Self-Service Technologies (SSTs) — the Next Frontier in Service Excellence: Implications for Hotel Industry

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ABSTRACT

This research aims to understand how self-service technologies (SSTs) can bring about service excellence for tourists by the moderated mediating effect of satisfaction and tourist types, from the customer's perspective. The study draws on survey data from 627 tourists from North Cyprus, Turkey, Italy, United States, and Germany who had experience using SSTs during their travel period for either leisure or business. The utility theory, Lancaster's consumer theory, and random utility theory form the basis of this research's theoretical framework. This study is the first attempt that examines the SSTs' characteristics as antecedents of service excellence from the customer point of view in tourism literature. Moreover, this research enhances knowledge by integrating the concept of service excellence and SSTs' characteristics into the abovementioned theories. The results revealed that service excellence could be provided for customers through SSTs, which this service excellence drives through the characteristics of SSTs. The result of moderated mediation tests on the relationship between SSTs' characteristics and service excellence revealed that tourist types moderate the mediating effect of SSTs' satisfaction for functionality, enjoyment, security/privacy, convenience, and customization. Meaning the mentioned constructs are more influential for business travelers than leisure travelers. Limitations, practical and theoretical implications are also discussed.

Keywords: self-service technology, service excellence, functionality, enjoyment, security/privacy, design, customization, convenience, assurance.

ÖZ

Bu çalışmanın amacı, self servis teknolojilerinin (SST), hizmet mükemmelliğini nasıl etkilediğini turist türü ve memnuniyetin moderatörlü aracılık modeliyle turistlerin perspektifinden incelenmesi amaçlanmaktadır. İlgili çalışma, Kuzey Kıbrıs, Türkiye, İtalya, Amerika Birleşik Devletleri ve Almanya'dan seyahat süreleri boyunca eğlence veya iş için SST kullanma deneyimine sahip 627 turistin anket verilerine dayanmaktadır. Fayda teorisi, Lancaster'ın tüketici teorisi ve tesadüfi fayda teorisi, bu araştırmanın teorik çerçevesinin temelini oluşturmaktadır. Bu çalışma, turizm literatüründe hizmet mükemmelliğinin öncülleri olarak SST'lerin özelliklerini müşteri perspektifinden inceleyen ilk çalışmadır. Ayrıca, bu araştırma, hizmet mükemmelliği kavramını ve SST'lerin özelliklerini yukarıda belirtilen teorileri entegre ederek literatüre katkı koymaktadır. Sonuçlar, turistlere SST'ler aracılığıyla hizmet mükemmelliğinin sağlanabileceğini ve bu hizmet mükemmelliğinin SST'lerin özelliklerinden kaynaklandığını ortaya koymuştur. Buna ek olarak, SST'lerin özellikleri ve hizmet mükemmelliği arasındaki ilişki üzerine yapılan moderatörlü aracılık modeli testlerinin sonucu, turist türlerinin SST'lerin memnuniyetinin etkisinin işlevselliği, haz, güvenlik/gizlilik, rahatlık ve özelleştirme için aracılık etkisinde moderatör rolünü ortaya koymuştur. Bunun anlamı, bahsedilen yapılar iş seyahatinde olanlar tatil amaçlı seyahat edenlere kıyasla daha etkili olduğu gözlemlenmiştir. Kısıtlamalar, pratik ve teorik çıkarımlar da ilgili çalışmada yer verilmiştir.

Anahtar Kelimeler: self servis teknolojisi, hizmet mükemmelliği, işlevsellik, haz, güvenlik/gizlilik, tasarım, özelleştirme, kolaylık, güvence.

DEDICATION

To

my ***Parents***

my ***Sister***

to infinity and beyond forever and ever for all and everything

they did to make my success possible

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I would like to appreciate my God, my parents, and my sister Shahrzad to infinity and beyond forever and ever for all and everything they did to make my success possible on my graduation with Ph.D. in Tourism Management.

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LIST OF SYMBOLS AND ABBREVIATIONS

AGFI	Adjusted Goodness-of-Fit Index
AVE	Average Variance Extracted
BT	Business Traveler
BTS	Bartlett's Test of Sphericity
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMB	Common Method Bias
CMIN	Chi-Square Value in AMOS
CONV	Convenience
CR	Composite Reliability
CUSTOM	Customization
DF	Degree of Freedom
EFA	Exploratory Factor Analysis
ENJOY	Enjoyment
FUNC	Functionality
GFI	Goodness-of-Fit Index
KMO	Kaiser-Mayer Olkin
LT	Leisure Traveler
NFI	Normed Fit Index
RMR	Root Mean Square Residual
RMSEA	Root Mean Square Error of Approximation
SAT	Satisfaction
SE	Service Excellence

SECUR	Security/Privacy
SEM	Structural Equation Modeling
SRMR	Standardized Root Mean Square Residual
SST	Self-Service Technology
TLI	Tucker Lewis Index
α	Cronbach's Alpha Coefficient

Chapter 1

INTRODUCTION

1.1 Introduction

This chapter lays out the essential components that comprise this study. It starts with the introduction of a research topic on the basis of four knowledge bodies: self-service technologies in the tourism industry, service excellence, utility, and consumer theory. This chapter provides a background to this dissertation, which then links to the research problems and knowledge gaps. Finally, it outlines the aims and objectives of the study.

1.2 Background of Research

1.2.1 Service Excellence

With tourists' ever-growing expectations, the tourism industry's future will depend on managing the information and better understanding tourists' needs. In this respect, competitors try to provide a better service experience for their customers/tourists. The more the competitors try, the more familiar this experience will become. The experience that remains in tourists' minds as a "wow experience" that also surpasses their satisfaction level is a pivotal factor in returning them. This level of satisfaction beyond the expectation is known as service excellence (SE) (Ford et al., 2012). In order to provide a new and novel service excellence experience, managers frequently need to review all aspects of service products and service delivery systems.

Service encounter is the most critical venue where service excellence is realized as the embodiment of wow-experience. Knowing that service encounter is the interaction between servers and customers/tourists. During such an interaction, there are some critical moments that are the momentous elements of tourists' assessment of the quality of the service. The (non)success of the tourist experience is subject to manage these moments correctly, which are called "moments of truth" (Carlzon, 1990).

Moments of truth between servers and tourists can either break or shine depending upon delivery of the service or co-creating it with tourists. In this context, self-service technologies (SSTs) are one of the most successful servers in the delivery system, which can serve either alongside personnel or independently to provide tourists with high-tech and high-touch experience (Neuhofer et al., 2013).

Service excellence as a competitive advantage for organizations and as a core competency ─ which most service organizations strive for ─ will effectively attract and retain customers (Groth et al., 2019). Since the quality of interactions between servers and customers is a critical facet of the service experience, the "moment of truth" is referred to the time when a customer interacts with the service provider and develops service relationships with the organization (Bitner, 1995). This is also identified as a critical touch point that needs to be better understood and carefully managed.

Therefore, SSTs, as one of the prosperous developments in the service encounter, has a crucial impact on the moment of truth for customers and the provision of excellent service. Nevertheless, the emphasis on SSTs indispensability is reasonably established (e.g., Kokkinou & Cranage, 2015; Taillon & Huhmann, 2019; Wei et al., 2017).

1.2.2 Self-Service Technology

SSTs are defined as technologies that can enhance customers' ability in terms of producing a service for themselves independently (Meuter et al., 2000). SSTs can improve the delivery process, meet service standards (Taillon & Huhmann, 2019), and provide more services to customers (Kokkinou & Cranage, 2015). SSTs have specific advantages for customers, such as location convenience, efficiently output, and joyfulness (Dabholkar, 1996; Wei et al., 2017).

Different aspects of SSTs in different industries have been studied, such as the adoption aspect of SSTs (Considine & Cormican, 2017; Hilton et al., 2013; Liu et al., 2020), factors affecting the usage of SSTs (J. S. Kim et al., 2013; Lee & Lyu, 2019; Thamaraiselvan et al., 2019; C. Wang et al., 2013), interactions between customers and SSTs (C. Wang et al., 2013), behavioral intention and SSTs (M. Kim & Qu, 2014), and customer satisfaction (Hossain et al., 2019).

1.2.3 Utility and Consumer Theory

This paper draws upon three theories that are borrowed from economics, namely as utility theory, random utility theory, and Lancaster's consumer theory. It is explained by utility theory that tourists decide to consume goods or services for obtaining utility (Bentham, 1996; Johansson, 1994). Mankiw and Taylor (2017) stated that utility is the satisfaction derived by consuming more or a variety of goods and services by tourists.

Since meeting expectations are the focal point of satisfaction (Berman, 2005), the expectation is the utility that tourists are looking for. Nevertheless, the realization of wow experience beyond the expected level of satisfaction is the ultimate level of utility for tourists. Random utility theory explains that tourists' choice is based on the goals

of achieving maximum receivable utility from goods or services (McFadden, 1981); therefore, service excellence is maximum utility.

According to Lancaster's consumer theory, the utility is not because of consumption goods or services; it is due to the characteristics (or attributes) of those goods and services (Lancaster, 1966). Therefore, the effects of these attributes/characteristics on tourists' utility should be carefully studied, and this thesis aims to do that.

1.2.4 Research Problems and Gaps

Apart from what companies claim about their adherence to 'service excellence', nowadays, customers expect service excellence from service providers in the destination they visit. As elaborated above, the significance of service excellence and the vital role of SSTs in enhancing customers' satisfaction are outlined in the literature; however, the significant effects of SSTs on bringing about service excellence have not received attention. For example, the SSTs' service quality and satisfaction have been studied in various contexts (Considine & Cormican, 2017; George & Kumar, 2014; Gunawardana et al., 2015; M. Kim & Qu, 2014; Robertson et al., 2016). And more recently, SSTs' impact on customer satisfaction has been studied (Aslam et al., 2019; J.-H. Kim & Park, 2019; Li, 2020). However, the effect of SSTs and their characteristics/attributes on bringing about service excellence has not been studied so far.

Therefore, the aim of this study is to fill this gap and enrich our understandings of service excellence through the utilization and adoption of SSTs. Moreover, this study aims to understand the effects of SSTs' attributes or characteristics on tourists' utility.

In the literature, it is emphasized that business and leisure travelers are two distinct types of tourists, which have different needs and wants (Kucukusta et al., 2014; Zhang et al., 2019). However, the influence of tourist types (business and leisure travelers) on each of the SSTs' characteristics have not been studied before. Therefore, the moderating effect of tourist types on satisfaction/utility is also considered in order to fill this gap.

1.3 Purpose of the Study

The purpose of this study is to understand how service excellence can be achieved by the utilization and adoption of SSTs, through an integrated perspective of the utility theory, Lancaster's consumer theory, and random utility theory. This research would specifically suggest a conceptual model for a better understanding of service excellence and its antecedents (i.e., SSTs' attributes or characteristics) and then predict their impact on bringing about excellent service to the tourist in the future. This research also aims to examine the mediating role of SSTs satisfaction in the relationship between SSTs and service excellence.

Moreover, this study, by focusing on business travelers and leisure travelers as two distinct categories (Kucukusta et al., 2014; Zhang et al., 2019), aims to investigate the moderating effect of tourist types on satisfaction/utility. Overall, this research aims to understand how SSTs can bring about service excellence for tourists by the moderated mediating effect of satisfaction and tourist types.

1.3.1 Research Objective

The aims of the research proposed the following objectives:

i. Apply the utility theory, Lancaster's consumer theory, and random utility theory to examine the SSTs' attributes or characteristics as the antecedents of service excellence from the customer point of view.

ii. Propose a model of SSTs for service excellence.

iii. Discover the essence of the relationship between each attribute or characteristics of the SSTs and the tourists' satisfaction.

iv. Explore the nature of the relationship between each of the SSTs' attributes or characteristics and the tourists' service excellence.

v. Present suggestions to hotel managers and SSTs' producers in terms of enhancing their implementation and development strategies.

1.3.2 Rationale and Significance of the Study

The importance of this study is due to the following reasons. Service excellence has been recognized as a critical factor for a successful business over the last decade (Asif, 2015). Research has shown the positive effect of service excellence on increasing business profitability (Bates et al., 2003). Service excellence can generate a degree of delight to entice customers to repurchase intention (Schneider & Bowen, 1999). Therefore, service excellence brings about a positive customer experience, increases their word of mouth support, and ultimately enhances their loyalty (Sekhon et al., 2015).

Moreover, since service encounter (e.g., reception in the hotel) is the first interaction of customers with the service providers that has a crucial impact on customers' trust and experience; therefore, this initial encounter is of utmost concern for the managers (Carlzon, 1990). Thus, the role of SSTs in influencing customer's pleasant experiences from the beginning of service encounters is paramount in providing customer satisfaction as well as service excellence.

Knowing that business and leisure travelers have different needs, wants, and perspectives regarding delivered services (Cobanoglu et al., 2003; Kucukusta et al., 2014; Mattila, 1999; Zhang et al., 2019); therefore, in our model, we propose tourist types as the moderator.

1.3.3 Research Questions

In light of the abovementioned background and rationale, the following are the research questions of this dissertation:

RQ1: Can SSTs bring about service excellence for tourist?

RQ2: What are the attributes or characteristics that drive service excellence for tourists?

RQ2.1: Which attributes or characteristics of SSTs are more important for the satisfaction of tourists?

RQ2.2: Which attributes or characteristics of SSTs have the most impact on the service excellence of tourists?

RQ2.3: What are the differences between different attributes or characteristics of SSTs for tourist?

RQ2.4: What is the impact of the type of tourists (i.e., business and leisure travelers) on the importance of attributes or characteristics?

RQ2.5: What is the impact of socio-demographic characteristics (such as age, gender, and education) on the importance of attributes or characteristics?

1.4 Contribution and Originality

The chief technical novelty of this research lies in integrating three theories of utility theory, random utility theory, and Lancaster's consumer theory from economics in the context of social sciences, and mainly in tourism. Furthermore, by providing a comprehensive understanding of SSTs' characteristics as antecedents of service excellence, this research contributes to bridging the gap between theory and practice. To the best of our knowledge, this study is the first in the tourism literature that examines SSTs' characteristics as antecedents of service excellence from customers' point of view.

1.5 Thesis Structure

The thesis consists of five chapters. The first two chapters present an overview of the literature review and research background in self-service, service excellence and the theoretical framework. The rest of the chapters covers the empirical research, methodology, findings, and the thesis's discussion and conclusions. The final part focuses on the implications of results and suggestions for future research. The structure of the thesis is illustrated in Figure 1.

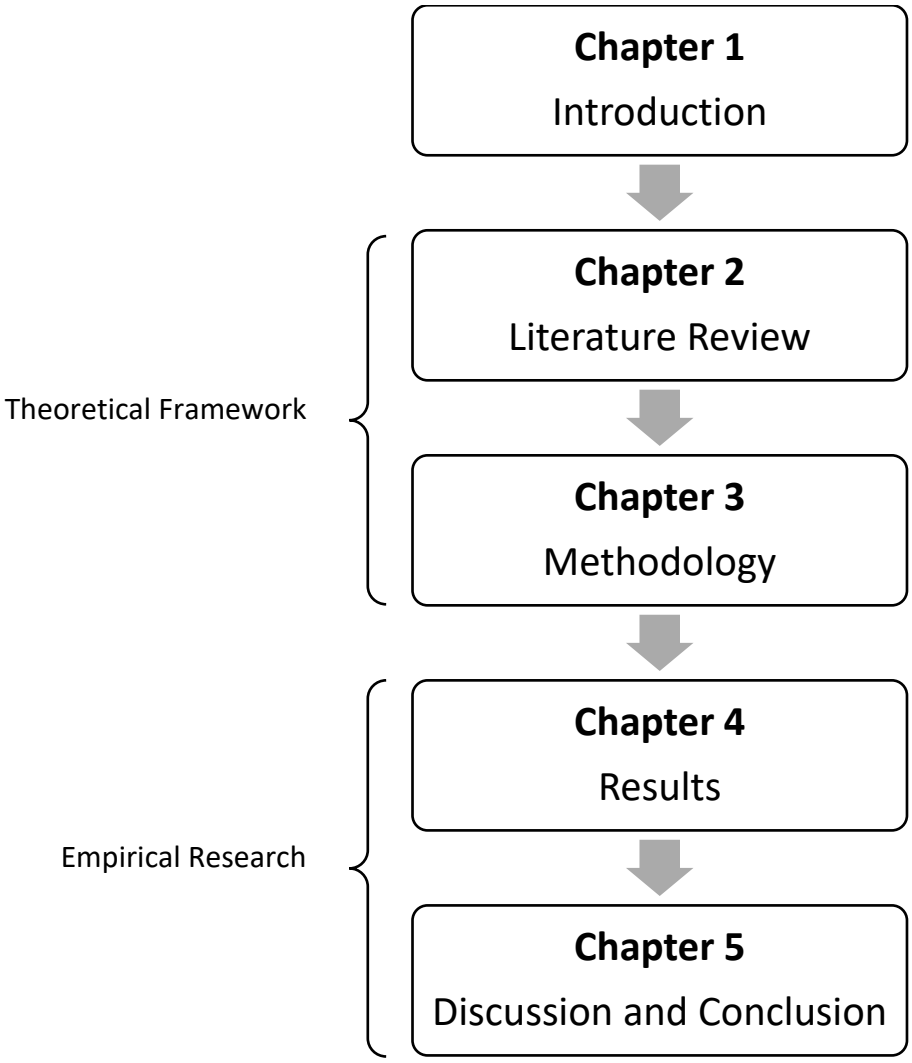

Figure 1: Thesis Structure

Chapter 2

LITERATURE REVIEW

2.1 Introduction

The previous chapter laid out the overall background of the thesis, with a special emphasis on self-service technologies in the tourism industry, service excellence, utility, and consumer theory. This chapter reviews the literature and provides a theoretical understanding of the proposed relationships. It starts with reviewing literature regarding technology in tourism, the advanced technological interface in tourism, self-service technologies, and continued with the ultimate level of delivering service as service excellence, and the characteristics or attributes of these technologies. Moreover, this chapter presents the theoretical framework, hypotheses development, and research model.

