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MASTER'S THESIS

Intention to adopt Technology-Based Self-Service

The Case of Airport Self Check-in Service for Iranian Aviation Industry

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۱۰۸۶۱۵

DEDICATION

This thesis is dedicated to my mother Iren Vakil, my father Farshid Habibi, my brother Sardar Habibi for their continuous encouragements and sacrifices for my lifetime education.

Abstract

The growth of new innovative technologies in service delivery and increasing labor costs make service providers to think about new service delivery options which allow customers to serve themselves as an alternative way. These new services potentially offer consumers round-the-clock access to services, including during emergencies. These kinds of new services are known as Technology-Based Self-service delivery (TBSS). TBSS delivery is classified into two category of services which are on-site (at firm's site) and off-site service (at customer home/place); the customer's interaction with the technology can be direct or indirect. This research will focus on the on-site TBSS with direct interaction between the customer and technology; this thesis attempts to investigate and analysis the factors that influence intention to adopt self check-in machines (kiosks) from the Iranian flight passengers' point of view. In order to achieve our objective a famous attitudinal model has been chosen which has two parts, the core model and the moderating variables; the core model includes attitudes toward TBSS which has three determinants (performance, ease of use and fun) and then attitudes influence the intention to use TBSS. The moderating variables are divided into two groups, customer traits (self-efficacy, inherent novelty seeking, need for interaction, self-consciousness) and situational factors (waiting time and social anxiety). This research will study on the relationships between the core model constructs and the moderating variables effects on the relationships within the core attitudinal model for TBSS.

The measures and hypotheses were analyzed using LISREL technique. The results showed that in the core model, performance and ease of use factors influence the attitudes, but the fun factor was not significant; also attitudes significantly influence the intention to use TBSS. The results of moderators indicate that marketers should promote the performance or reliability of TBSS when the target passengers are likely to have either one or all of following characteristics: 1) high self-efficacy, 2) high inherent novelty seeking, 3) Low need for interaction, 4) high self-consciousness. Also marketers should promote ease of use of their TBSS if their target passengers are likely to have either one or all of following characteristics: 1) Low self-efficacy, 2) Low inherent novelty seeking, 3) High need for interaction, 4) Low self-consciousness; and also when it is expected to have high waiting time and crowded environment. Finally in order to have un-crowded environment and decrease the waiting time, the reliability (performance) and ease of use aspects of TBSS should be highly considered in the service design.

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LIST OF ABBREVIATIONS

AGFI	Adjusted Goodness of Fit
AMOS	Analysis of Moment Structure
AT	Attitude
ATM	Automated Teller Machine
BI	Behavioral Intention
CFA	Confirmatory Factor Analysis
DF	Degree of Freedom
DV	Dependent variable
EFA	Exploratory Factor Analysis
GFI	Goodness of Fit
IS	Information System
IT	Information Technology
IV	Independent variable
NON-SIG	Non Significant
PBC	Perceived Behavioral Control
PLS	Partial Least Square
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Modeling
SIG	Significant
SN	Subjective Nomrs
SPSS	Statistical Package for Social Sciences
SST	Self-Service Technology
TAM	Technology Acceptance Model
TAM2	Technology Acceptance Model 2
TBSS	Technology-Based Self-Service
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
UTAUT	Unified Theory of Acceptance and Use of Technology
WAP	Wireless Application Protocol

Constructs/Items Abbreviation in the Model

ATTIT (ATTITU)	Attitude toward Using TBSS
EASE	Ease of Use
INTENT	Intention to Use TBSS
INTER	Need for Interaction
PER	Performance
SANEXIETY	Social Anxiety
SEEKING	Inherent Novelty Seeking
SELF	Self-Efficacy
SELFCONS	Self-Consciousness
WAITING	Waiting Time

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1. Chapter One: Introduction

1.1 Introduction

In recent years technology widely spread across various industries which makes innovative ways to produce their products and deliver the services based on technology to their customers. Companies are going toward the way to use technology to provide services; they could satisfy their customers with lower cost while reducing labor costs. Also in continuously growing service sector, industrial logic means that the customer has to perform service production and delivery for him/herself, which is called "Self-Service" (Anselmsson, 2001). The new innovative machines which provide self service for customers make a radical change in service delivery from person-to-person to person-to-technology service delivery which is called technology-based self-service (TBSS).

In this chapter first a brief background of the TBSS evolution and some main concepts will be mentioned. After that the Technology-Based Self-Service will be described and then research problem, significance of the research and research objective will be presented.

1.2 Background

In this part brief evolution of TBSS and description of some related concepts which has been used in our study will be described.

