not tested (Bateson 1985b). assessment of the interface assessment is another crucial component of SST efficacy, according to the literature on technology-based services and self-services. The evaluation of an SST's interface is the process through which opinions or attitudes are formed regarding it after using it. According to Bateson (1985a), a key customer result is their level of satisfaction with the service technologies they use and their sense of control.

Prior studies have demonstrated that the usage and acceptance of an e-service are determined by customer satisfaction, which is frequently reflected in assessments of a technology's characteristics (such as information providing and simplicity of use). Customers' perceptions regarding SSTs, for instance, influence whether they plan to use them, according to research by Dabholkar and Bagozzi from 2002. It's interesting to note that commercial practises like the J.D. Power Award use a similar set of standards to assess Web-based services. We note that customer satisfaction with services and delivery methods are frequently employed and acknowledged as significant indicators of effectiveness from the customer's perspective in studies of

services other than SSTs (e.g., Vargo and Lusch 2004). As a result, we see interface assessment as a crucial and logical sign of the success of SST.

Technology to Service Quality of SSTs

In the literature on the quality of online services, empirical data demonstrates that consumer perception of value results in e-satisfaction (Hsu et al., 2013). Customers' perception of service value is intimately tied to their knowledge of the extraordinary value they have gained from a service exchange with a service provider and how customer e-satisfaction reflects the customer's overall feeling derived from that value. These are the outcomes of the perception of customer value received from the SSTs in a setting of customer technology engagement. In the context of e-commerce, prior research has demonstrated that perceived value has a major impact on customer happiness (Chiu et al., 2009). Shamdasani et al. (2008) further verified that, when it comes to self-service internet technologies, perceived value has a significant impact on satisfaction. SSTs refer to a technological interface that enables users to access a service without the involvement of a direct service personnel. To improve the client experience, save employee-related costs, and stay up with technology innovation, service providers can provide SSTs. SQ-SSTs may affect how value is viewed. For instance, Ho and Ko (2008) discovered a significant correlation between SQ-SSTs and perceived value. When an SST may improve the user experience (such as functionality, convenience, enjoyment, security, design, customization, and assurance) of SSTs, the perceived value of the SST rises. Customers understand the benefit of employing SSTs by way of the learning curve connected to a positive experience with the technology. The convenience of utilising SSTs, avoiding interactions with service personnel, time and cost savings, the capacity of SSTs to instantly resolve issues, and how SSTs meet up to consumers' expectations are some of the advantages enjoyed by customers. Customers will adopt a positive attitude and are more likely to perceive a greater degree of value evaluation if they concur with the advantages and benefits of their perceived service quality of an SST.

4. Research Methodology

The quantitative research method was employed in this sort of study. The study utilizing research instruments to collect data, quantitative/statistical data analysis is done with the goal of testing the hypothesis that has already been developed. Quantitative research is founded on the positivist ideology (Sugiyono, 2011). According to the methodology, each variable in this research was measured using an ordinal scale. The instrument scale used in this research was the Likert Scale SST self-service technology variables, which are (Functionality, Enjoyment, Security, Customization & Convenience), and Passenger Satisfaction with a range of 1–5. In UAE International Airport, we randomly selected 400 respondents and distributed the questionnaire to them at the boarding boards, security checkpoints, check-in counters, immigration, and board lounge. Primary data were used to gather

the data for this study. People who responded to the statement or provided an answer on the questionnaire were the primary source of the data collected from the respondents. Field study, namely the distribution of the questionnaire, was the method employed in this study to gather the data.

Objectives
- To find the demographic pattern of passenger in UAE airport.
- To test the reliability of self-service technology and passenger satisfaction.
- To examine the impact of the use of self-service technology on passenger satisfaction in UAE airport.

Hypothesis
- Self-service technology do not influence passenger satisfaction.

5. Result & Findings
In order to acquire results for the study objectives, which give the solution to the research problem, the data received from the respondent has been tested using statistical methods in accordance with the assumptions established in the form of hypotheses.

i) Percentage Analysis

Table 1: Distribution of sample on the basis of Age

Age (in years)	Frequency	Percent
Less than 24	24	6.0
25 to 29	48	12.0
30 to 34	104	26.0
35 to 39	168	42.0
Above 40	56	14.0
Total	400	100.0

The table 1 reveals the age wise classification of the respondents. In 400 respondent 42 per cent belong to the age group from 35 to 39years of age, 26 per cent of the respondent belong to the age group from 30 to 34, 14 per cent of the respondent belong to the age group Above 40 years, 12 per cent of the respondent belong to the age group from 25 to 29 years and the remaining 6 per cent of the respondents belong to the age group of Less than 24 years.