2.2 Technology in Tourism

Technology, the term that its use has shifted dramatically since its inception until its culmination in the Second Industrial Revolution, got its final meaning from "Technik" (i.e., a German concept) (Schatzberg, 2006). Technology is defined as "skills, methods, and processes used in the production of goods or services" (Calp, 2020, p. 146). However, technology in tourism "has not only defined methods of making existing processes more efficient but has also provided new ways of performing these existing functions" (A. Ali & Frew, 2013, p. 10). The tourism industry is being revolutionized by technology, which is determines the policy and competitiveness of tourism firms (Buhalis & Law, 2008; Buhalis & O'Connor, 2005). That is why A. Ali

and Frew state that “technology has brought about a metamorphosis of tourism” (A. Ali & Frew, 2013, p. 10).

Throughout the industries, technology is evolving too quickly; however, the tourism and hospitality sector is developing faster (Khatri, 2019). Technology is now at the forefront of the tourism and hospitality industry (Drosos et al., 2017). As a key part of the tourism and hospitality industry, technology assists companies with daily business and enhances customer service. For this reason, it is necessary to maintain the latest technological developments in the travelling industry for hotels, airlines, restaurants and other businesses (A. Ali & Frew, 2013).

Buhalis (2003) noted that “tourism and technology go hand in hand together” (p. 2). Technology is important for destination productivity (Buhalis, 2003) and changes the global tourism infrastructure in terms of operations and structure (Buhalis & O’Connor, 2005). In tourism as a technology-based industry, unlimited use of technology includes, for example, marketing, the management of customers, day-to-day operations and selection of the site, site development, and site monitoring. (A. Ali & Frew, 2013, p. 10).

Growing innovation in the global tourism market has pushed tourism firms to embrace the new technologies with the goal of achieving both competitive advantage and successful development. The tourism sector has also been able to offer reliable and high-quality services as a result of its adoption of the new technology developments. As a result, this sector has undergone considerable transformation in recent years (Abrhám & Wang, 2017). One of the major problems facing developed countries is the growing dependence on information and communication technologies in the

tourism industry. Because only imitating a leading company's strategy would not in itself contribute to efficiency and the use of sophisticated information and communication technologies applications may also be a burden (V. Ali et al., 2013).

A variety of technologies have been described as important for more innovation in the tourism and hospitality industry in recent years. These solutions mainly provide cutting-edge tools and networks that help businesses develop their interactions with partners and customers (Buhalis & Law, 2008). Following the most important and relevant technologies in tourism are introduced.

As Poon (1993) stated, "tourism is a very information intensive activity" (cited in Buhalis, 2003, p. 76), and "a solution for the information need in the tourism and hospitality industry is fundamentally provided by information technology" (Khatri, 2019, p. 77). Poon (1993) predicted that "a whole IT system will quickly spread throughout the tourism sector and there will be no player escaping its consequences" (as cited in Buhalis, 2019, p. 267). In this regard, Buhalis (2003) described information technology (IT) as an external environment for tourism, travel, and hospitality, although technological trends have supported tourism innovation over the last few years (p. 76).

Tourism is also affected by information and communication technologies (ICTs); as Buhalis stated that tourism is bound to be influenced by the new business environment created by the dissemination of information and communications technologies. (Buhalis, 2003, p. 76). ICT in tourism is defined as "the entire range of electronic tools that facilitate the operational and strategic management of organizations by enabling them to manage their information, functions, and processes as well as to

communicate interactively with their stakeholders, enabling them to achieve their mission and objectives" (Buhalis, 2003, p. 7).

ICTs are evolving into a comprehensive, interconnected infrastructure of networked devices and applications that allows for efficient data process and communication for the good of the firms (Buhalis & Law, 2008). ICTs becoming a critical partner of the tourism industry, as Buhalis (2003) noted, information and communication technology enhances organizations' ability to manage their resources, enhance productivity, communicate their policies and offerings and develop partnerships with all their stakeholders, such as consumers, suppliers, organizations in the public sector, stakeholders, and etc. (Buhalis, 2003, p. 6).

New technology in general, and Information and Communications Technologies (ICTs) in particular have developed a number of developments in tourism, for both supply and demand in tourism (Khatri, 2019; Navío-Marco et al., 2018). The constructive integration of ICTs to improve the quality of service by hoteliers is significant in that it will contribute to the aim of satisfying potential customers with extensive customized, up-to-date products and services that meet their needs (Khatri, 2019; Navío-Marco et al., 2018).

Through the embracing of ICTs, tourists can obtain accurate information faster and more efficiently, which leads to an increase in their satisfaction and contributes to increasing customer loyalty (Buhalis & Law, 2008).

Given the strong link between ICT and tourism, it is always difficult to realize if ICT is producing or merely making improvements to demand and supply for tourism easier.

Maybe the truth lies somewhere in the center (Buhalis, 2003). Therefore, Buhalis (2003) stated: “ICTs provide the tools and enable the evolution of tourism demand and supply by facilitating existing needs and business prospects” (p. 76). Because of the growing importance of ICT in tourism, the term “E-Tourism” was coined to describe its usage and implementations.

“E-Tourism” is defined as “reflecting the digitalization of all processes and value chains in the tourism, travel, hospitality and catering industries” (Buhalis, 2003, p. 76). It includes all ICT-based software and tools, which the tourist industry can use to control, schedule, market, develop, and distribute enterprises (Buhalis, 2003; Klein, Hannes Werthner, 1999). E-Tourism can influence almost all the aspects of the tourism and hospitality industry as it is stated by Ukpabi and Karjaluoto (2017) that “e-Tourism has transformed the tourism and hospitality industry and greatly impacted all its sectors” (p. 619).

The importance of e-tourism and its applications in the tourism and hospitality industry is extensively illustrated over the recent years. For example, six main areas of research regarding e-tourism were identified by Milne and Ateljevic (2001): “knowledge management”, “changing consumer tastes”, “new product development”, “empowering small businesses”, “labor market impacts”, and “disintermediation”. However, Buhalis (2003) listed three areas of “consumer and demand dimensions”, “technological innovations”, and “industry functions”. More recently, by reviewing 1412 articles and utilization of the path analysis and clustering method, Chuang et al. (2017) aimed to reveal the trends of publication in the context of e-tourism. The authors tried to highlight the themes and trajectories of literature regarding e-tourism and its related areas of research. Therefore, their efforts resulted in the classification

of e-tourism literature into six main subareas: travel blogs, websites, and social media, information technology and its adoption in the lodging industry, management of business travel, online search, and travel agencies (Chuang et al., 2017).

Augmented Reality (AR) and Virtual Reality (VR) are among the innovative solutions for promoting the tourism and hospitality industry (Çeltek, 2020). AR is defined as "the process of taking and integration digital info either with a live streaming video or with the user's actual, real time atmosphere" (Çeltek, 2020, p. 2). AR is used by GPS-enabled smartphones and enables users to locate a device orientation position. This technology allows the current picture to be blended with the new information (Berryman, 2012; Craig, 2013).

AR enables tourism firms to integrate the modern realm into the real world in an unpredictable way and attract technology enthusiasts who are generally wary of traditional promotional strategies (Craig, 2013). AR combines live view with simulated computer-generated images in real-time to provide an "augmented experience of reality". AR improves users' view of fact and their environment by implementing this approach (Kounavis et al., 2012).

In various ways, tourists may benefit from smartphone applications of augmented reality, including data exchange and sharing as helpful comments on a massive network of locations. Consequently, the interaction between tourists can be improved and the exchange of experiences between tourists established (Çeltek, 2020).

Virtual reality (VR) is defined as "a computer-generated world", which can also be comprehensive and straightforward. A computer-generated universe is supposed to

provide the basic components of any VR scheme, but the participants should be perceptually surrounded (Pan & Hamilton, 2018). The use of virtual reality portrays three-dimensional (3D), computer-generated and immersive worlds. These environments are either model of actual or imaginary universes, and they are aimed at the synthetic representation of data (Çeltek, 2020).

VR will revolutionize tourism marketing and sales (Williams & Hobson, 1995). VR can also be used for marketing and managing a destination (Cheong, 1995). The usability of many tourist-related VR contents such as Google Cardboard (as a cheap VR) makes it easy for us to enjoy virtual city tours as well as sights attractions all over the world. VR has unlimited simulated mass visits to real tourist destinations (Tussyadiah et al., 2018).

Artificial intelligence (AI) is an IT field that focuses on creating an intelligent machine that works and reacts like people. Artificial intelligence is “the simulation of human intelligence processing through machines, especially computer systems”. These mechanisms include “learning” (acquisition and use), “reasoning” (use of rules in order to reach preliminary or definitive results), and “self-correction”. “Expert systems”, “speech recognition”, and “machine vision” are used with specific AI implementations (Çeltek & Ilhan, 2020).

Artificial intelligence or AI refers to a device or a machine’s intelligent performance. A number of artificial intelligence tools in the tourism industry are used in applications of artificial intelligence. The following technologies and what they are used are as: “natural language generation”, “speech recognition”, “machine learning platforms”, “deep learning platforms”, “decision management”, “biometrics”, “text analytics and

natural language processing", "virtual agents", and "robotic process automation" (Çeltek & Ilhan, 2020).

Big data is described as a huge number of data sets that it is impossible to analyze or handle with conventional data management tools (Xu et al., 2020). In a simple way, big data describes itself by "five V". Big data has a large "volume", which represents the massive amount of data. Big data has a large "velocity", which represents the speed of flow of information to be almost real-time. Big data has a large "variety", which represents the sources of the big data to be very diverse and numerous. Big data has "veracity" or "verification, which represents the quality of the huge volume of data. Big data has "value", which represents the ability of big data to transform these data into the business that is precious (Çeltek & Ilhan, 2020).

Big data gathered, such as large-sized and varied data, can be analyzed and described meaningfully, from social media shares, images, journals, videos, text, and recorded files (Kudyba, 2014). Big data was specified as "not only refers to the explosion in the volume of data produced, which was made possible by the development of information storage and dissemination capacities on all sorts of platforms, but the term also refers to a second phenomenon, which involves newfound data processing capabilities" (Monino & Sedkaoui, 2016, p. 1).

In the tourist industry, a lot of big data technology is used. These technologies are provided in the following ways: "internet of things", "data mining", "text mining", "natural language processing", etc. (Çeltek & Ilhan, 2020).

In order to provide useful information, tourism firms should use Big Data technology to improve their knowledge of tourist behavior, recognize development desires and needs, and track tourist geographical position. For example, hotels and restaurants can be recommended to tourists in terms of tastes, online activity, and the location of the area (Elisabeth et al., 2013).

The applications and implementations of big data in tourism are “providing new and competitive products and services”, “better decision support – internal operations”, “personalization of services”, “revenue management – improving pricing strategy” (Çeltek & Ilhan, 2020).

The advancement of service robotics is linked to the advancement of robotics in the industry. Service robots are programmed to perform technical job tasks as well as provide assistance to service users in daily situations (Doğan, 2020). A service robot’s eventual goal is to serve users through the provided information and offering assistance for people at home, in clinics, hotels, or industries sections (Rodriguez-Lizundia et al., 2015).

Fraunhofer Institute for Manufacturing Engineering and Automation (Fraunhofer IPA) defined service robot as “a freely programmable mobile device carrying out services either partially or fully automatically. Services are activities that do not contribute to the direct industrial manufacture of goods, but to the performance of services for humans and institutions” (Decker et al., 2017, p. 349).

The service robots in tourism sector are responsible for tasks like taking orders, welcoming guests, room service, preparing food, check-in and check-out, room

cleansing, and supplying information about the enterprises or the city (Ivanov & Webster, 2017) and providing services in dynamic environments in close relationship with people (Stückler & Behnke, 2011).

The Internet of Things (IoTs) is network connectivity between everyday items, instruments, machines, and computers (Chaouchi, 2013). The IoT is a network that can link any object to the internet using a protocol for communication and exchanging data with a large number of smart devices in order to accomplish “monitoring”, “tracking”, “management”, and “location recognition” goals (Özen, 2020).

The tourism industry has been significantly impacted by digital transformation and the use of Internet of Things. The concepts of “smart tourism”, “smart city”, and “smart destination” were implemented in the context of using IoT technologies (Boes et al., 2016; M. S. Khan et al., 2017; Özen, 2020). Tourist activities that are based on the technology-supported ones are referred to as smart tourism. Accordingly, smart tourism is therefore described as a tourism system that uses smart technologies to develop, administer and supply smart touristic experiences.

It is expected that the use of IoT will be increased considerably in the coming years. Based on the estimation reported by IHS Markit’s 2018 report, 15.4 billion existed IoT devices in 2015 will grow to 75.4 billion devices by 2025 (Markit, 2018, as cited in Özen, 2020).

The following are the key advantages of the usage of IoT-based technologies in tourism destinations: 1. simplifying and enhancement of visitors’ experiences; 2. providing the safety of visitors and tourist destinations; 3. preservation of cultural and

natural resources in tourist destinations; 4. making efficient and effective use of resources at the destination (Özen, 2020).

The principle of gamification was generated with the words “game” and “add/adding” (Özkul et al., 2020). The computer programmer Nick Pelling used this impression for the first time in 2002 (Özkul et al., 2020). While the first description of academic literature in 2008 was recognized, this term was not popular until 2010 (Özkul et al., 2020; Xu et al., 2016). The definitions of gamification in literature are described in several ways.

Gamification defined as “the use of game elements in non-game environments by making games more interesting, increasing the motivation of players” (Özkul et al., 2020, p. 172). According to another definition, gamification is defined as to communicate with game and game mechanics to solve users’ problems (Zichermann & Cunningham, 2011); and as usage in non-gaming settings of game elements (Werbach & Hunter, 2015).

The main purpose of gamification is “to ensure user’s commitment to businesses by contributing to the creation of the impression that they are part of the story designed to attract the user’s attention through the right content and stories” (Özkul et al., 2020, p. 170). While it has been functional in marketing and services for years, it is mostly used primarily in tourism in recent years. Although travel firms are among the first to take advantage of technological advances (Buhalis & Law, 2008), in terms of gamification utilization, the tourism industry is now using games in two main categories, location-based platforms and social media (Xu et al., 2016).

Firms are using gamification models in order to make the services more fun and convenient for their customers. It can be defined as one of the exemplary gamification models introduced to businesses by allowing tourist consumers to gain points for each trip, accommodation, or mobile check-in transaction via mobile applications and gifts in subsequent transactions (Özkul et al., 2020).

There are some good examples of the utilization of gamification; for example, in restaurants, McDonald's game called "Pick N'Play" for mobile users. In airline companies, KLM and Virgin America developed the "Meet & Seat" and "seat-to-seat delivery" features for enabling passengers to share their experiences and communicate (Özkul et al., 2020).

Although a broad variety of technologies are acknowledged in the tourism industry, this dissertation focuses solely on one of the best solutions that information and communication technologies have introduced to the tourism and hospitality industry, namely self-service technologies.

2.3 Self-Service Technology (SST)

Self-service technologies (SSTs), which have advanced the domain of information and communication arenas (Iqbal et al., 2018), have also transformed the way services are delivered to tourists (Djelassi et al., 2018; Vakulenko et al., 2018). SSTs are defined as technologies that can enhance customers' ability in terms of producing a service for themselves independently (Meuter et al., 2000). The concept of SSTs, which initially offered by Dabholkar (1994), is one of the innovative solutions to provide speed (saving time, flextime) and convenience service to the tourists (Dabholkar, 1994, 1996; Kokkinou & Cranage, 2015), as well as consistency (Weijters et al., 2007) and control

(X. Ding et al., 2007) over the service. Self-service technologies also reduce costs (Taillon & Huhmann, 2019), increasing productivity and profitability (Taillon & Huhmann, 2019) for firms.

There are several examples of SSTs in the tourism industry, including self-check-in kiosks in airlines (Taillon & Huhmann, 2019), self-check-in/check-out in hotels (Liu et al., 2020), self-order in restaurants (J. A. Ahn & Seo, 2018), as well as, online bookings and reservations (Schaarschmidt & Höber, 2017). Not to mention the relevant technologies such as ATMs in banking (Aslam et al., 2019), self-scanning (Nijssen et al., 2016) and self-checkout systems (C. Wang et al., 2017), for retail transactions (Chiu & Hofer, 2015).

Meuter et al. (2000) looked into the factors that influence the (dis)satisfaction of the customers with the SSTs in technology-based service encounters. In their study, more than 800 participants were asked to describe their past experience regarding their interaction with SSTs, particularly unforgettable details about satisfaction or dissatisfaction incidents (i.e., the story of (dis)satisfaction, not its reason). The “solved an intensified need”, “better than the alternative”, and “did its job” were identified as the customer satisfaction category. For the “better than the alternative” group, they identified six subgroups of “easy to use”, “avoid service personnel”, “saved time”, “when I want”, “where I want”, and “saved money”. The “technology failure”, “process failure”, “poor design”, and “customer-driven failure” were identified as the customer dissatisfaction category.

Many studies have been conducted on actual usage of SSTs by customers (Collier & Barnes, 2015; Kokkinou & Cranage, 2015; Lee & Lyu, 2016; Nijssen et al., 2016;

Robertson et al., 2016; Rosenbaum & Wong, 2015; Yoon & Choi, 2020), and the impacts of using SSTs in various organizations (Klier et al., 2016). Some authors have investigated customers' perceptions about different SSTs by calibrating the nature of their acquaintances and approaches in different situations (Collier et al., 2015; Lee & Lyu, 2016; Taillon & Huhmann, 2019).

Researchers have attempted to evaluate factors affecting the adoption of SSTs (Fernandes & Pedroso, 2017; Lee & Lyu, 2019). For example, the adoption of SSTs in the retail context was examined, in which authors have shown the important role of customers' perceptions of SSTs in their intention for purchasing the service next time (Fernandes & Pedroso, 2017). In another study in this context, self-checkout (SCO) usage was examined, and the drivers of increasing its usage were shown (Demoulin & Djelassi, 2016). Wei et al. (2016) explored the internal and external factors of adopting SSTs in the tourism sector, which influence the experience of customers. Some researchers have attempted to evaluate customers' choice of choosing SSTs through the cognitive, demographic, and situational determinants (Blut et al., 2016; C. Wang et al., 2012; Yoon & Choi, 2020).