1.2.1 Service Concept

In general "service" is a word to indicate "an industrial sector that do(es) things for you, they don't make things" (Silvestro and Johnston, 1990; cited by Johns, 1999). Service also denotes some organizations which help people and satisfy their needs (e.g. Health services) (Johns, 1999). Service experiences are the outcomes of interactions between organization, related systems/processes, service employees and customers (Bitner et al., 1997). Services are mentioned as intangible rather than tangible object and their output viewed as an activity. But in some cases this description is not clear; sometimes the output is more tangible like a restaurant which provides food and drink. On the other hand some products have intangible attributes.

In overall view "services are activities rather than things" (Gronroos, 1988; cited by Johns, 1999). There are two broad assumptions; core services can deliver by service employee, in this kind of service the interaction is between the customer and frontline employee (Bitner et al., 1997) or the customer can deliver the service for him/herself.

1.2.2 Service Encounters and the role of technology in service delivery

In order to discuss about different kinds of service delivery, first it's better to mention and talk about service encounter. Service encounter is known as "moment of truth" (Shocktak, 1985; cited by Wang and Namen, 2004). It is the duration that the customer directly interacts with the firm and its service (Bitner, 1990; Bitner et al., 2000).

The image of a company is created in customer's mind during the service encounter (Carlzon, 1987; cited by Wang and Namen, 2004).

Service encounter can occur with or without the presence of employee. In traditional service encounter which is called person-to-person service encounter the firm's employees involves in interaction with the customer; some companies trained their employees some techniques to keep and satisfy their customers such as say "have nice day" to customers and answering the phone on or before the third ring (Bitner et al., 1990; Bettencourt and Gwinner,1996). But sometimes the human interaction element is not necessary in a service encounter. So customers can serve themselves without employees' help; they could serve themselves in traditional ways (Bateson, 1985) like self-services in restaurants which they choose their foods and take them or they can use new technologies to perform the services which is known as person-to-technology Service delivery (Dabholkar, 1994a). In person-to-technology service encounter people can use different kind of machines or computers and etc to perform service by themselves. The growth of technology in service encounters has good potential to benefit customers and service firms (Dabholkar, 1994, 1996; Bitner et al, 2000; Wang and Names, 2003).

1.2.3 Self Service

Self service can be described as a customer that perform a service by him/herself, self service options can existed with or without technology factor. The example of self service without technology factor is bagging your own groceries (Bateson, 1985). For service industries switching their customers from traditional service delivery to self service have some difficulties in marketing issues, the reason is that "Self service options generally assumed as an unattractive option and are often offered at a discount" (Bateson, 1985) and also in some industries self service options are launched to provide service for customers in the hours which the traditional kinds of service are not available (Bateson, 1985), but nowadays in a competitive market developing alternative ways of service delivery is crucial for service industries. When a company want to offer self-service instead of full service it should consider the role of the customer; it should explain the new procedures and advantages to the customer (Wang and Namen, 2004). Some researches have been done and indicate that the existing of self-service option and participation of customer in service delivery is very important for customers and service industries (Bateson, 1985; Bitner et al., 1997; Hoe and Hendry, 2002).Also in order to enhance service delivery one of the good ways is to customized the service for customers; the service can be customized better and easier if the customer play an effective role and participate in the service delivery (Kelley et al., 1990). Recently many service firms in different industries offer various kinds of self service options in which they use new technologies to provide the service for their customers.

1.3 Technology-Based Self-Service

As mentioned, in order to perform services customers can interact with the Technology (Person-to-Technology) in service encounters and serve themselves (Dabholkar, 1994a). The combination of technology with self service options will provide great choices for customers to serve themselves without the presence of the employees. The newest term for this kind of service delivery is "Technology-Based Self-Service (TBSS)" (Dabholkar, 1994a), there are some other terms such as "Self-Service Technology (SST)" (Lee and Allaway, 2002) and "Technology-enabled service". But TBSS more involves with customer activity of the self-service and the others are more related to the technology itself (Wang and Namen, 2004), So Technology-based self-service (TBSS) term is more applicable for this research.