Table 2: Distribution of sample on the basis of Reason to choose Airport

Reason to choose Airport	Frequency	Percent
Recommendation	40	10.0
To use duty-free shop	64	16.0
To save time	128	32.0

Convenience	168	42.0
Total	400	100.0

The table 2 reveals the rating of Reason to choose Airport of the respondents. In 400 respondent 42 per cent of the respondent are chosen for convenience, 32 per cent of the respondent are chosen to save time, 16 per cent of the respondent are chosen to use duty-free shop and the remaining 10 per cent of the respondents are chosen for recommendation.

Table 3: Distribution of sample on the basis of Purpose of travel

Purpose of travel	Frequency	Percent
Work	192	48.0
Business	72	18.0
Education	32	8.0
Leisure / Holiday	64	16.0
Visits – family / friends	40	10.0
Total	400	100.0

The table 3 reveals the rating of Purpose of travel of the respondents. In 400 respondent 48 per cent of the respondent are travel for the purpose of work, 18 per cent of the respondent are travel for the purpose of Business, 16 per cent of the respondent are travel for the purpose of leisure / holiday, 10 per cent of the respondent are travel for the purpose of visits – family / friends and the remaining 8 per cent of the respondents are travel for the purpose of education.

Table 4: Distribution of sample on the basis of Type of Airport

Type of airport	Frequency	Percent
Dubai International Airport	286	71.5
Abu Dhabi International Airport	61	15.3
Sharjah International Airport	46	11.5
AL Maktoum International Airport	7	1.8
Total	400	100.0

The table 4 reveals the rating of type of airport prefer by the respondents. In 400 respondent 71.5 per cent of the respondent are travel Dubai international airport 15.3 per cent of the respondent are travel Abu Dhabi international airport, 11.5 per

cent of the respondent are travel Sharjah International Airport and the remaining 1.8 per cent of the respondents are travel AL Maktoum international airport.

Table 5: Distribution of sample on the basis of respondents belonging national

You belong to	Frequency	Percent
Asian National	120	30.0
American National	80	20.0
European National	48	12.0
African National	56	14.0
Gulf National	72	18.0
Other Nationals	24	6.0
Total	400	100.0

The table 5 reveals the respondents belonging country. In 400 respondent 30 per cent belong to the Asian national, 20 per cent of the respondent belong to the American national, 18 per cent of the respondent belong to the Gulf national, 14 per cent of the respondent belong to the African National, 12 per cent of the respondent belong to the European national and the remaining 6 per cent of the respondents belong to the other nationals.

Table 6: Distribution of sample on the basis of Purpose of travel

Purpose of travel	Frequency	Percent
Work	192	48.0
Business	72	18.0
Education	32	8.0
Leisure / Holiday	64	16.0
Visits – family / friends	40	10.0
Total	400	100.0

The table 6 reveals the rating of Purpose of travel of the respondents. In 400 respondent 48 per cent of the respondent are travel for the purpose of work, 18 per cent of the respondent are travel for the purpose of Business, 16 per cent of the respondent are travel for the purpose of leisure / holiday, 10 per cent of the respondent are travel for the purpose of visits – family / friends and the remaining 8 per cent of the respondents are travel for the purpose of education.

ii) Reliability Test

Table 8: Reveals the Cronbach's Value

Factors	No of Statements	Cronbach's Value
Functionality	4	0.816
Enjoyment	4	0.924
Security	4	0.928
Customization	4	0.910
Convenience	4	0.956
Passenger satisfaction	4	0.974

The table 8 reveals the reliability test has been conducted using Cronbach's alpha, with a reliability coefficient of 0.7 being considered satisfactory. In order to guarantee that the variable achieves the appropriate alpha, the reliability test was carried out and repeated numerous times, leading to the removal of one variable from the measurement of mission success.

iii) Regression Analysis

Table 9 Reveals the influence of self-service technology on Passengers Satisfaction Model Summary

R	R Square	Adjusted R Square	F - Value	P - Value
0.753[a]	0.726	0.716	253.119	0.000[b]

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.240	0.119		6.465	0.000
Functionality	0.017	0.011	0.022	1.537	0.025
Enjoyment	0.040	0.011	0.060	2.215	0.000
Security	0.057	0.022	0.056	1.936	0.004
Customization	0.034	0.017	0.056	2.514	0.012
Convenience	0.528	0.069	0.710	5.597	0.000

Interpretation

It is interesting to note that the value of adjusted R square is 0.716 and the F statistic value is 253.119 with a significance value p equal to 0.00. Since the p is equal to 0 the F value is significant which implies that the model is a good fit for the data. The values of regression co-efficients and the t static values with p are also given. It is seen from the table that the SST self-service technology variables namely (Functionality, Enjoyment, Security, Customization &Convenience) have significant regression co-efficients since the corresponding p-values are less than 0.05. Therefore, these SST self-service technology contribute to the passengers satisfaction. Hence, it can be concluded that the SST self-service technology variables namely (Functionality, Enjoyment, Security, Customization &Convenience) significantly influence between the passengers satisfaction.