Vakulenko et al. (2018), through a systematic literature review of studies on customer value in self-service kiosks (SSKs), presented an extensive SSK customer value inventory but from the viewpoint of consumer service. Their approach was to provide new insights on the development of consumer value using self-service. From their point of view, the SSKs, including vending machines, information kiosks, ATMs, and other kiosk types, are considered the most diverse SST type. This paper suggests that it is important to distinguish SSKs from the SSTs concept, and they should be separated from each other. Increasing the predictability of consumer behavior in

developing markets with self-service tools is promised to address the gaps that exist in customer value research in SSK. This provides service providers and retailers with exposure to information for enhancing the experience of the consumers and refine service algorithms. The authors proposed that since there is little or no study attention regarding SSKs, the other studies in the future should be concentrated on customer value.

In their study, Djelassi et al. (2018) have classified self-service technologies based on their ability to provide customers with decision-support into two self-scanning and self-checkout as providers and not providers of decision support for the customers. They described that self-scanning by providing customers with a decision support system (such as interactive functions and providing more information) can help them to decide and make their purchases. However, self-checkout systems with less major decision support only help increase the efficiency of the service process. The authors, by considering the waiting time satisfaction (cognitive and affective) as the mediator and moderating effect of different types of SSTs as self-scanning and self-checkout, aimed to understand how customer satisfaction can be affected by the SSTs experience evaluation. Their results revealed that "waiting time satisfaction" (both cognitive and affective) strongly played a mediation effect, suggesting that customer's cognitive and affective waiting time satisfaction when using SSTs can influence their technology experience and satisfaction. However, these effects differ for the different types of SSTs, such that the mediation effect was stronger for self-scanning (more interactive technologies). Accordingly, the authors suggested that the retailers in order to increase the perceived waiting time satisfaction and increase customer satisfaction, should increase the interactivity of the self-service technologies through the integration of decision support functions.

The SSTs' characteristics are determined as the SSTQUAL (self-service technology service quality) dimensions (Lin & Hsieh, 2011). The SSTs' service quality and satisfaction have been studied in various (e.g., (Considine & Cormican, 2017; George & Kumar, 2014; Gunawardana et al., 2015; M. Kim & Qu, 2014; Robertson et al., 2016)).

Iqbal et al. (2018), by evaluating the effects of SSTs service quality (via SSTQUAL scale) in the service sector through the mediating role of customer satisfaction, found that there is a significant positive relation among SSTs service quality with loyalty and behavioral intentions. The results of data analysis from the online survey with 238 respondents show that the satisfaction of the service customers can be enhanced by improving the deliverance of the technology-based service such as SSTs.

By using Mehrabian and Russell's framework ("S–O–R = stimulus – organism – response"), Ahn and Seo (2018) aimed to examine the effect of perceived quality of attributes of the interactive restaurant self-service technology (IRSST) on the affective and cognitive states of customers as well as their consequences behaviors. Therefore, the authors collected data from 568 users of IRSST in different restaurants (e.g., tableside electronic monitor, in-store available iPad, and tabletop multi-touch screen). Their results suggested that two attributes of IRSST customization and functionality can enhance the perceived value of customers and make their responses emotionally positive. However, other attributes of IRSST enjoyment and design have not shown any significant effect. Regarding the non-significantly effect of design and enjoyment attributes of IRSST, authors argued that first, since customers' expectations are increasing day by day, the design and enjoyment of the IRSST is not developed enough to satisfy them. Therefore, the authors suggested that restaurants should pay particular

attention to the increase in the quality of these attributes, not only to meet the standards but also to exceed the expectation of the customers for triggering their responses. Second, is it plausible that customers do not pay attention to the design or enjoyment of the IRSST as long as they can receive enough functionality and customization; therefore, they will not respond to those aspects of IRSTT quality.

In their study, Aslam et al. (2019) examined the relationship between service quality dimensions of ATM and customer satisfaction and loyalty. The results of their study revealed that among the service quality dimensions (i.e., reliability, convenience, responsiveness, ease of use, security, and privacy, and fulfillment), only responsiveness and convenience did not have a significant effect on customer satisfaction, although their effect was positive. These results suggest that fulfillment and convenience are the most and the least important dimensions of the ATM service quality, respectively. The authors regarding reliability have argued that in order to improve the users' satisfaction, managers of the banks should pay attention to the technical and functional aspects of ATM by providing their users with faultless services. Moreover, the authors have suggested that all the users were concerned about their security and privacy and also to be confident that their money is secure; therefore, installing CCTV cameras and on-site security guards can be helpful. This also makes the feel of ease of use for users and subsequently helps them to be satisfied.

In a similar study on the impact of service quality dimensions of the self-checkout systems on customer satisfaction, Fernandes and Pedroso (2017) were aimed to understand how the self-checkout attributes (speed of service delivery, reliability, ease of use, perceived control, and fun/entertainment) can affect the perceived service quality and overall satisfaction of customers in the retail setting (i.e., grocery stores).

Their approach to understanding the influence of self-checkout attributes on post-usage intentions has yielded results in the positive effect of those attributes on perceived quality, overall satisfaction, and patronage intention. The results of this study showed that self-checkout systems are part of the overall retail services experience, in customers' opinion. Therefore, by perceiving the higher level of service quality from self-checkout systems, customers' patronage intention is more likely to increase because they consider that retailers are accountable for providing the service. Moreover, the authors highlighted that retailers should not just incorporate SSTs; instead, they should increase the quality of SSTs attributes that can enhance the customers' perceived quality and, consequently, overall satisfaction, leading to increased return intention.

In Li's (2020) paper, the author was aimed to understand how customers' satisfaction and their revisit intention can be affected by the service quality dimension of SERVQUAL, self-service technology, and corporate image. Therefore, they collected data from 220 customers of Kuala Lumpur luxury hotels in Malaysia. Their results suggested that customer satisfaction and subsequently their revisit intention is significantly affected by the self-service technologies, as well as all the SERVQUAL dimensions except for empathy. Authors suggested that hotel managers should pay attention to that by offering self-service technologies to the customers and attract them, they can retain their customers' satisfaction in the long run.

Although the impact of SSTs on customer satisfaction has been studied by many researchers (Aslam et al., 2019; J.-H. Kim & Park, 2019; Li, 2020); however, understanding the factors that bring about service excellence by adopting SSTs in tourism has not received deserved attention.

2.4 Service Excellence

Service excellence is defined as “delivery of a level of service quality that results in delight” (Johnston, 2007, p. 20). Delight is defined as “an expression of very high satisfaction”, “an extreme expression of positive affect resulting from surprisingly good performance” (Oliver, 2014, p. 22). Satisfaction is about meeting expectations, which is a judgment, whereas delight is about customer affects resulting from this judgment, which is an emotion (Oliver et al., 1997). In Johnston’s qualitative research, service excellence from the customers’ perspective was described as “easy to do business with” (Johnston, 2004, p. 131).

Different authors from different perspectives have defined service excellence. In a study on systematic literature review for the meaning and using excellence, Thürer et al. (2018) have identified the concepts regarding excellence. Their review of the definition for service excellence has provided a list of definitions, as shown in Table 1. They summarized all the definitions and provide a new definition for service excellence as “provision of what the customer wants (or even more); effectiveness” (p. 21).

Moores (1990, p. 18)	Outstanding level of customer service
Mathwick, Malhotra, and Rigdon (2001, p. 42)	Service excellence reflects an inherently reactive response in which the consumer comes to admire a marketing entity for its capacity to serve as a means to a self-oriented end.
Bunzel, Clegg, and Teal (2002, p. 5)	The striving for service excellence that is seen by the hotel's management as the road to business success presupposes the creation of a match between customers' expectations and the service provided by staff.
Keng, Huang, Zheng, and Hsu (2007, p. 353)	Value-added services that exceed ordinary expectations.
Keng and Ting (2009, p. 482)	Generalised consumer appreciation of a service provider who demonstrates expertise and offers a reliable service performance. It is associated with whether service providers provide customers with promised services.
Shobeiri, Laroche, and Mazaheri (2013, p. 103)	Service excellence refers to the degree to which a firm performs ideally and serves as a standard for quality judgments.
Choudhury (2013, p. 529)	Performing the service dependably and accurately is the heart of service marketing excellence.

Figure 2: Service Excellence Definitions
Source: Thürer et al. (2018)

Shobeiri, Mazaheri, and Laroche (2014, p. 888)	Service excellence is reflected in the level to which a firm could serve as an ideal standard for quality, as well as the degree to which it delivers on its promises by showing expertise.
Asif and Gouthier (2014, p. 511)	Service excellence means providing services that both exceed customers' expectations and delight them.
Huang and Liao (2015, p. 274)	Service excellence, through professional evaluations and performance outcomes, also indicates consumers' appreciation of a service provider's delivery on its promise [85]. This kind of value can be acquired through the consumer's appraisal and evaluation of services or products [46].
Ahn, Hyun, and Kim (2017, p. 5)	Service excellence refers to the extent to which a service provider delivers services ideally and demonstrates service promises and expertise (Mathwick et al., 2001). Service excellence is created when consumers appreciate products and services, and reflects consumers' reactive and extrinsic responses to service quality.

Figure 2: Service Excellence Definitions (continue)

Khan (2011) has defined service excellence from the internal marketing perspective as "Service excellence is all about the behavior and attitudes of employees within an organization. ... Excellent, motivated people will have a 'can-do' attitude and be prepared to go the extra mile for clients" (p. 260). In her definition, two things are highlighted. First, in service industries, employees as the internal customers are responsible for providing service excellence to customers, depending on their behavior and attitudes. Second, the terms 'can-do attitude' and 'go the extra mile' are very similar to Johnston's (2004, 2007) service excellence elements, 'delivering the promise' and 'going the extra mile'.

According to Johnston (2004, 2007), service excellence comprises four key elements: delivering the promise; providing a personal touch; going the extra mile; and dealing properly with problems and queries (see Figure 3). The main element is delivering the promise or doing what the organization proclaims would do, which simply means meeting expectations (not exceeding them). Personal touch refers to 'service' and demonstrates how well customers are being taken care of, which can generate some delight for customers. Going the extra mile refers to "anticipating customer's needs" and trivially as "providing a little extra", which is always appreciated. The smallest additional things that organizations can do for their customers have a mutual benefit for customers and organizations. Dealing adequately with problems stems from the fact that customers would be convinced as long as an error is dealt with properly and is recovered (Johnston, 2004, 2007).

Although delighting customers by itself is assumed to exceed the expectations (Grönroos, 2007; Oliver et al., 1997; Rust & Oliver, 2000; Schneider & Bowen, 1999), in Johnston's definition, delight doesn't mean necessarily exceeding the expectations

(Johnston, 2004, 2007). Because as Lashley (1997) stated: “service excellence, concentrating on the consistency and flexibility of service delivery to exceed the expectations of the customer, might not be enough” (as cited in Aiello et al., 2010, p. 187).

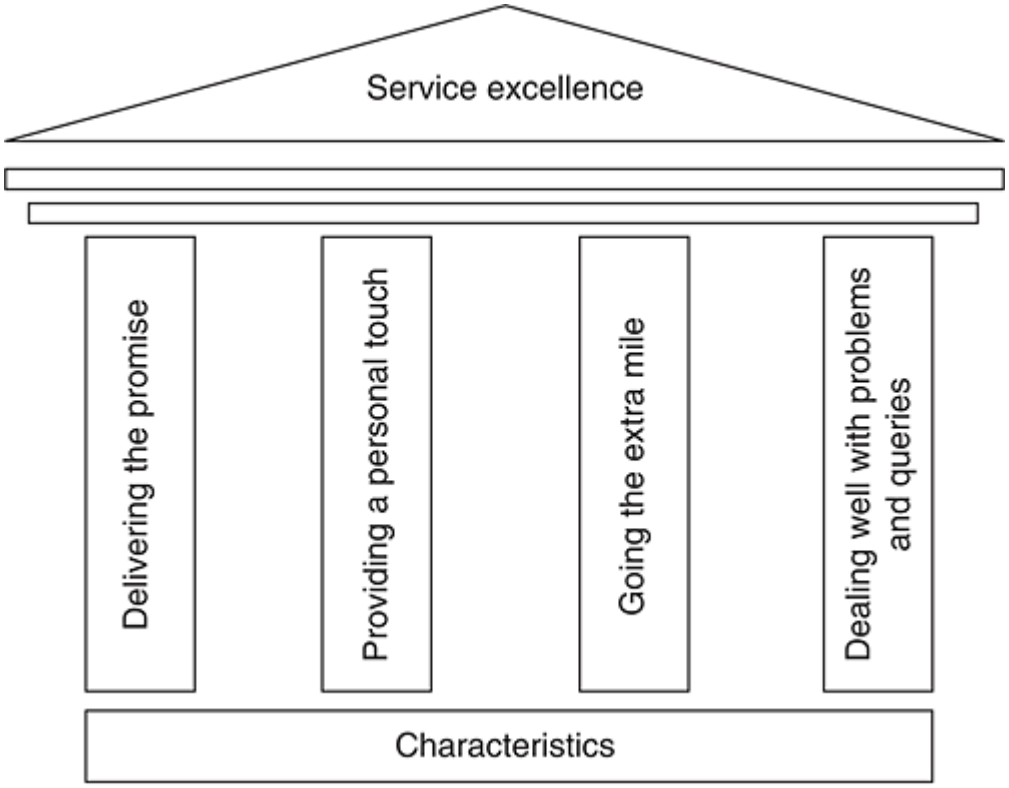

Figure 3: Service Excellence Johnston Model
Source: Adopted from Johnston (2007)

As the most popular service excellence model, Johnston’s model fully concentrates on customers, which is the first model integrating the notion of customer delight as a means of achieving service excellence (Asif, 2015; Gouthier et al., 2012).

Based on Johnston’s model, a new scale for the banking industry was developed in the UK, where an examination of the antecedents of service excellence from the strategic marketing perspective revealed that service excellence is mainly affected by ‘innovation’ and to some extend by ‘reputation’. The ‘technology’ and ‘financial

value' were the second two important antecedents. Antecedents and consequences of service excellence in retail service with SSTs have been validated (Padma & Wagenseil, 2018). In their study, authors tried to compare the service quality and service excellence in terms of their dimensions, measurement, antecedents, and consequences. They addressed that antecedents and consequences of service excellence had not been addressed so far. Therefore, the authors were aimed to develop a new model for addressing service excellence's antecedents and consequences in the retail industry. Their results suggested the following antecedents and consequences for service excellence as: "…service leadership, service culture, quality management and business excellence, service brand image, service innovation, customer engagement and service encounters as antecedents, and employee loyalty, employee pride, customer delight, customer commitment, and brand love as outcomes of retail SE" (p. 431).

Petruska (2012), in his book named "Gemba Walks for Service Excellence: The Step-by-step Guide for Identifying Service Delighters", has defined service excellence from a customer standpoint:

> "Service excellence is all about making customers feel good about spending their hard-earned money and wanting to come back. Humans are social creatures and our need for belonging is great. We want to be accepted by others. We want to be respected above all else, and we want to trust the people we're paying" (p. 57).

He stated that "service is filling someone's need—it's a human transaction". He also described that the goals of service providers should be divided into three goals as "short-term goal of any service provider should be to make people feel good about spending their time and money. Another goal is to earn repeated business, but the long-term goal should be customer advocacy leading to word-of-mouth advertising"

(Petruska, 2012, p. 59). The author also defined four elements as the essentials for service excellence as: “managing customer expectations”, “human performance”, “creating and living team roles”, and “organizing for excellence” (Petruska, 2012, p. 60).

Ford et al. (2012) defined the term “guestology” regarding service excellence as “study the guest, know what that person really wants and expects, and then provide it—plus a little bit more” (p. 476). They described that the managers of leading service organizations spend a great deal of time and money researching their guests in order to make decisions based on three Ss: strategy, staffing, and systems. For example, Singapore Airlines is one of the leading companies in integrating customer service excellence to sustain the culture of service excellence in their company (Wirtz & Johnston, 2003).

The use of information regarding customers in order to develop a business strategy is the concern of managers for the first S, strategy. The information about what customers want, what are their needs and capabilities are available for managers to accomplish their marketing strategy, system design, budgeting, and human resource policies and procedures (Ford et al., 2012).

The second important S, staffing, is a vital driver of the successfulness of a service organization. Because the staff is the factor that delivers service to the customers as Ford et al. (2012) stated: “people make the different” (p. 481). In this regarding the right employees should be assigned for a certain job. Not to forget that they should be well trained (Ford et al., 2012).

Systems and subsystems of the service organizations make the guests' experiences. The last S, system, is concern about delivering the right products and services at the right time. Customers' concern is about meeting their expectations and receiving what is promised by the service providers. Therefore, any failure or reason for that is not acceptable unless it is recovered quickly (Ford et al., 2012).

Cina (1990) suggested five steps to service excellence as first, "knowing a firm's moments of truth (customer contacts)"; second, "gaining inventory of the firm's moments of truth"; third, "assessing importance/performance of each contact"; fourth, "establishing a service management discipline"; and fifth, "implementing the firm's action plan".

Jackson and Humble (1994), regarding the role of information technology in service excellence, stated that:

> "The IT function has been actively involved in helping organizations deliver service excellence. A recent survey carried out by the Centre for Service Excellence shows that 72 per cent of business executives believe IT has contributed to delivering good service, with 96 per cent anticipating a positive contribution in the next five years" (p. 37).

In a study of 500 resort customers in South Korea, the impact of service excellence as one of the experimental value dimensions on co-creation attitude was examined (J. Ahn et al., 2019). The authors aimed to understand how service excellence as a value (i.e., experience value) can affect customer interaction, knowledge sharing, and responsive attitude. Their results revealed that service excellence is of vital co-creation drivers. The authors suggested that providing the hospitality industry with an excellent service experience can advance customer's experimental value. In a similar study, Tsai

and Wang (2017) assessed the effect of service excellence as an experimental value on place food image for customers in branding food tourism.

In a study for developing a framework in order to assess service excellence, Asif and Gouthier (2015) stated that: “service excellence describes a structured approach for providing excellent service quality to achieve customer delight.” (p. 441). They proposed self-diagnostic questions based on the plan-do-check-act cycle to fulfill the organizational structure’s requirements (e.g., team, process, system, behavior, information and communication technology). The authors’ results suggested that the new systematic framework can be used to develop service excellence that can help set the standards.