Technology-Based Self-Service can be any activity or benefit based on hard technology which service provider offers so that customers can perform the service, or parts of the service, by themselves without employees' help (Dabholkar, 1996; Anselmsson, 2001). There are two main categories of TBSS delivery which are off-site and on-site service delivery options (Dabholkar, 1994a; Dabholkar and Bagozzi, 2002). Also the interaction between the customer and technology can be either direct or indirect. In off-site TBSS the interaction between customer and technology is take place at the customer's home or office, The examples of this kind of TBSS are online shopping , internet banking , telephone banking and etc. In on-site TBSS customer interacts with technology in order to perform the service at the service site, the examples of this kind of TBSS are. automated teller machines (ATMs), vending machines, self check-in machines (electronic kiosks) for self check-in and baggage check-in and get boarding pass at airports, electronic in-store blood pressure checking devices, automated car rental machines,, touch free electronic car washers, self-checkout systems at retail stores, service computers with internet connection at airports, electronic self-ordering systems at fast-food restaurants and Using in-room TV to check out of hotel (Dabholkar, 1994a, 1996; Meuter et al., 2000;Wang and Namen, 2004; Anitsal, 2005). This research will focus on on-site TBSS.

1.3.1 Technology based self service in Iran aviation industry

Worldwide aviation industry is one of the pioneer service industries which have been used modern technologies in service delivery in its different services. This kind of service started from airline ticketing machines in airports (Dabholkar 1994a), online e-ticketing, online check-in, wap check-in and self check-in through check-in machines (kiosks) for flight passengers at airports.

In recent years Iran aviation industry (private and government owned airlines and airports) emphasized on role of information technology to enhance their operations. In this regard an Iranian airline in cooperating with some private banks started to offer TBSS off-site service which is online ticketing for flight passengers. Also we have some on-site TBSS in Iranian airports such as bank ATMs, Internet kiosks which are not related to aviation industry.

Unfortunately, we don't have on-site TBSS for passenger self check-in services in Iran, so the only way to check-in at Iranian airports is the regular person-to-person service which is provided by employees of the airlines.

1.4 Research Problem: Customer's Intention to adopt TBSS

As mentioned the nature of service encounter has been changed. Service firms and customers need to think about and consider these innovative technologies as new way for service delivery in their minds; they should adopt themselves to these new innovative technologies.

Technology-based self-service can be considered as an innovation (Wang and Namen, 2004). Do the customers of that specific service industry want these new ways of service delivery or they reject it? It is very important to understand the factors that influence intention to adopt or avoid of technology-based service delivery options before lunching them, so the firm will know about the customer's ideas and attitudes about that kind of service. Also by using these studied service firms can define customer roles; they can help their customers to fit into and use these new services. Sometimes the customer's resistance may happen (e.g. the resistance of customers for ATM at its early stages). But as we see now the ATM and other TBSS in banking industry such as internet banking, telephone banking and etc (Dabholkar et al, 2003) is well accepted. It is vitally important for the firms to know about their customers favorable and unfavorable attitudes about their new services because of the high cost of launching such service delivery options.

This research will investigate on the effects of some important on customer's intention to adopt TBSS in service industries and It will narrow down to on-site TBSS in the aviation industry which is self check-in service by using self check-in machines (see Appendix 2 for related information and functionality of self check-in machines/ kiosks) for Iranian flight passengers at the airports.

1.3.1 Research Question

Based on above discussion the research question will be presented as:

Research Question: What are the factors affecting the Iranian airline passengers' intention to adopt self check-in service at airport?

A lot of factors exist which can have positive or negative effects on intention to use of technology-based self-service. Managers and marketers can use the appropriate factors in their service design and promote them and also avoid the factors which have negative effects on TBSS intention to use. Various factors related to TBSS will be discussed in literature review chapter.

1.5 Significance of the research

In Iran and some other countries service industries like banking are using TBSS in their branches such as ATMs. But still there are a lot of industries which they don't offer service delivery options based on technology for their customers such as hotels, airlines, museums and etc.

The presence of many passengers in front of check-in counters, delays of presence of employees at check-in counters and lacking of self check-in machines as an alternative way for check-in in Iranian airlines caused long waiting lines, wasting time and crowding in front of check-in desks in Iranian airports. TBSS (self check-in machine) is an alternative way which may reduce some of these issues. Also this service can reduce labor costs for the airlines. Aviation industry is a growing industry which has high investment from government and private invertors. As mentioned before, some of Iranian airlines start providing online ticketing in cooperation with some private banks for passengers. It will be very useful to have self check-in service with online ticketing for passengers simultaneously or right after the adoption of e-ticketing. Also Iranian airlines such as Iran air, Saha airlines, Aseman airlines, Mahan airlines, Kish air and some other have good potential to launch new service like self check-in service. So aviation industry could be one of the first industries to start new on-site TBSS among Iranian service industries.

Only few researches concentrated on intention to adopt on-site TBSS delivery (e.g. Dabholkar and Bagozzi, 2002). And as far as we know nobody study on intention to adopt of this kind of on-site TBSS in Iranian aviation industry. Lack of research in this area in Iran and the reasons which were discussed above are the main justifications and motivations for this study.