6. Summary and Discussion

The results of this study demonstrate strong rater consistency for SST self-service technology characteristics, including (Functionality, Enjoyment, Security, Customization &Convenience) We discovered that respondents in our sample believed that SSTs in their particular firms may help them complete their services quickly since the technology is simple to use and requires little effort to utilize. We discovered that the respondents in our sample firmly feel that there is a high degree of safety while conducting SST transactions within the corporation. Only 50% of respondents, however, concur that the organization has established clear procedures for employing SSTs, indicating that this problem needs to be resolved. Our study's findings, the organization's SST design is causing some anxiety among the respondents.

7. Conclusion

Based on the findings of the study conducted to determine the impact of SST self-service technology on travelers' satisfaction at the international airport of the United Arab Emirates. Using data from a developing nation in the environment of the UAE international airport, the correlations between SST self-service technology factors, namely (functionality, pleasure, security, customization & convenience) and passengers' satisfaction were examined. The study's findings provide important insight on the philosophy and use of self-service technologies. In terms of theory, this study completes the process by which passenger satisfaction and self-service technology interact in the context of public transportation, particularly in the airport sector, and it advances our knowledge of the variables that influence passenger satisfaction. The results of this study have demonstrated various impacts of latent factors on passenger satisfaction with regard to practice.

8. Limitations and Future research directions

Since our research was done in a lab, outside interference was restricted to the bare minimum. In an actual SST scenario, third parties—such as friends, family members, and other customers frequently present and have the ability to influence the course of events by interacting with or helping the user. The user could feel

more in control if these peers discuss their understanding of and experiences with SSTs. The user might also decide not to investigate the technological interface in order to prevent embarrassing errors in front of a third party. Therefore, including other persons in additional SST study might increase the realism of the results. There are a few issues that need to be highlighted so that future study may solve them. First, the present framework specifically relates to the connection between life satisfaction and passenger satisfaction in a developing nation's SST self-service technology. Second, given the inclusion of latent factors in this study, it would be beneficial to further examine the SST self-service technology characteristics, namely (Functionality, Enjoyment, Security, Customization & Convenience), in order to better serve the public's greater requirements and increased mobility.

References

1) Bitner MJ, Ostrom AL, Meuter ML.(2002) Implementing successful self-service technologies. The Academy of Management Executive 16:96-108.
2) Curran JM, Meuter ML, Surprenant CF(2003). Intentions to use self-service technologies: a confluence of multiple attitudes. Journal of Service Research 5: 209-224.
3) Ho, S., Ko, Y., (2008). Effects of self-service technology on customer value and customer readiness: The case of internet banking. Internet Research, Vol. 18, No. 4, pp. 427-446.
4) Lee, H.J., Lyu, J, (2016), ―Personal values as determinants of intentions to use self-service technology in retailing‖, Computers in Human Behavior, Vol. 60, pp. 322 -332.
5) Meuter ML, Ostrom AL, Roundtree RI, Bitner, MJ.(2000) Self-service technologies: understanding customer satisfaction with technology-based service encounters. Journal of marketing 64: 50-64.
6) Parasuraman, A., (2000). Technology readiness index (Tri): A multiple-item scale to measure readiness to embrace new technologies. Journal of Service Research, Vol.2,No.4, pp. 307-320.
7) Radomir L, Nistor CV(2014). Comparing the original and the revised SSTQUAL scale among high-educated consumers in Romania. Procedia Economics and Finance 15:926-934.
8) Radomir L, Nistor CV(2012). High-educated consumer perceptions of service quality: An assessment of the SSTQUAL scale in the Romanian banking industry. Procedia Economics and Finance 3:858-864.
9) Shamdasani, P., Mukherjee, A., Malhotra, N., (2008). Antecedents and consequences of service quality in consumer evaluation of self-service internet technologies. The Service Industry Journal, Vol. 28,No.1, pp. 117-138.
10) Wang .Michael Chih-Hung, (2012),"Determinants and consequences of consumer satisfaction with selfservice technology in a retail setting", Managing Service Quality: An International Journal, Vol. 22 Iss 2 pp. 128 – 144.