From a marketing perspective, Hariandja et al. (2014) tried to understand how the capabilities of dynamic marketing, service innovation, and their interaction can affect service excellence. In their qualitative research, the authors used a case study methodology to create a framework for drivers of service excellence. Therefore, the authors interviewed the managers of four and five-star hotels in Indonesia. In their exploratory research, each of the variables was operationalized in order to define their indicators. Therefore, three dimensions for dynamic marketing capabilities (such as market targeting/positioning, market learning, and market sensing), three dimensions for service innovation capabilities (such as transforming, seizing, and sensing), and four dimensions for service excellence (such as service responsiveness, customer’s participation, servicescapes, and service delivery) were classified. Their results revealed that although both dynamic marketing and service innovation capabilities have an influence on achieving service excellence, this influence is recognized to be more substantial for the interaction between two capabilities. Their results suggest that

implementation of service innovation and intensifying dynamic marketing can improve the hospitality industry environment in order to promote service excellence and customer loyalty.

By extending the result of this study and another study, Chuwiruch et al. (2016) examined the effect of service excellence strategy on four and five-star hotel performances in Thailand. In their quantitative research, authors distribute questionnaires to the hotel marketing managers/directors to understand how five service excellence strategies (customer learning focus, service creativity concern, service delivery concentration, service response orientation, and customer relationship awareness) can influence firm performance.

In a study of implementing a service excellence project in order to understand the effect of employee's satisfaction on the customers' satisfaction and loyalty, the mixed methodology used to measure attitudes of the employees and satisfaction of the customers. The results revealed that when employees are well trained and motivated, the satisfaction and loyalty of the customers are highly increased (Engeset et al., 2016). This result is consistent with what Ford and his colleagues (2012) discussed regarding staffing as one of the Ss for achieving service excellence.

By examining the interactive effect of ambidextrous leadership and corporate social responsibility on organizational citizenship behavior in customer-oriented tour-operator organizations in Vietnam, the authors suggested the pathways to service excellence in the tourism industry. In this regard, they expressed that: "tour companies should designate the role and responsibilities of internal stakeholders within their

strategic tourism framework as well as create conditions for them to contribute to tourism service excellence" (Luu et al., 2019, p. 590).

2.5 Theoretical Framework

In deriving research hypotheses and explaining the research problem, this research relies on the basic principles of three theories, utility theory, theory of random utility, and Lancaster's consumer theory.

2.5.1 Utility Theory

The Utility was initially expounded by Jeremy Bentham (1748-1832) in his written work in 1780, published in 1789. In his publication ("Introduction to the Principles of Morals and Legislation"), the utility principles devised. Later, this theory was developed by Kelvin Lancaster in 1966 as "a new approach to consumer theory".

Bentham's Utilitarianism was not much-gotten attention until the nineteenth century (the latter half of the 19th). His completed work remained unpublished except for Bentham's (1996) study, which documented the collection of his work by a few of advocated disciples, such that scholars later have referred to it. The utility theory describes the customers in what manner make a decision for their actual choices and predict their behavior in real life. These choices can be about goods activities, spending time on something, or investigate money for something.

The utility principles were formulated as the essence of an object that brings about happiness, pleasure, benefit, wellness, and advantage (Warnock, 2003). Utility theory explains customers' decision to consume goods or services for obtaining utility (Bentham, 1996). The utility is the satisfaction derived by consuming more or a variety of goods/services (Mankiw & Taylor, 2017).

Although the utility concept tries to explain the phenomena in real life related to individuals' choices, preferences, decisions, and so on, the utility theory is based on two concepts, namely prediction and prescription (Fishburn, 1968). The prediction is about the requirement of predicting the individuals' actual choice behavior. The prescription is about how they are obliged to make decisions (Fishburn, 1968). Therefore, utility theory explains the customers in what manner make a decision for their actual choices and predict their behavior in real life. These choices can be about goods activities, spending time on something, or investigate money for something. The theory explains that customers have to choose from the available choices and forget the other alternatives because of the scarcity of the available resources for customers in their circumstances. As proposed by Fishburn (1970), the decision-making behavior of consumers is the basis of utility theory. The most common model used in early researches is utility theory, which claimed that consumers consume based on the satisfaction that they expected from their choice (Bray, 2008). Therefore, customers' preferences about the effect of goods and services on their utility can be expressed in the form of the utility function (Johansson, 1987).

The utility function (U) for using the two goods x and y is generally shown by $U(x,y)$ to explain that customers' utility can be gained by consuming the goods of x and y. This represents the direct utility function; however, the indirect utility function is shown by $V(p,m)$, which explains the utmost utility of the customers based on a level of price (p) and income (m) (Varian, 1992).

In order to find out the core of utility theory objective, which is to explain how a customer choose which kind and amounts of goods and services, it is considered that the individuals' resources (e.g., customers income) and the conditions of the market

(e.g., the level of prices) are given and do not change (Begg et al., 2014, p 84). The relationship between the amounts of goods buying and change in the prices is defined through the demand function that can be derived through the utility function (by allowing prices to be varied, keeping others constant) (Begg et al., 2014, pp. 84 & 101). However, the focus of this study is on the direct utility function that explores how customers decide to choose different goods and services based on the satisfaction that can be gained from those goods and services.

The main ingredient of utility theory is that consumers of goods or services are "rational" (Begg et al., 2014, pp. 84-85). This behavioral assumption means that a consumer looks for a bundle of goods that could attain the best from his/her choice. Particularly, the bundle of goods placed in the utmost individual's satisfaction will be chosen by a rational consumer.

This theory explains that satisfaction/utility can be gained from SSTs by providing not only high quality of services but also a range of services for tourists. Therefore, tourists who find SSTs useful will try to use them more in order to increase their utility or satisfaction. This implies that by increasing the quality of the SSTs, tourists will decide to use more because their utility/satisfaction can be increased.

2.5.2 Lancaster's Consumer Theory

Lancaster's consumer theory (Lancaster, 1966) indicates that each individual's utility is not because of goods' consumption by itself, rather it is because of goods' attributes or characteristics. This theory has developed on the basis of the utility theory as "a new approach to consumer theory". The value summation of characteristics/attributes of goods determines goods' value. Therefore, the consumption of goods or services is

because of their characteristics/attributes rather than goods or services (Lancaster, 1966).

Utility theory assumes that consumers are rational in terms of choosing the goods or services that can increase their utility. This assumption also describes if a consumer prefers a service, for example, service A to another service B, and prefers service B over C, then rationally prefers service A over C. This means that consumers always choose the ones with the higher obtainable utility. The main question is, are the consumers the same in terms of choosing, for example, service A over B and C, or different consumers might choose differently (Pindyck & Rubinfeld, 2015). Therefore, it is obvious that consumers will show a different behavior, which seems to be hard-weird between them. And this is normal because they have different tastes, and their utility depends upon conditions (i.e., what influences their decisions to choose between alternatives). This is the reason why their behavior should be studied.

Different behavior of consumers back to their different taste and preferences, and the different tastes and preferences come from the characteristics and attributes of a certain good or service. For example, two individuals can choose between two cars as their means of commutation. Although both want to use a car in order to commute between their destinations, why their choices will not always be the same? A car is a car, and can be used for this purpose. Obviously, some factors influence their decisions, which are the attributes of the cars (such as brand, size, and type), and characteristics of the individuals (such as age, gender, education).

In economics studies and particularly in choice modeling studies, they use the term “attributes” as the characteristics of an alternative, whilst they use the term

"characteristics" as individuals' prejudices (or tastes) that represented by the socio-economic variables of the individuals (gender, age, income, and occupation), which are considered as the sources of individuals' choice behavior (Hensher et al., 2015). However, in this study, both terms are used for describing the alternative for two reasons. First, in the tourism industry, might not everyone can easily understand these differences, and second, because we aimed to control the socio-demographic characteristics of the respondents. Hereafter, both terminologies are used interchangeably to describe alternatives.

Lancaster's consumer theory explains that tourists' utility/satisfaction gained from SSTs is because of SSTs' characteristics/attributes. It is necessary to understand which one of these characteristics/attributes indeed causes utility/satisfaction. Therefore, hypothesizing each of SSTs' attributes is required separately.

In this regard, the SSTs' attributes/characteristics are determined as seven dimensions of SSTs service quality (SSTQUAL), namely functionality, enjoyment, security/privacy, assurance, design, convenience, and customization. These dimensions are determined through the scale development process by Lin and Hsieh (2011). The items generate very carefully in the scale development process, and their reliability and validity are assessed and assured (Boateng et al., 2018; Tay & Jebb, 2017). Hence, in this study, these dimensions are utilized and assumed to represent the SSTs, attributes or characteristics that consumers can gain more satisfaction from those characteristics/attributes.

According to this theory, tourists decide to use SSTs because of the attributes/characteristics of the SSTs in order to increase their utility/satisfaction. This

implies that by increasing or improving the quality of each of the attributes/characteristics of the SSTs, tourists will decide to use more because their utility/satisfaction can be increased.

2.5.3 Random Utility Theory

Random Utility Theory (RUT) is introduced by McFadden (1973). Random utility theory has developed on the basis of the utility theory. This theory provides empirical models with the theoretical foundation based on customers' choices among alternatives (e.g., SSTs or frontline employees). Knowing that attributes determine customers' choices; therefore, each attribute's value is significant. Based on this theory, it is assumed that customers choose based on goals of achieving maximum receivable utility from goods or services (McFadden, 1981).

Random utility theory consists of observable and unobservable parts of the individuals' utility achieved by consuming the goods or services (Cascetta, 2009). Therefore, a choice utility is made up of a deterministic term (V) and an error term (e) with a predetermined distribution. The deterministic term stands for observable data capturing from the survey, whereas the error term is independent of the deterministic term, and it indicates the uncertainty of the prediction (Hensher et al., 2015).

The unobservable part of the utility accompanies assumptions about its distribution to model the probability function for predicting the most preferred alternatives over the sample population. So, the indirect utility of an individual in the random utility framework is the function of V and e that shown as $U_i = V(X_i, C_i; \beta) + \epsilon_i$. Where U_i, is the unobservable true indirect utility related to profile i, X_i is an attributes' vector of profile i, C_i is the cost related to profile i, β is a vector of preference parameter and ϵ_i is a random error (with 0 mean) (Hensher et al., 2015).

The choice behavior assumes that it is deterministic for customers (which means there are no errors from their perspective); however, it is stochastic for the researcher (which refers to the researcher' inability in terms of observing everything regarding customers). Hence, the term error in random utility theory is about the uncertainty of the researcher regarding customers' choices. This leads to the assumption that utility is linear-in-parameters, which shows as $U_i = \sum_{k=1}^{n} \beta_k X_{ik} + \beta_c C_i + \epsilon_i$. Where β_k, is the preference parameter related to attribute *k*, X_{ik} is the attribute k in the profile j, and β_c is the parameter on the profile cost (Hensher et al., 2015).

Therefore, random utility theory aims to understand how to achieve the maximum utility while decreasing the random error that is not obvious. This process can be operational and achievable by inserting the attributes/characteristics of goods or services into the model that ultimately will maximize utility. This random part (unobservable part) that researchers aim to reduce these effects as much as possible comes from various sources as follows (Cascetta, 2009):

a) Decision-makers are variegated, and they vary in tastes and preferences. Moreover, an individual decision-maker is inconsistent in her/his taste and preferences.
b) A mistake judgment made by the decision-maker in evaluating the qualities that influence his/her decision.
c) A measurement error made by the modeler when measuring the attributes included within the observed part.
d) Those attributes that influence the decision but are difficult or impossible to measure; therefore, they are not included in the observable part.

e) Some of the attributes used in the model may have an imperfect description of the attributes/factors influencing the decision.

It is assumed that the researcher, by investigating and determining the highly relevant and correct attributes and characteristics of a certain good or service can observe the consumers' behavior as much as possible. Accordingly, by assessing the consumer's behavior it will be possible to understand to what extent those predetermined attributes could truly explain their consumption behaviors.

Consumers who consume more of a certain good or service aim to increase their utility. This more consumption is because of their goal to achieve maximum utility. Consumers want to obtain as much as possible of the utility. This means that they prefer to have more of that goods or services because by increasing consumption of that goods or services, their utility increase, by which they can obtain maximum possible utility. The basis of random utility theory is that individuals are rational decision-makers, maximizing their utility over their choices/alternatives (Cascetta, 2009).

According to random utility theory, consumers aim is to maximize their utility from good's or service's consumption, and their utility comes from two parts, measurable or systematic part which is related to attributes or characteristics of the goods and services that have observed, and the random part that cannot be observed by the researchers. This random part has several sources as aforementioned (Cascetta, 2009), and researchers aim to reduce these effects as much as possible. Random factors are the unknown part of consumers' behavior during the choice process that might have an influence on their decision. It is plausible to have random factors with a mean of

zero (Cascetta, 2009). Therefore, in the context of SSTs, tourists decide to use SSTs in order to maximize their utility, and their utility comes from the measurable part consisting of SSTs' attributes and the random part that is not observable by the researchers.

Through the SSTs, tourists can obtain utility/satisfaction and experience an excellent level of service when their utility gained from SSTs is maximized. According to the random utility theory, when more utility is gained from the SSTs, tourists' satisfaction can be maximized (McFadden, 1981). This is tantamount to the ultimate level of utility gained from SSTs, which is labeled as service excellence or wow experience, beyond the expected level of satisfaction.

2.5.4 Theoretical Justification

Applying three theories of utility, Lancaster's consumer, and random utility, which are highly related to each other, formed the theoretical framework of this research. It is necessary to combine these together and explain how they can describe and support our hypothesis.

Based on the assumption of utility theory, consumers will increase their utility by increasing the consumption of certain goods or services. In the context of SSTs that consumers are tourists, and their consumption is their utilization of SSTs; their utility is their satisfaction. Therefore, by increasing using SSTs, tourists' satisfaction can increase. According to the utility theory, because always more is better, consumers consume more of the goods or services that can increase their utility (Pindyck & Rubinfeld, 2015). Hence, tourists who found SSTs useful or beneficial (for any reason in their mind) will continue to use them in order to increase their satisfaction.

The fact that the alternatives' attributes or characteristics influence consumers' choice is the subject of Lancaster's consumer theory. According to Lancaster's consumer theory, consumers consume goods or services not because of goods or services but rather because of the attributes or characteristics of the goods or services. By extending the utility theory, this theory uses the same assumptions and describes that consumers are rational decision-makers who want to consume a certain good or service in order to obtain utility, which comes from attributes or characteristics of the good. In the context of SSTs, tourists decide to use SSTs in order to be satisfied, and this satisfaction comes from the attributes or characteristics of the SSTs. It means that tourists are the rational decision-makers who choose SSTs over other alternatives (for example, employee-in-contact, etc., depends on the context of SSTs) because of obtaining more utility or satisfaction from SSTs, and this satisfaction is because of SSTs' attributes or characteristics.

The wow experience is in tandem with service excellence. The random utility theory explains the relationship between satisfaction and service excellence by describing tourists' desire to maximize their total utility. Nevertheless, the maximum utility is tantamount to service excellence or the ultimate level of satisfaction gained from SSTs (i.e., based on the SSTs' characteristics).

According to the theories of utility, Lancaster's consumer, and random utility, tourists decide to use SSTs because of the attributes/characteristics of the SSTs in order to increase their utility/satisfaction, and also decide to use more and more as long as those attributes/characteristics can surpass their utility to reach the maximum utility for them. This implies that by increasing or improving the quality of each of the attributes/characteristics of the SSTs, tourists will decide to use more because their

utility/satisfaction not only can be increased but also can be maximized. Therefore, tourist not only can be satisfied with the utilization of SSTs but also can reach the ultimate level of service, namely service excellence.

To sum up, applying three theories, the theoretical argument proposed the seven characteristics of the SSTs as the antecedences of service excellence. It is assumed that tourists can obtain utility/satisfaction through the utilization of SSTs (based on utility theory). Moreover, gaining satisfaction stemmed from SSTs' characteristics (based on Lancaster's consumer theory). It is also supposed that by receiving more (quality or quantity) of those characteristics, their utility will be enhanced to the maximum level known as service excellence (based on random utility theory). This is highly plausible as tourists always looking for maximizing their satisfaction/utility level.

2.6 Hypotheses and Research Model

2.6.1 SSTs' Characteristics and Satisfaction

SSTs' characteristics are defined and elaborated in many studies; however, after examining the origin of most of the citations, it was realized that the exact definition or explanation of the concept remains at best incomplete. Therefore, we have taken great effort to track most of the previous studies to extract and compile the most proper and reasonable characterization for this concept hereafter.

The utility theory explains the relationship between SSTs and satisfaction; knowing the utility is satisfaction and increasing the quality of services received from SSTs will increase tourists' satisfaction/utility. Moreover, SSTs, by providing more and a variety of services, will result in an increase in satisfaction/utility. Lancaster's consumer theory (1966) states that tourists' utility/satisfaction gained from SSTs is not because

of SSTs solely; rather it is because of SSTs' characteristics/attributes. Hereafter, the development of the relationship between SSTs' characteristics and satisfaction is elaborated based on the aforementioned theoretical frameworks.

2.6.1.1 Functionality

The term functionality originated from the Latin *functiō* meaning to perform a function that is intended for users (Holbrook & Hirschman, 1982). The systems that provide users with functions to do their desired tasks will be chosen by them (Goodwin, 1987). Basically, what is expected to be done accurately and dependably is defined as the reliability aspect of service quality (Parasuraman et al., 1988). SSTs' functionality as performance (Dabholkar, 1994), focused on tasks' reliability and accuracy. Meuter et al. (2000) introduced a similar concept as "did its job" to influence customer satisfaction. It has been revealed that there is a positive impact on the customers' usage of SSTs (Dabholkar & Bagozzi, 2002) and their satisfaction and loyalty (Yen & Gwinner, 2003). When customers are dealing with technology and perceive it as easy to understand and operate, it generates a sense of comfort and ease, either mentally or physically (Davis, 1989).

By experiencing the ease of use of technology, customers become repeat users and feel satisfied (Davis et al., 1989; Meuter et al., 2000). This has been revealed regarding the use of SSTs in the retail sector (Weijters et al., 2007; Yen & Gwinner, 2003). Customer satisfaction has also been shown in banking services and airports when SSTs functionality was in operation and usage (Gures et al., 2018; J.-H. Kim & Park, 2019; Lin & Hsieh, 2011; Othman et al., 2020). Therefore, the following hypothesis is proposed:

Hypothesis 1a. (H1a): SSTs' characteristic of functionality is positively associated with satisfaction/utility gained from using SSTs.

2.6.1.2 Enjoyment

The concept of enjoyment has been defined and discussed in many contexts from different perspectives. However, enjoyment in the context of technology-based self-service was introduced for the first time by Dabholkar (1994, 1996), in which if customers find it to be enjoyable, most likely they would use it. Enjoyment from using SSTs not only increases its usage but also enhances customer's appreciation (Dabholkar et al., 2003; Dabholkar & Bagozzi, 2002).

Such a positive effect on customer satisfaction with SSTs has been established for banking services (Alkibsi & Lind, 2013), members of a professional sports organization (Robertson et al., 2016), and passengers in an airport (J.-H. Kim & Park, 2019). In light of the aforementioned evidence, the following hypothesis is proposed:

Hypothesis 1b. (H1b): SSTs' characteristic of enjoyment is positively associated with satisfaction/utility gained from using SSTs.

2.6.1.3 Security/Privacy

In consumer research studies, security and privacy concepts are an important concern when customers interact with technology, especially during involvement in a transaction (G. R. Milne, 2000; Phelps et al., 2001). Privacy is defined as "the ability of the individual to control the terms under which personal information is acquired and used" (Westin, 1967, as cited in Culnan & Armstrong, 1999, p. 105). Security is defined as "the security of personal and financial information" (Yoo & Donthu, 2001, p. 36). Parasuraman et al. (2005, p. 217) defined privacy and security as "protection of personal information" and "protection of users from the risk of fraud and financial loss". Nevertheless, customers' transaction data have advantages for both organizations and customers (Glazer, 1991). However, customers are concerned about

how their personal information will be used (Bloom et al., 1994), which can affect organizations' sales and profit (Culnan & Armstrong, 1999).

The solution for such concern is to provide customers with awareness and give them choices of access to information and use (G. R. Milne, 2000) (see also Kim et al. (2013)). Security and privacy are important dimensions of service quality and satisfaction in SSTs, which are discussed extensively in the banking context (Aslam et al., 2019; Barua et al., 2017), telematics services in automobile (He et al., 2017), and hotel reservation websites (Theodosiou et al., 2019). Accordingly, the following hypothesis is proposed:

Hypothesis 1c. (H1c): SSTs' characteristic of security/privacy is positively associated with satisfaction/utility gained from using SSTs.

2.6.1.4 Assurance

Customers rely on service providers and their reliance depends upon trust (Gefen et al., 2003). What customers keep in their memory is their perception of how well the organization takes care of their welfare, known as reputation (Devlin & Ennew, 1997). The element of reputation is a capital asset for organizations (Eccles et al., 2007). Thus, assurance refers to customers' perception regarding the trust and reputation of SSTs' providers (Lin & Hsieh, 2011). Assurance has been found to be one of the important service quality dimensions of SSTs (Orel & Kara, 2014).

Assurance is shown to positively affect satisfaction with SSTs for customers in banking services (Alkibsi & Lind, 2013). It is also shown that assurance positively influences consumers' participation in co-creating logistics services using SSTs (X. Wang et al., 2019). Thus, the following hypothesis is proposed:

Hypothesis 1d. (H1d): SSTs' characteristic of assurance is positively associated with satisfaction/utility gained from using SSTs.

2.6.1.5 Design

Design is a tangible element of service quality (Parasuraman et al., 1988). The design reflects consumers' demand for up-to-date technologies that facilitate their interactions with SSTs (Zeithaml et al., 2002). These technologies should be aesthetically appealing (Thüring & Mahlke, 2007; Tractinsky, 2004). In the study of the usage behavior of SSTs in Taiwan airport, Ku and Chen (2013) found that when SSTs design is visually appealing, passengers are more likely to be attracted to use them. Design is one of the factors that determine the perceived satisfaction with SSTs (Alkibsi & Lind, 2013; Lian, 2018). This prompts the hypothesis that:

Hypothesis 1e. (H1e): SSTs' characteristic of design is positively associated with satisfaction/utility gained from using SSTs.

2.6.1.6 Convenience

The concept of convenience initially introduced by Meuter et al. (2000). They noted that customers' satisfaction from technology-based service encounters is the result of their convenience with their desired services, which take place "where they want" and "when they want". Later, convenience was conceptualized as the perceived flexibility towards the physical location and operating hours of SSTs as well as overall availability (Berry et al., 2002). This definition has been completed by Collier and Sherrell (2010) as the perceived required effort and time in finding and facilitating the use of SSTs.

With customers co-creating a service, convenience perceive as one of the driving factors for SSTs evaluation before, during, and after a transaction (Collier & Kimes, 2013). In the SSTs literature, convenience is identified as one of the inducers of service

quality (Ding et al., 2011) and customer satisfaction (Kim & Park, 2019; Narteh, 2015). Accordingly, the following hypothesis is proposed:

Hypothesis 1f. (H1f): SSTs' characteristic of convenience is positively associated with satisfaction/utility gained from using SSTs.

2.6.1.7 Customization

The concept of customization is discussed by many authors from different perspectives (e.g., mass-customization, adaptation, standardization, and personalization). Nevertheless, these concepts are not akin and should be referenced attentively (see Ding and Keh (2016), Coelho and Henseler (2012)). Customization in the service industry refers to tailoring the process to the individual consumer (Shostack, 1987). More concisely, customization is defined as "tailoring the service characteristics to meet each customer's specific needs and preferences" (Wirtz & Lovelock, 2016, p. 1162) to have advantages for organizations and customers. For example, customized services can signal high quality of the service (Ostrom & Lacobucci, 1995).

However, the privacy and security of customers' information should be considered by service providers (Bolton et al., 2018). Moreover, service customization brings about more perceived control for their customers (Ding & Keh, 2016) and subsequently enhances their satisfaction (Kim & Park, 2019). It is also shown that customization positively affects satisfaction with SSTs for the customers in restaurants (Ahn & Seo, 2018) and passengers in an airport (J.-H. Kim & Park, 2019). In view of the above findings, the following hypothesis is proposed:

Hypothesis 1g. (H1g): SSTs' characteristic of customization is positively associated with satisfaction/utility gained from using SSTs.

2.6.2 SSTs Satisfaction and Service Excellence

According to the utility theory, the utility is the satisfaction that can be augmented by using SSTs (Mankiw & Taylor, 2017). According to the random utility theory, when more utility is gained from the SSTs, tourists' satisfaction can be maximized (McFadden, 1981). This is tantamount to the ultimate level of utility gained from SSTs, which is labeled as service excellence or wow experience, beyond the expected level of satisfaction. Therefore, the following hypothesis is proposed:

Hypothesis 2. (H2): Satisfaction/utility gained from using SSTs positively affects service excellence.

2.6.3 The Mediating Role of Satisfaction

Therefore, by integrating the multiple aforementioned theories, we proposed that satisfaction/utility is the mediator in the relationship between SSTs' characteristics and service excellence (utility maximization). This prompt the hypothesis that:

Hypothesis 3. (H3): Satisfaction/utility gained from using SSTs mediates the relationship between (a) functionality, (b) enjoyment, (c) security/privacy, (d) assurance, (e) design, (f) convenience, and (g) customization and the service excellence.

2.6.4 Tourist Types as a Moderator

Knowing that business and leisure travelers have different needs, wants, and perspectives regarding delivered services (Kucukusta et al., 2014; Zhang et al., 2019); therefore, in our model, we propose tourist types as the moderator. Thus, the following hypothesis is proposed as:

Hypothesis 4. (H4): Tourist type moderate relationships between (a) functionality, (b) enjoyment, (c) security/privacy, (d) assurance, (e) design, (f) convenience, and (g)

customization and satisfaction gained from using SSTs; assuming gained satisfaction/utility is greater for business travelers than leisure travelers.

In sum, combining hypotheses 1, 2, 3, and 4, we proposed a moderated mediation model for service excellence (i.e., SSTs are related to service excellence via SSTs' attributes). Yet, business travelers are proposed to assign a greater value for the resources provided by SSTs that translate into satisfaction. In contrast, given the nature of leisure travelers, they are more likely to assign a general level of value to SSTs characteristics. Accordingly, the following hypothesis is proposed:

Hypothesis 5. (H5): The mediating effect of gained satisfaction from SSTs on the link between (a) functionality, (b) enjoyment, (c) security/privacy, (d) assurance, (e) design, (f) convenience, and (g) customization and the service excellence depends on tourist types; assuming effects are greater for business travelers than leisure travelers.

The above-described hypotheses and the research model are depicted in Figure 4.

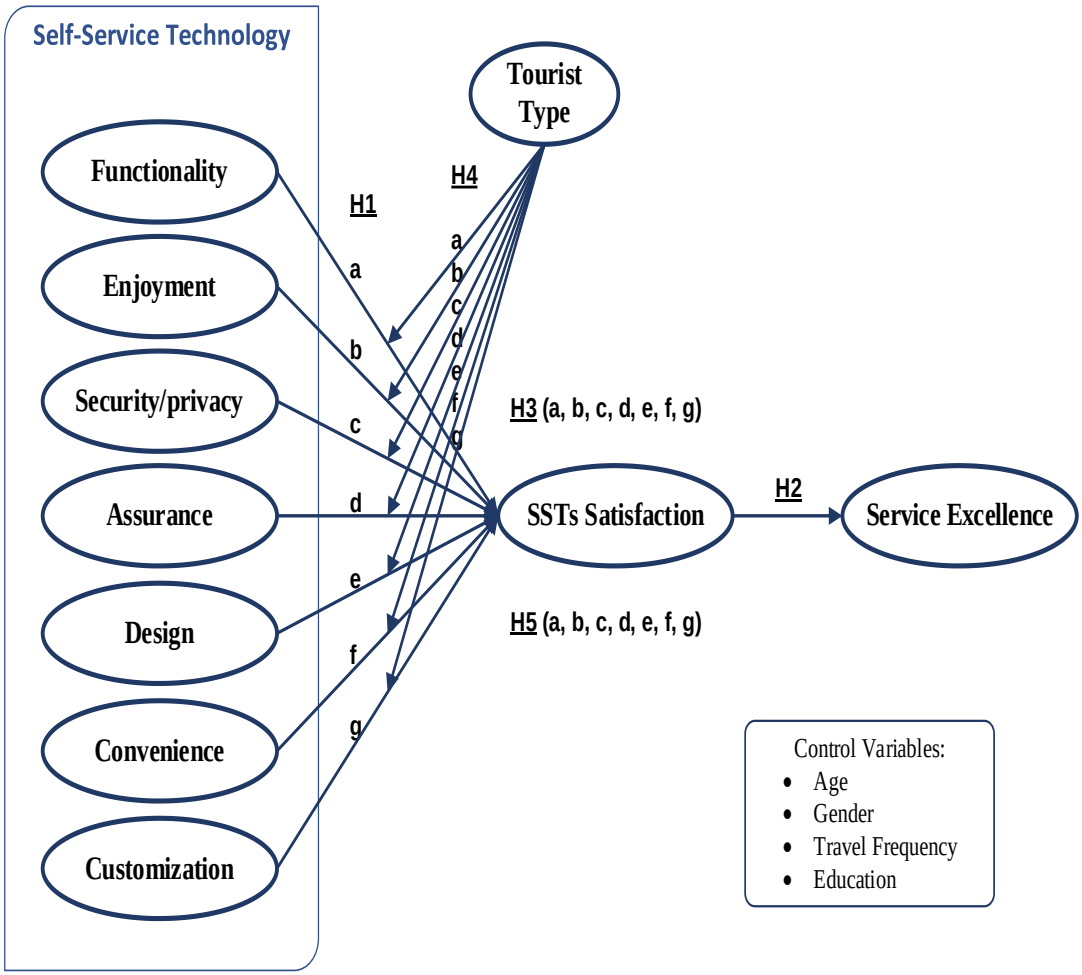

Figure 4: Research Model

Accordingly, the first hypothesis regarding the effect of each of SSTs' characteristics is defined based on the utility theory, in which satisfaction/utility will be increased by increasing the level of those characteristics, for example, by increasing functionality of SSTs. The second hypothesis proposed based on both utility and random theories that explain maximum utility ─service excellence. The third hypothesis uses the same perspective but with the caveat that the SSTs' characteristics may directly or indirectly ─through the satisfaction─ increase the utility level of tourists to the maximum level. This hypothesis emphasizes that satisfaction or utility is the mediator to reach the maximum level of utility or service excellence.

Hypothesis four is based on the fact that two types of tourists, business and leisure travelers, have different needs and wants, which influence their level of satisfaction/utility and ultimately the maximization of that (service excellence), which is also considered as the moderator in this research. Lastly, hypothesis five is built upon all the hypotheses as mentioned earlier and theories to justify and indicate the moderated mediation role of satisfaction and tourist types.

Chapter 3

METHODOLOGY

3.1 Introduction

The details of the research methodology applied in this research are provided in this chapter. In order to link the research hypothesis and proposed model in the previous chapter and empirical results in the next chapter, this chapter aims to describe the research design and research methods utilized in this dissertation. First, it explains the research paradigm and reason for choosing that. Second, it presents the sampling strategy and process of data collection. Third, it provides information about the measures utilized in this research. Fourth, the chapter concludes with strategies utilized for data analysis.

3.2 Research Paradigm

In social studies, different research approaches have suggested; however, making decisions regarding choosing appropriate methodology should be based on the research questions of the research (Abernethy et al., 1999). As the aim of this research is to understand how service excellence can be achieved by the utilization and adoption of SSTs, through an integrated perspective of the utility theory, Lancaster's consumer theory, and random utility theory, the deductive approach is the appropriate approach for the empirical scrutiny in this research.

The deductive approach is on the basis of the relations of the theoretical considerations and a particular domain of research to answer the posed questions (Bryman, 2016).

Therefore, as of the notion of research paradigm (Lewis-Beck et al., 2004), this dissertation has used the quantitative approach.

3.2 Participants and procedure

The data were collected in May 2020 using a computer-based survey via Google Forms from tourists whose travel was organized through travel agencies. To achieve research objectives and understand service excellence drivers, we targeted respondents who had experienced using SSTs during their travel period. Therefore, purposive sampling (Judd et al., 1991) was used accordingly. To mitigate the drawbacks of purposive sampling in terms of the generalizability of results, we tried to collect more data beyond the normal requirement.

According to Hair et al. (2019), having a minimum of five respondents per variable is acceptable for the data analysis. However, a ratio of 10:1 respondents for each parameter is more appropriate, while a minimum of 20 is desirable (pp. 132-133). In this study, the measurement instrument consisted of 27 parameters. Therefore, multiplying 27 parameters by 20 respondents per parameter results in a 540 minimum number of required sample sizes.

To accomplish the process, several travel agencies were contacted in different countries (i.e., North Cyprus, Turkey, Italy, United States, and Germany). The selection of the countries came about as we contacted travel agencies through our network and their network within the country or in other countries. After informing travel agencies about our purpose, they agreed to communicate with their customers on the condition to contact the tourists by themselves. Afterward, the online questionnaires were emailed. The response rate was impossible to calculate, as travel

agencies were the sole authority to contact tourists. By the cut-off date, 627 surveys were retrieved from respondents, which is more than the minimum desirable sample size based on the suggestions of Hair et al. (2019). Tourists' participation was voluntary, and they were assured about their anonymity and confidentiality.

3.3 Instrumentation

SSTs' characteristics were measured using five items for functionality; four items for enjoyment; and two items for security/privacy, assurance, design, convenience, and customization from Lin and Hsieh (2011). Five items were adapted from the scale developed by Sekhon et al. (2015) to measure service excellence. To measure satisfaction with SSTs, three items from the American customer satisfaction index (ACSI) were used (Fornell et al., 1996). Responses to each of the items were elicited on five-point scales ranging from "5 = strongly agree" to "1 = strongly disagree". See Table 1, for the list of scale items.

There are several reasons for using a five-point Likert scale over seven-point or others. First, it is used to increase the response rate and response quality (Buttle, 1996). Second, it became possible to compare reliability coefficients with other research using five-point Likert scales (Saleh & Ryan, 1991). Third, previous research has found that a five-point scale is readily comprehensible to respondents and enables them to express their views (Marton-Williams, 1986).

Table 1: List of Scale Items

Variable	Label
Functionality (*FUNC*)	
I can receive my services with the hotel's SSTs in a short time/quickly.	FUNC_1
The service process of the hotel's SSTs is clear.	FUNC_2
Using the hotel's SSTs requires little effort and easy to use.	FUNC_3
I can get my services done smoothly with the hotel's SSTs.	FUNC_4
Each service item/function of the SSTs is error-free.	FUNC_5
Enjoyment (*ENJOY*)	
The operations of the hotel's SSTs are interesting.	ENJOY_1
I feel good being able to use the SSTs.	ENJOY_2
The hotel's SSTs have interesting additional functions.	ENJOY_3
The hotel's SSTs provide me with all the necessary information.	ENJOY_4
Security/Privacy (*SECUR*)	
I feel safe in my transactions with the hotel's SSTs.	SECUR_1
A clear privacy policy is stated when I use the hotel's SSTs.	SECUR_2
Assurance (*ASSUR*)	
The hotel that is providing the SSTs is well known.	ASSUR_1
The hotel that is providing the SSTs has a good reputation.	ASSUR_2
Design (*DESIGN*)	
The layout of the hotel's SSTs is aesthetically appealing.	DESIGN_1
The hotel's SSTs appear to use up-to-date technology.	DESIGN_2
Convenience (*CONV*)	

The SSTs have operating hours convenient to customers.	CONV_1
It is easy and convenient to reach the hotel's SSTs.	CONV_2
Customization (*CUSTOM*)	
The hotel's SSTs understand my specific needs.	CUSTOM_1
The hotel's SSTs have features that are personalized for me.	CUSTOM_2
Service Excellence (*SE*)	
The hotel's SSTs deliver the promised services.	SE_1
The hotel's SSTs deal with the problems immediately.	SE_2
The hotel's SSTs have the tourist's best interests at heart.	SE_3
The hotel's SSTs are informative.	SE_4
The hotel's SSTs deal with requests promptly.	SE_5
Satisfaction (*SAT*)	
Overall, I am satisfied with the SSTs offered by the hotel.	SAT_1
The SSTs offered by the hotel exceed my expectation.	SAT_2
The SSTs offered by the hotel are close to my ideal types of SSTs.	SAT_3

In this research, a few demographic variables, including age, gender, travel frequency, and education, have been statistically controlled due to their potential relationships with the study variables (Dean, 2008; Elliott & Hall, 2005; Meuter et al., 2003; Pradhan et al., 2018; Weijters et al., 2007). Age was measured using a six-point scale. Education and travel frequency were measured using five-point scales. Gender was coded as a binary variable (0 = female and 1 = male).

The questionnaire was prepared in English. For the pilot study, the questionnaire was translated into three languages (Turkish, Russian, and German) by using the back-translation method (Mcgorry, 2000), which is in line with previous studies (Guliyev et al., 2019). See Appendix A for the details of the questionnaires. Based on feedback from a pilot sample of 30 international tourists in North Cyprus, the instrument was finalized. Since tourists had no difficulty in understanding items, no revision was deemed necessary. The online questionnaire had only one screening question ("Do you have experience of using SSTs in the last twelve months?"). If the answer was 'Yes', they could participate. The 'Required' criterion was applied to all online questionnaire measurement items to prevent missing data.

Having a screening question in the questionnaire helped ensure measuring the experience of customers regarding using SSTs. This is also consistent with many other researchers' approaches to target the right respondents (J. A. Ahn & Seo, 2018; Djelassi et al., 2018; Lee, 2017). Knowing that screening questions not only determine the eligibility of the participants (Czaja et al., 2013, p. 70), they are also a useful technique to increase the comprehension of the questionnaire and target the right group of respondents, especially if a survey is measuring attitudes or behaviors (Lavrakas, 2008, p. 118).

3.4 Data analysis

The data analysis process started with checking the case- and variable-screening. The dataset was subjected to check the normality via skewness and kurtosis (Sposito et al., 1983). The descriptive statistics analysis was utilized in order to quantitatively describe and summarize the features of the collected data in this dissertation. Therefore, for all the scale variables, descriptive and frequency statistics were

performed. Furthermore, the correlation analysis was performed in order to statistically assess the relationship between all the variables.

To test the validity of the instrument the content validity and construct validity should be measured (Byrne, 2013). The content validity is defined as the instrument's adequacy and comprehensibility about what is supposed to measure; and the construct validity refers to the permissible extent of the scale for measuring a certain variable, which assesses through the convergent and discriminant validity (Sekaran & Bougie, 2016). Through the literature review and expert judgment, the content validity was measured (Sekaran & Bougie, 2016). The measurement model was subjected to confirmatory factor analysis (CFA) and the average variance extracted (AVE) to address issues of convergent validity and discriminant validity (Fornell & Larcker, 1981).

The variety of model fit statistics using AMOS 24.0 provided support for CFA consisting of Chi-square (χ^2) of estimate model (CMIN), CMIN/DF (degree of freedom), Goodness-of-Fit Index (GFI), Root Mean Square Error of Approximation (RMSEA), Root Mean Square Residual (RMR), Standardized Root Mean Residual (SRMR), Normed Fit Index (NFI), Tucker Lewis Index (TLI), Comparative Fit Index (CFI), and Incremental Fit Index (IFI) (Hair et al., 2019).

The model fit refers to the permissible extent of the proposed model for fitting the observed data (Schermelleh-Engel et al., 2003). As different estimation methods have different distribution assumptions, the common acceptable approach for minimizing the discrepancy of different estimation methods is to obtain the permissible values for each parameter (Marsh & Grayson, 1995). Therefore, the suitable procedure for

assessing the “good fit” is to simultaneously estimate the various fit indices (Tanaka, 1993). The utilized fit indices in this research, and their threshold (cut-off value) are presented in Table 2.

Table 2: Goodness-of-Fit Indices

Measure	Threshold
Chi-square (χ^2) of estimate model (CMIN)	Significant p-value [1]
CMIN/DF (Normed Chi-Square)	$1 < CMIN/DF < 3$ [1]
Goodness-of-Fit Index (GFI)	> 0.90 [2]
Root Mean Square Error of Approximation (RMSEA)	< 0.07 (with CFI ≥ 0.94) [1]
Root Mean Square Residual (RMR)	≤ 0.08 [1] or ≤ 0.05 [2]
Standardized Root Mean Residual (SRMR)	≤ 0.08 (with CFI > 0.94) [1]
Normed Fit Index (NFI)	> 0.90 [2]
Tucker Lewis Index (TLI)	> 0.94 [1]
Comparative Fit Index (CFI)	> 0.94 [1] or > 0.95 [2]
Incremental Fit Index (IFI)	> 0.90 [2]

Sources: (1) Hair et al. (2019, pp. 636–642);
(2) Meyers et al. (2005, p. 559).

The exploratory factor analysis (EFA) conducted using the maximum likelihood extraction method with varimax rotation, and it was performed prior to CFA to represent the distinctive concepts of measurements. Integration of both EFA and CFA during the theory-test provides parameter estimates that best explain the observed covariance (Anderson & Gerbing, 1988), which is in line with previous studies (Alipour et al., 2021). The adequacy of the sample was assessed through the Kaiser-Mayer Olkin (KMO), and the suitability of the data was assessed through Bartlett's Test of Sphericity (BTS) (Hair et al., 2019). The KMO test indicates the common

variance of variables as a proportion of total variance, while the BTS statistically tests the existence of correlations among the variables.

In order to examine the reliability of the scale measurements, the internal consistency of the constructs should be evaluated to show to what extent the scale's results are stable and consistent over time and across the items of the constructs, which indicate the goodness of the measurement (Sekaran & Bougie, 2016). The reliability of constructs was measured through Cronbach's alpha coefficient (α) and composite reliability (CR) (Bagozzi & Yi, 1988).

To analyze the moderated mediation effect, which is also called conditional indirect effects (Hayes, 2017), the macro PROCESS model 7, V.3.5 for SPSS 25.0 using a bootstrapped 5000 sample size via the 95% confidence interval was utilized (Hayes, 2017). Model 7 allows the indirect effect of an independent variable (X: (a) functionality, (b) enjoyment, (c) security/privacy, (d) assurance, (e) design, (f) convenience, (g) customization) on a dependent variable (Y: service excellence) through mediators (M: SSTs satisfaction) to be moderated (W: tourist types).

The choice of PROCESS over other methods like SEM for analysis in this study has been very appropriate because of two reasons. First, PROCESS and SEM results are largely identical (Hayes et al., 2017); therefore, choosing one over another should be based on other reasons. Second, according to the aims of the study to test the independent variables separately, the PROCESS was chosen for testing hypotheses separately.

When a study is not an experimental design, there will always be the sign of biases regarding research design and data collection; however, these issues can be controlled and resolved (Podsakoff et al., 2012). In order to examine common method bias (CMB), the method of Podsakoff et al. (2003, 2012) was used.

Accordingly, after maintaining the participants' confidentiality and anonymity, the correlation of constructs was explored to check a very high correlation—greater than 0.9 (Bagozzi et al., 1991; Hair et al., 2019). The result of Table 22 for the correlation matrix demonstrated that there is not any very high correlation among the variables, indicating that CMB is not an issue in this research (Hair et al., 2019).

Chapter 4

RESULTS

4.1 Introduction

The methodology used in this study has been thoroughly worked out in the preceding chapter. The findings of the compilation of data and statistical analysis are covered in this chapter. Therefore, this chapter aims at exploring the data collected in this dissertation and gaining a comprehensive interpretation of them.

In the first section, the data collected is descriptively analyzed. This section presents a descriptive analysis of the participants' demographic characteristics, including gender, age, educational level, occupation, marital status, tourist type, travel frequency, and reason for using SSTs. In the next section, the descriptive analysis results for all the scale variables consisting of the descriptive and frequency statistics are presented. Moreover, the results of the test of normality for all the scale variables are presented in this section. The reliability and validity analysis results for all the measurement scales are presented in the third section. Further, the resulting coefficients and model test for the conditional process model can be found in the last section. Moreover, the result of the moderated mediation test is presented in this section.

4.1 Respondents Profile

This section presents a descriptive analysis of the participants' demographic characteristics, including gender, age, educational level, occupation, marital status,

tourist type, travel frequency, and reason for using SSTs. The results of this analysis are presented in Tables 3 to 11.

Table 3: Descriptive Analysis for Gender

Items	Frequency	Percentage (%)
Female	301	48.0
Male	326	52.0
Total	627	100.0

The result of the descriptive analysis for the gender is presented in Table 3. The result showed that little over one-half (52.0%) of respondents were male, and the rest were female (48.0%).

Table 4: Descriptive Analysis for Age

Items	Frequency	Percentage (%)
18-24	53	8.5
25-34	189	30.1
35-44	225	35.9
45-54	86	13.7
55-64	50	8.0
65-above	24	3.8
Total	627	100.0

The result of the descriptive analysis for the age is presented in Table 4. The result showed that the majority of respondents' age (66.0%) ranged from 25–44 years (25-

34 years, 30.1% and 35-44 years, 35.9%). These results also showed that almost the same percentage of the respondents were age ranged from 18-24 and 55-64 years (8.5% and 8.0%, respectively). However, only 3.8 percent of the respondents' age ranged from 65 and above.

Table 5: Descriptive Analysis for Educational Level

Items	Frequency	Percentage (%)
High school degree or lower	65	10.4
Associate degree	139	22.2
Bachelor	280	44.6
Master	104	16.6
PhD	39	6.2
Total	627	100.0

The result of the descriptive analysis for the educational level is presented in Table 5. The result showed that the sample's respondents appeared to be well-educated holders of bachelor degrees (67.4%), master degrees (22.8%), and Ph.D. degrees (6.2%). While 22.2 percent of the respondents had associate degrees, only 10.4 percent of them had high school or lower degrees.

The result of the descriptive analysis for the occupation is presented in Table 6. The result showed that the majority of the respondents had a full-time job (36.0%). While 27.9 percent of the respondents had a part-time job (15.3%) or self-employed/freelance (12.6%), only 7.2 percent of participants were unemployed. Among the respondents, 15.0 percent were students, and 13.9 percent were retired.

Table 6: Descriptive Analysis for Occupation

Items	Frequency	Percentage (%)
Employed Full-time	226	36.0
Employed Part-time	96	15.3
Self-employed / Freelance	79	12.6
Unemployed	45	7.2
Student	94	15.0
Retired	87	13.9
Total	627	100.0

The result of the descriptive analysis for the marital status is presented in Table 7. The result showed that the majority of the respondents were married (55.7%). While 29.8 percent of the participants were single, 14.5 percent of them were divorced, widowed, or separated.

Table 7: Descriptive Analysis for Marital Status

Items	Frequency	Percentage (%)
Single	187	29.8
Married	349	55.7
Divorced/Widowed/Separated	91	14.5
Total	627	100.0

The result of the descriptive analysis for the tourist type is presented in Table 8. The result showed that little over one-half (54.4%) of respondents was leisure travelers, and the rest were business travelers (45.6%).

Table 8: Descriptive Analysis for Tourist Type

Items	Frequency	Percentage (%)
Business	286	45.6
Leisure	341	54.4
Total	627	100.0

The result of the descriptive analysis for the travel frequency is presented in Table 9. The result showed that almost three-quarters of respondents (73.5%) traveled once (41.6%) or twice (31.9%) a year. Among the participants, 19.0 percent of them traveled three-times in a year. While 6.1 percent of the respondents traveled four-times in a year, the participants who traveled five-times or more in a year were the minority (1.4%).

Table 9: Descriptive Analysis for Travel Frequency

Items	Frequency	Percentage (%)
Once	261	41.6
Twice	200	31.9
Three-times	119	19.0
Four-times	38	6.1
Five-times or more	9	1.4
Total	627	100.0

The result of the multiple response analysis for the reasons for using SSTs is presented in Table 10. The result indicated that respondents used SSTs for self-check-in (27.6%),

seeking information (26.0%), self-order (20.7%), and self-check-out (19.5%), as well as other usages (6.1%).

Table 10: Multiple Response Analysis – Reason for Using SSTs

Items	Frequency	Percentage (%)
Self-Check-in	301	27.6
Self-Check-out	213	19.5
Information-Seeking	284	26.0
Self-order	226	20.7
Other usage	67	6.1
Total	627	100.0

Note: * Dichotomy group tabulated at value 1=Yes.

The cross-tabulation analysis results for the reasons for using SSTs and tourist type are presented in Table 11. The results showed that business travelers' frequency of using SSTs was higher in comparison to leisure travelers' self-check-in (70.8%) and self-check-out (68.1%).

Table 11: Cross-Tabulation Analysis – Reason for Using SSTs and Tourist Type

Items		Leisure Traveler	Business Traveler	Total
Self-Check-in	Count	88	213	301
	%	29.2%	70.8%	
	% of Total	15.7%	38.1%	53.8%
Self-Check-out	Count	68	145	213
	%	31.9%	68.1%	
	% of Total	12.2%	25.9%	38.1%

Information-	Count	150	134	284
Seeking	%	52.8%	47.2%	
	% of Total	26.8%	24.0%	50.8%
Self-order	Count	182	44	226
	%	80.5%	19.5%	
	% of Total	32.6%	7.9%	40.4%
Other usage	Count	0	67	67
	%	0.0%	100.0%	
	% of Total	0.0%	12.0%	12.0%
Total	Count	286	273	559
	% of Total	51.2%	48.8%	100.0%

Notes: * Dichotomy group tabulated at value 1=Yes;
Percentages and totals are based on respondents.

According to the results of Table 11, leisure travelers used SSTs for self-order (80.5%). Seeking information was the common reason for using SSTs for both leisure and business travelers (52.8% and 47.2%, respectively). However, only business travelers used SSTs for other usages (100%).

4.2 Descriptive Analysis

In this section, the descriptive analysis results for all the scale variables, including the descriptive and frequency statistics, are presented in Tables 12 and 13 Moreover, the results of the test of normality for all the scale variables are presented in Table 14.

The results of descriptive statistics for the scale variables in Table 12 showed that all of the variables had the mean ranged from 3.11 to 4.29 with the standard deviation ranged between 0.57 and 0.92.

Table 12: Descriptive Statistics of Scale Variables

Variable	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
FUNC_1	4.29	4	4	0.61	3	5
FUNC_2	4.08	4	4	0.69	2	5
FUNC_3	4.17	4	4	0.68	3	5
FUNC_4	4.03	4	4	0.75	3	5
FUNC_5	3.87	4	4	0.87	1	5
ENJOY_1	3.97	4	4	0.76	2	5
ENJOY_2	3.92	4	4	0.74	2	5
ENJOY_3	4.08	4	4	0.74	1	5
ENJOY_4	4.07	4	4	0.71	2	5
SECUR_1	3.89	4	4	0.75	2	5
SECUR_2	4.01	4	4	0.69	3	5
ASSUR_1	3.11	3	3	0.77	1	5
ASSUR_2	3.24	3	3	0.92	1	5
DESIGN_1	3.72	4	4	0.88	1	5
DESIGN_2	3.80	4	4	0.85	2	5
CONV_1	4.12	4	4	0.70	2	5
CONV_2	4.09	4	4	0.74	2	5
CUSTOM_1	3.97	4	4	0.76	2	5
CUSTOM_2	4.07	4	4	0.80	1	5
SE_1	4.17	4	4	0.72	2	5
SE_2	4.08	4	4	0.70	2	5
SE_3	4.18	4	4	0.68	3	5
SE_4	4.29	4	4	0.57	3	5

SE_5	4.11	4	4	0.66	3	5
SAT_1	4.19	4	4	0.73	2	5
SAT_2	4.18	4	4	0.73	2	5
SAT_3	4.09	4	4	0.77	1	5

Note: Std. Deviation = Standard Deviation.

The descriptive analysis results for the scale variables are presented in Table 13. The results of the frequency and percentage regarding the perceptions of the respondents to each item of the questionnaire revealed that for the FUNC variable on average, the majority (79.4%) of them were agreed (48.8%) or strongly agreed (30.6%) with the functionality of the SSTs.

Table 13: Descriptive statistics of Likert Scale Questions

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
Variable	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
FUNC_1	0	0.0	0	0.0	50	8.0	345	55.0	232	37.0
FUNC_2	0	0.0	6	1.0	107	17.1	345	55.0	169	27.0
FUNC_3	0	0.0	0	0.0	100	15.9	320	51.0	207	33.0
FUNC_4	0	0.0	0	0.0	169	27.0	270	43.1	188	30.0
FUNC_5	6	1.0	19	3.0	188	30.0	251	40.0	163	26.0
FUNC_Avg.	1	0.2	5	0.8	123	19.6	306	48.8	192	30.6
ENJOY_1	0	0.0	19	3.0	132	21.1	326	52.0	150	23.9
ENJOY_2	0	0.0	6	1.0	182	29.0	295	47.0	144	23.0
ENJOY_3	6	1.0	6	1.0	94	15.0	345	55.0	176	28.1

ENJOY_4	0	0.0	13	2.1	100	15.9	345	55.0	169	27.0
ENJOY_Avg.	2	0.2	11	1.8	127	20.3	328	52.3	160	25.5
SECUR_1	0	0.0	7	1.1	194	30.9	288	45.9	138	22.0
SECUR_2	0	0.0	0	0.0	145	23.1	332	53.0	150	23.9
SECUR_Avg.	0	0.0	4	0.6	170	27.0	310	49.4	144	23.0
ASSUR_1	13	2.1	113	18.0	301	48.0	194	30.9	6	1.0
ASSUR_2	25	4.0	82	13.1	288	45.9	182	29.0	50	8.0
ASSUR_Avg.	19	3.0	98	15.6	295	47.0	188	30.0	28	4.5
DESIGN_1	13	2.1	19	3.0	219	34.9	257	41.0	119	19.0
DESIGN_2	0	0.0	31	4.9	207	33.0	245	39.1	144	23.0
DESIGN_Avg.	7	1.0	25	4.0	213	34.0	251	40.0	132	21.0
CONV_1	0	0.0	7	1.1	100	15.9	332	53.0	188	30.0
CONV_2	0	0.0	7	1.1	125	19.9	301	48.0	194	30.9
CONV_Avg.	0	0.0	7	1.1	113	17.9	317	50.5	191	30.5
CUSTOM_1	0	0.0	7	1.1	169	27.0	288	45.9	163	26.0
CUSTOM_2	6	1.0	13	2.1	107	17.1	307	49.0	194	30.9
CUSTOM_Avg.	3	0.5	10	1.6	138	22.0	298	47.4	179	28.5
SE_1	0	0.0	13	2.1	82	13.1	320	51.0	212	33.8
SE_2	0	0.0	6	1.0	113	18.0	332	53.0	176	28.1
SE_3	0	0.0	0	0.0	100	15.9	314	50.1	213	34.0
SE_4	0	0.0	0	0.0	38	6.1	370	59.0	219	34.9
SE_5	0	0.0	0	0.0	107	17.1	345	55.0	175	27.9
SE_AVG.	0	0.0	4	0.6	88	14.0	336	53.6	199	31.7
SAT_1	0	0.0	7	1.1	100	15.9	288	45.9	232	37.0

SAT_2	0	0.0	13	2.1	82	13.1	314	50.1	218	34.8
SAT_3	7	1.1	6	1.0	100	15.9	326	52.0	188	30.0
SAT_AVG.	2	0.4	9	1.4	94	15.0	309	49.3	213	33.9

Notes: Freq. = Frequency;
Avg. = Average.

Moreover, the results of Table 13 revealed that a little over half of the respondents were agreed with the enjoyment of the SSTs (52.3%, on average). Almost half the participants were agreed with the security/privacy of the STs (49.4%, on average), while none of them was strongly disagreed. However, for the ASSUR variable, on average, 47.0 percent of the respondents were neither agreed nor disagreed with the assurance variable. This is while for the DESIGN variable, on average, participants were almost equally neutral (34.0%) or agreed (40.0%) with the design of the SSTs. For both CONV and CUSTOM variables, on average, respondents were mainly agreed (50.5% and 47.7%, respectively) and strongly agreed (30.5% and 28.5%, respectively) with the convenience and customization of the SSTs.

For the SE variable, on average, the majority (85.4%) of the participants were agreed (53.6%) or strongly agreed (31.7%) with the service excellence gained from SSTs, while none of them strongly disagreed. Regarding the SAT variable, on average, almost half of the respondents were agreed with satisfaction gained from SSTs (49.3%), meaning they were satisfied with SSTs. This is while, on average, 33.9 percent of the participants were strongly agreed or highly satisfied with SSTs.

Table 14: Normality Test for the Scale Variables

	Skewness	Std. Err. of Skewness	Kurtosis	Std. Err. of Kurtosis
FUNC_1	-0.238	0.098	-0.609	0.195
FUNC_2	-0.282	0.098	-0.281	0.195
FUNC_3	-0.225	0.098	-0.846	0.195
FUNC_4	-0.050	0.098	-1.240	0.195
FUNC_5	-0.382	0.098	-0.121	0.195
ENJOY_1	-0.371	0.098	-0.188	0.195
ENJOY_2	-0.011	0.098	-0.861	0.195
ENJOY_3	-0.843	0.098	1.848	0.195
ENJOY_4	-0.445	0.098	0.082	0.195
SECUR_1	0.026	0.098	-0.871	0.195
SECUR_2	-0.010	0.098	-0.872	0.195
ASSUR_1	-0.332	0.098	-0.212	0.195
ASSUR_2	-0.181	0.098	0.078	0.195
DESIGN_1	-0.432	0.098	0.416	0.195
DESIGN_2	-0.097	0.098	-0.801	0.195
CONV_1	-0.363	0.098	-0.263	0.195
CONV_2	-0.307	0.098	-0.627	0.195
CUSTOM_1	-0.102	0.098	-0.869	0.195
CUSTOM_2	-0.811	0.098	1.072	0.195
SE_1	-0.591	0.098	0.146	0.195
SE_2	-0.281	0.098	-0.414	0.195
SE_3	-0.245	0.098	-0.870	0.195
SE_4	-0.098	0.098	-0.550	0.195

SE_5	-0.122	0.098	-0.734	0.195
SAT_1	-0.481	0.098	-0.461	0.195
SAT_2	-0.606	0.098	0.119	0.195
SAT_3	-0.870	0.098	1.692	0.195

Note: Std. Err. = Standard Error.

The result of the normality test for the scale variables is presented in Table 14. The results showed that the skewness and kurtosis of the scale variables were ranged within the ±3, indicating that all variables had normal distribution (Sposito et al., 1983).

4.3 Reliability and Validity of Measurement

4.3.1 Reliability of Measurement Scales

The result of the reliability analysis for all the measurement scales is presented in Table 15. The result revealed that all coefficient alphas (α) of constructs were greater than 0.70 as recommended by Nunnally (1994), which provided support for the internal consistency of all constructs. The service excellence scale shows the highest coefficient alpha value (0.909), while convenience indicates the lowest coefficient alpha value (0.732). There was no item with an item-total correlation value of less than 0.50. Therefore, none of the items was deleted in this step.

Table 15: Reliability Analysis

Items	Item-Total Correlation	Cronbach's Alpha
Functionality		0.887
FUNC_1	0.818	
FUNC_2	0.670	
FUNC_3	0.781	

FUNC_4	0.771	
FUNC_5	0.654	
Enjoyment		0.887
ENJOY_1	0.805	
ENJOY_2	0.639	
ENJOY_3	0.809	
ENJOY_4	0.768	
Security/Privacy		0.758
SECUR_1	0.613	
SECUR_2	0.613	
Assurance		0.817
ASSUR_1	0.700	
ASSUR_2	0.700	
Design		0.804
DESIGN_1	0.672	
DESIGN_2	0.672	
Convenience		0.732
CONV_1	0.578	
CONV_2	0.578	
Customization		0.836
CUSTOM_1	0.720	
CUSTOM_2	0.720	
Service Excellence		0.909
SE_1	0.807	
SE_2	0.638	

SE_3	0.871	
SE_4	0.729	
SE_5	0.831	
Satisfaction		0.860
SAT_1	0.846	
SAT_2	0.590	
SAT_3	0.786	

In order to represent the distinctive concepts of measurements, prior to confirmatory factor analysis, the exploratory factor analysis was performed. Therefore, a total number of 27 items was used for factor analysis using maximum likelihood as the extraction method utilizing varimax rotation with Kaiser Normalization. The results of EFA are presented in Tables 16 to 18.

Table 16: Exploratory Factor Analysis

Factor / Construct	Item	Initial Item Loading ¥
Factor 1: Functionality	FUNC_1	0.929
	FUNC_3	0.844
	FUNC_4	0.789
	FUNC_2	0.625
	FUNC_5	0.598
Factor 2: Service Excellence	SE_1	0.847
	SE_3	0.841
	SE_5	0.730
	SE_4	0.674

	SE_2	0.533
Factor 3: Enjoyment	ENJOY_3	0.869
	ENJOY_1	0.848
	ENJOY_4	0.706
	ENJOY_2	0.495
Factor 4: Satisfaction	SAT_1	0.886
	SAT_3	0.816
	SAT_2	0.508
Factor 5: Customization	CUSTOM_2	0.847
	CUSTOM_1	0.777
Factor 6: Security/Privacy	SECUR_1	0.844
	SECUR_2	0.622
Factor 7: Design	DESIGN_1	0.781
	DESIGN_2	0.728
Factor 8: Convenience	CONV_2	0.752
	CONV_1	0.729
-	ASSUR_1	-
	ASSUR_2	-

Note: (-) = Dropped during EFA due to cross-loading;
¥ = Standardized Loading;
Extraction Method = Maximum Likelihood;
Rotation Method = Varimax with Kaiser Normalization.

The result of exploratory factor analysis in Table 16 showed that the pool of items captured eight factors. Dropping two items of assurance due to cross-loading during the EFA leads to eliminate the construct from the scale, which no longer will be included in the subsequent analysis.

Table 17: Sample Adequacy and Suitability of the Data

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.839
Bartlett's Test of Sphericity	Approximate Chi-Square	10381.388
	degree of freedom	300.000
	Significance	0.000

The results of sample adequacy and suitability of the data are presented in Table 17, in which the adequacy of the sample was assessed through the Kaiser-Mayer Olkin (KMO), and the suitability of the data was assessed through Bartlett's Test of Sphericity (BTS). The results revealed that the KMO index value is greater than 0.8, indicating a meritorious level of prediction (Hair et al., 2019), which means that each variable can be predicted by other variables (0.839 out of 1.000).

The results also revealed that the BTS test was significant (sig. = 0.000, $p < 0.050$), which indicates the appropriateness of the data for the factor analysis. When the BTS test is significant, it shows that the data do not create an identity matrix, which shows the suitability of the data for the factor analysis. The KMO and BTS test results indicate data are adequate in this study (Hair et al., 2019). The findings of the KMO and BTS tests demonstrate that data meet the basic criteria for the factor analysis.

The appropriateness of the explained variance extracted from eight factors in this study was validated through the percentage of variance extraction. The eigenvalues are provided in Table 18, and the total variance explained and its cumulative percentages are given. In social sciences, a minimum of 60 percent for the total variance explained from the combination of all the factors is deemed to be acceptable (Hair et al., 2019).

Table 18: Total Variance Explained – Exploratory Factor Analysis

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings	
	Total	% of Var.	Cum. %	Total	% of Var.	Cum. %	Total	% of Var.
1	8.112	32.447	32.447	7.656	30.625	30.625	3.452	13.809
2	3.212	12.848	45.295	2.860	11.440	42.065	3.387	13.548
3	1.723	6.894	52.188	1.480	5.920	47.985	2.684	10.737
4	1.664	6.657	58.845	1.231	4.924	52.910	2.015	8.061
5	1.537	6.149	64.994	1.160	4.642	57.552	1.498	5.994
6	1.196	4.784	69.778	0.868	3.473	61.025	1.423	5.694
7	1.052	4.210	73.987	0.916	3.665	64.690	1.396	5.585
8	1.001	4.004	77.992	0.934	3.736	68.426	1.250	4.999

Notes: Var. = Variance;
Extraction Method = Maximum Likelihood;
Rotation Method = Varimax with Kaiser Normalization.

The results of total variance explained in exploratory factor analysis are provided in Table 18. The results showed that the eight extracted factors/constructs account for 77.992 percent of the total variance (68.426 percent of the common variance), which have an eigenvalue greater than 1, as shown and confirmed in Figure 4. The first factor (functionality) explained the largest percentage of the total variance (32.447%), which emerged as the most important factor. Service excellence, as the second factor, accounted for 12.848 percent of the total variance. The third, fourth, and fifth factors, explained the 6.894, 6.657, and 6.149 percent of the total variance, represented the enjoyment, satisfaction, and customization factors, respectively. Factors of security/privacy, design, and convenience explained 4.784, 4.210, and 4.004 percent of the total variance as of factors sixth to eighth, respectively.

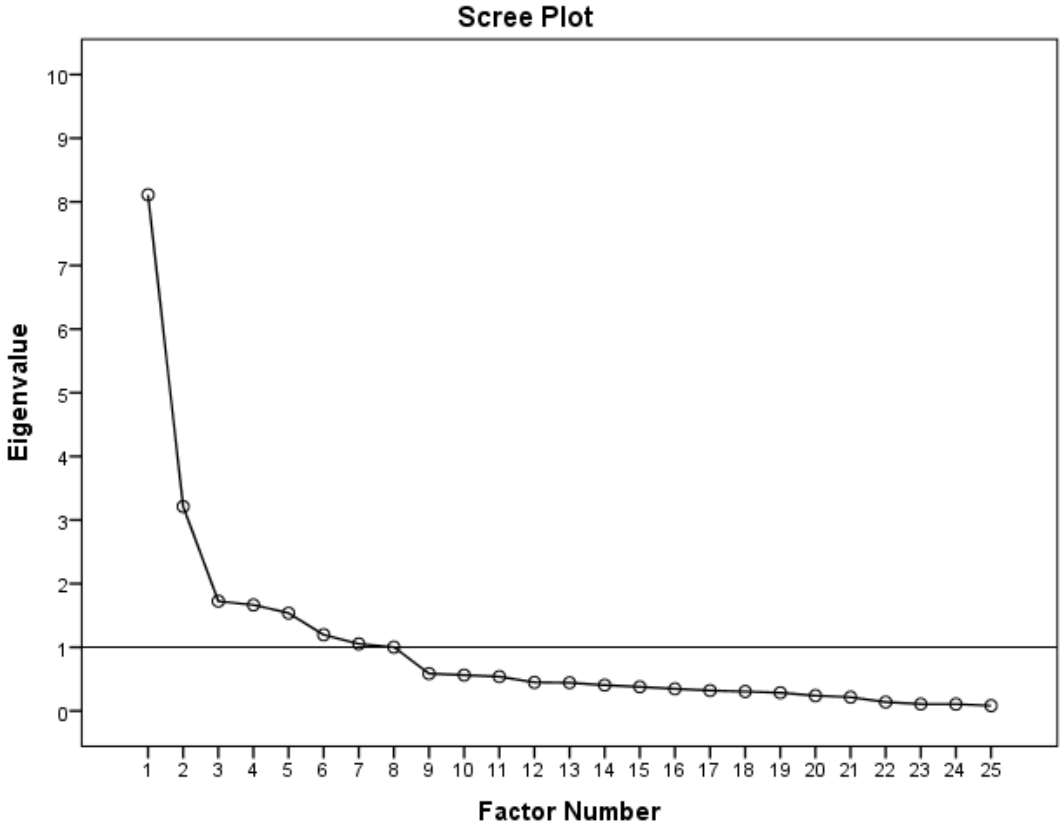

Figure 5: Scree Plot - Exploratory Factor Analysis

Figure 5 graphs the eigenvalues (total variance explained) against the factors, which determined the eight factors to be retained in the exploratory factor analysis. The eight factors are shown to have eigenvalues of greater than one and should be retained as significant.

After confirming the model with the unique constructs through the EFA, in order to calculate the composite reliability (CR) and other indicators, the CFA was performed to take the final factor loadings. Therefore, the results of CFA will present in the next section; however, based on the result of CFA and having standardized factor loadings, the result of composite reliability are presented here in Table 19. The results showed that all the constructs had CR values ranged from 0.757 to 0.919, all greater than 0.70 as its threshold value (Bagozzi & Yi, 1988). Having greater values of 0.70 from the

cut-off value of composite reliability, together with αs, provided support for the internal consistency of the constructs.

Table 19: Composite Reliability

Construct	Composite Reliability
Functionality	0.914
Enjoyment	0.906
Security/Privacy	0.760
Design	0.806
Convenience	0.757
Customization	0.847
Service Excellence	0.919
Satisfaction	0.895

4.3.1 Validity of Measurement Scales

The result of confirmatory factor analysis (CFA) is presented in Table 20. The results of the assessment for convergent and discriminant validity are presented in Tables 21 and 22.

Table 20: Confirmatory Factor Analysis

Items	Standardized Loadings	t-Values	AVE
Functionality			0.683
FUNC_1	0.854	26.374	
FUNC_2	0.666	18.934	
FUNC_3	0.969	31.179	

FUNC_4	0.881	26.741	
FUNC_5	0.726	20.202	
Enjoyment			0.708
ENJOY_1	0.978	32.358	
ENJOY_2	0.781	21.734	
ENJOY_3	0.831	25.358	
ENJOY_4	0.758	22.301	
Security/Privacy			0.613
SECUR_1	0.779	18.609	
SECUR_2	0.787	18.799	
Design			0.675
DESIGN_1	0.861	20.270	
DESIGN_2	0.781	18.579	
Convenience			0.617
CONV_1	0.912	13.418	
CONV_2	0.634	11.467	
Customization			0.737
CUSTOM_1	0.947	21.251	
CUSTOM_2	0.760	17.693	
Service Excellence			0.696
SE_1	0.913	29.331	
SE_2	0.720	20.399	
SE_3	0.942	31.055	
SE_4	0.721	20.669	
SE_5	0.848	25.937	

Satisfaction			0.743
SAT_1	0.890	26.657	
SAT_2	0.702	18.245	
SAT_3	0.971	30.121	

Note: AVE = Average Variance Extracted.

The result of the confirmatory factor analysis in Table 20 revealed that all factor loadings were ranged from 0.634 to 0.978, with significant t-values (>1.96). The results of goodness-of-fit statistics for CFA, as are presented in Table 21, demonstrated a good fit of the eight-factor measurement model to data on the basis of various model fit statistics. These results showed that the chi-square of the estimated model had a significant p-value (χ^2 = 679.494, p = 0.000), and its ratio on the degree of freedom was less than 3:1 (χ^2/df = 2.831) (Hair et al., 2019, pp. 638, 642). Moreover, RMSEA, SRMR, and RMR values (0.054, 0.0496, and 0.027, respectively) were less than their cut-off values (0.07, 0.08, and 0.05, respectively) (Hair et al., 2019, p. 642; Meyers et al., 2005, p. 559). In addition, the values of GFI, NFI, TLI, CFI, and IFI (0.919, 0.936, 0.946, .957, and 0.957, respectively) were greater their cut-off values IFI (0.90, 0.90, 0.94, 0.95, and 0.90, respectively) (Hair et al., 2019, p. 642; Meyers et al., 2005, p. 559).

Moreover, the average variance extracted (AVE) for all constructs was greater than the desirable cut-off value of 0.50 (Fornell & Larcker, 1981); therefore, all measures exhibited support for convergent validity. The issue of discriminant validity was assessed by which the square root of AVEs was greater than inter-construct correlations (Fornell & Larcker, 1981), as shown in Table 22. Taken together, these results indicate the strong psychometric properties of measures.

Table 21: Goodness-of-Fit Statistics

Measure	Estimate	Interpretation
Chi-square (χ^2) (CMIN)	679.494 (p = 0.000)	Significant
CMIN/DF (Normed Chi-Square)	χ^2/df = 2.831 (df = 240)	Excellent
Goodness-of-Fit Index (GFI)	0.919	Excellent
Root Mean Square Error of Approximation (RMSEA) [90% CI]	0.054 [0.049, 0.059], PClose=0.079	Excellent
Root Mean Square Residual (RMR)	0.027	Excellent
Standardized Root Mean Residual (SRMR)	0.0496	Excellent
Normed Fit Index (NFI)	0.936	Excellent
Tucker Lewis Index (TLI)	0.946	Excellent
Comparative Fit Index (CFI)	0.957	Excellent
Incremental Fit Index (IFI)	0.957	Excellent

Notes: df = degree of freedom;
CI=confidence interval;
PClose: P-value of close fit.

The correlations among all variables of the study were significant (Table 22) ranged from 0.131 (convenience-enjoyment) and 0.524 (service excellence-enjoyment), all less than 0.9 indicating another support for discriminant validity (Tabachnick & Fidell, 1996). Only travel frequency from demographic variables had a significant correlation with enjoyment (r = 0.093) and security/privacy (r = 0.148). Table 22 also shows the standard deviation and means of variables.

The multicollinearity is also tested through the VIF test. The result revealed that VIF for all the variables was between 1.113 to 1.991. Therefore, according to Hair et al. (2019), there is not any sign of multicollinearity.

Table 22: Correlations, Discriminant Validity, Means, and Standard Deviations of Constructs and Control Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Functionality	**0.827**												
2. Enjoyment	0.182**	**0.841**											
3. Security/Privacy	0.187**	0.470**	**0.783**										
4. Design	0.185**	0.349**	0.181**	**0.822**									
5. Convenience	0.136**	0.131**	0.147**	0.134**	**0.785**								
6. Customization	0.146**	0.312**	0.139**	0.287**	0.080*	**0.859**							
7. Service Excellence	0.444**	0.524**	0.374**	0.452**	0.219**	0.329**	**0.834**						
8. Satisfaction	0.522**	0.299**	0.190**	0.293**	0.296**	0.255**	0.383**	**0.862**					
9. Gender	-0.027	0.019	0.034	-0.002	-0.020	0.009	0.017	-0.005	1.000				
10. Age	0.035	-0.025	0.001	-0.034	0.011	-0.029	-0.034	-0.034	0.051	1.000			
11. Travel Frequency	-0.029	0.093*	0.148**	-0.001	-0.034	-0.053	0.018	-0.072	0.069	0.016	1.000		
12. Education	-0.054	-0.029	-0.035	0.054	0.023	-0.005	0.013	-0.021	0.001	-0.033	-0.028	1.000	
13. Tourist Types	-0.052	0.164**	0.337**	0.028	-0.223**	-0.021	0.205**	-0.380**	0.034	0.056	0.249**	0.062	1.000
Mean	4.088	4.010	3.948	3.759	4.103	4.018	4.165	4.150	0.520	1.941	0.938	1.861	0.456
Standard Deviation	0.601	0.638	0.645	0.788	0.640	0.724	0.575	0.658	0.500	1.200	0.988	1.017	0.498

Notes: Diagonal elements in bold are the square root of the AVE;
* $p < 0.05$, ** $p < 0.01$ (2-tailed).

4.4 Assessment of the Hypotheses

The hypothesized relationships were tested with the macro PROCESS model 7, V.3.5 for SPSS 25.0 using a bootstrapped 5000 sample size via the 95% confidence interval. Moreover, a few demographic variables have been statistically controlled due to their potential relationships with the study variables. The resulting coefficients and model test for the conditional process model (i.e., model with both mediation and moderation components) can be found in Tables 22 to 39. Moreover, the moderated mediation test was conducted by testing the index of moderated mediation whether it is different from zero for all the predictor variables.

4.4.1 Functionality Model

The results of Table 23 showed that the more functionality manifested by the hotel's SSTs, the more tourists satisfied with SSTs (B = 0.429, $p < 0.001$). Moreover, the results revealed that the effect of the functionality on satisfaction is indeed contingent on tourist types, as evidenced by the statistically significant interaction between *X* (predictor variable) and *W* (conditional effects in the model, i.e., tourist types) in the model (B = 0.267, $p < 0.001$).

The results of Table 23 also showed that the direct effect of the functionality on service excellence is positive and statistically significant (B = 0.326, $p < 0.001$). In the meantime, by holding the type of tourists and SSTs satisfaction constant, the hotel's SSTs that manifest relatively in providing further functionality that brings about a wow experience for tourists. The effect of satisfaction on service excellence is positive and significant for functionality model (B = 0.182, $p < 0.010$). In addition, none of the control variables showed a significant impact on both SSTs satisfaction and service excellence.

Table 23: Model Coefficients for the Conditional Process Model - Functionality

	Consequent					
	Satisfaction (*M*)			Service Excellence (*Y*)		
Antecedent	B	*SE*	*p*	B	*SE*	*p*
Functionality (*X*)	0.429	0.0362	0.000***	0.326	0.0417	0.000***
Satisfaction (*M*)	-	-	-	0.182	0.0552	0.001**
Tourist types (*W*)	-0.477	0.0442	0.000***	-	-	-
X × *W*	0.267	0.0626	0.000***	-	-	-
Control Variables						
Age	-0.012	0.0157	0.460	-0.019	0.0168	0.259
Gender	0.025	0.0405	0.544	0.030	0.0407	0.462
Travel Frequency	0.020	0.0195	0.314	0.025	0.0202	0.220
Education	0.018	0.0170	0.306	0.020	0.0205	0.328
	R^2 = 0.415, F(7, 619) = 77.269, p = 0.000***			R^2 = 0.234, F(6, 620) = 51.833, p = 0.000***		

Notes: ** $p < 0.010$, *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error.

Table 24: Moderating Effect of Functionality at Values of Tourist Types on SSTs Satisfaction

Tourist Types	B	*SE*	*p*	LLCI	ULCI
Business Traveler	0.696	0.0511	0.000***	0.595	0.796
Leisure Traveler	0.429	0.0362	0.000***	0.358	0.500
R^2—Change = 0.0147, F(1, 619) = 18.194, p = 0.000***					

Notes: *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error;
LLCI = Lower Level Confidence Interval;
ULCI = Upper Level Confidence Interval.

In addition, the results as are presented in Table 24 showed that the effect of the functionality on satisfaction is consistently positive and significant for both tourist types; however, it is more positive among business travelers (B = 0.696, $p < 0.001$) than leisure travelers (B = 0.429, $p < 0.001$). The difference between business and leisure traveler is significant (R^2 — Change = 0.0147, $p < 0.001$). Therefore, tourist types play the moderator role in the effect of the functionality on satisfaction.

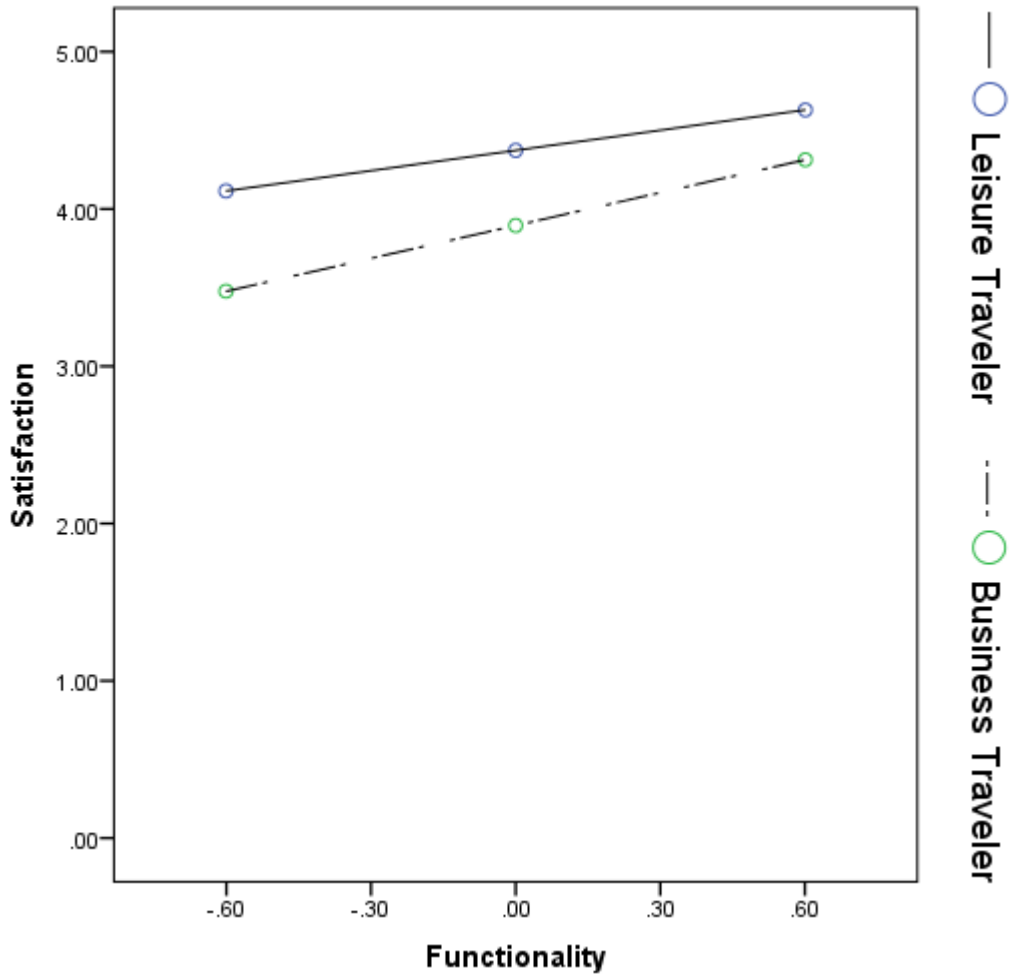

Figure 6: Analysis of Simple Slopes - Functionality

A visual representation of the moderation of the effect of the functionality (X) on SSTs satisfaction (Y) by tourist types (W) is presented in Figure 6. In this figure, each line reflects the conditional effect of the functionality on the strength of SSTs satisfaction.

It is apparent that the conditional effects are graphically (Figure 6) and statistically (Table 24) different. Regardless of the quantity that the model estimates for SSTs satisfaction from the different levels of functionality, as can be seen, by increasing the level of functionality, SSTs satisfaction increases further, such that the slope is steeper for business travelers than for leisure travelers. This means that by increasing the functionality, business travelers will be more satisfied than leisure travelers.

As shown in Table 25, the index of moderated mediation for functionality (B = 0.049 (CI: 0.017, 0.092)), zero is not within the bootstrap confidence interval. These results indicate the indirect effect is positively related to the moderator. That is, the mediation of the effect of the functionality on service excellence through SSTs satisfaction is moderated by tourist types, in which the effect is greater for business travelers (B = 0.127) than for leisure travelers (B = 0.078).

Table 25: Conditional Direct and Indirect Effects of Functionality on Service Excellence

	Consequent						
Antecedent	Indirect Effect				Direct Effect		
Moderator	B	Boot*SE*	BootLLCI	BootULCI	B	SE	p
Functionality					0.326	0.0417	0.000***
BT	0.127	0.0384	0.054	0.206			
LT	0.078	0.0233	0.035	0.127			
	0.049	0.0191	0.017	0.092	←Index of moderated mediation		

Notes: *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error;
Number of bootstrap samples: 5000 (95 confidence intervals);
BT = Business Traveler;
LT = Leisure Traveler.

4.4.2 Enjoyment Model

The results of Table 26 showed that the more enjoyment perceived by tourists during their interaction with SSTs, the more satisfaction achieved from SSTs (B = 0.222, $p < 0.001$). Moreover, the results revealed that the effect of enjoyment on satisfaction is indeed contingent on tourist types, as evidenced by the statistically significant interaction between *X* (predictor variable) and *W* (conditional effects in the model, i.e., tourist types) in the model (B = 0.384, $p < 0.001$).

Table 26: Model Coefficients for the Conditional Process Model - Enjoyment

	Consequent					
	Satisfaction (*M*)			Service Excellence (*Y*)		
Antecedent	B	*SE*	*p*	B	*SE*	*p*
Enjoyment *(X)*	0.222	0.0361	0.000***	0.406	0.0304	0.000***
Satisfaction *(M)*	-	-	-	0.217	0.0429	0.000***
Tourist types (*W*)	-0.593	0.0481	0.000***	-	-	-
X × *W*	0.384	0.0719	0.000***	-	-	-
Control Variables						
Age	-0.002	0.0181	0.906	-0.007	0.0156	0.670
Gender	0.009	0.0443	0.842	0.012	0.0378	0.743
Travel Frequency	0.001	0.0225	0.969	-0.003	0.0185	0.852
Education	0.006	0.0220	0.788	0.017	0.0189	0.357
	$R^2 = 0.311$, $F(7, 619) = 39.683$, $p = 0.000$***			$R^2 = 0.333$, $F(6, 620) = 41.772$, $p = 0.000$***		

Notes: *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error.

The results of Table 26 also showed that the direct effect of enjoyment on service excellence is positive and statistically significant (B = 0.406, $p < 0.001$). In the meantime, by holding the type of tourists and SSTs satisfaction constant, the hotel's SSTs that manifest relatively in providing further enjoyment that brings about a wow experience for tourists. The effect of satisfaction on service excellence is positive and significant for the enjoyment model (B = 0.217, $p < 0.001$). In addition, none of the control variables showed a significant impact on both SSTs satisfaction and service excellence.

Table 27: Moderating Effect of Enjoyment at Values of Tourist Types on SSTs Satisfaction

Tourist Types	B	*SE*	*p*	LLCI	ULCI
Business Traveler	0.605	0.0616	0.000***	0.484	0.726
Leisure Traveler	0.222	0.0361	0.000***	0.151	0.293
R^2—Change = 0.0327, $F(1, 619) = 28.452$, $p = 0.000^{***}$					

Notes: *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error;
LLCI = Lower Level Confidence Interval;
ULCI = Upper Level Confidence Interval.

In addition, the results as are presented in Table 27 showed that the effect of the enjoyment on satisfaction is consistently positive and significant for both tourist types; however, it is more positive among business travelers (B = 0.605, $p < 0.001$) than leisure travelers (B = 0.222, $p < 0.001$). The difference between business and leisure traveler is significant (R^2—Change = 0.0327, $p < 0.001$). Therefore, tourist types play the moderator role in the effect of enjoyment on satisfaction.

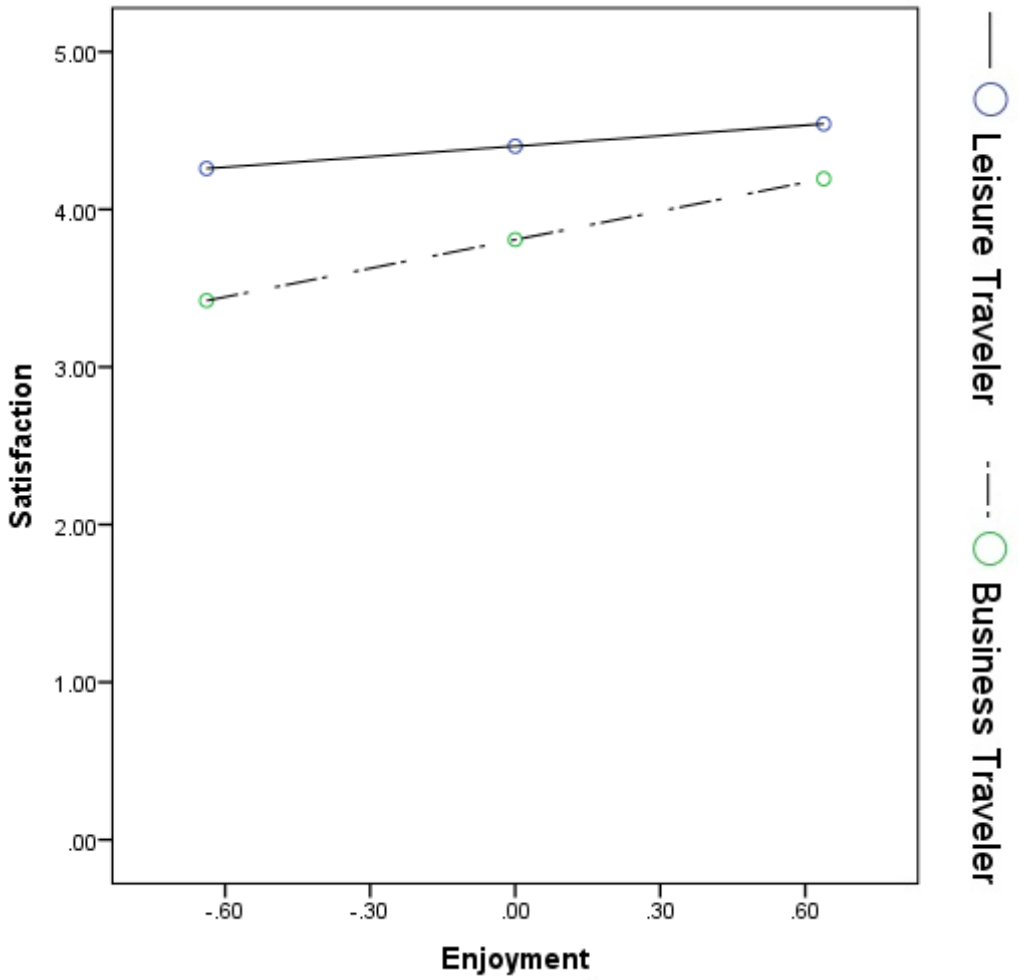

Figure 7: Analysis of Simple Slopes - Enjoyment

A visual representation of the moderation of the effect of the enjoyment (X) on SSTs satisfaction (Y) by tourist types (W) is presented in Figure 7. In this figure, each line reflects the conditional effect of the enjoyment on the strength of SSTs satisfaction. It is apparent that the conditional effects are graphically (Figure 7) and statistically (Table 27) different. Regardless of the quantity that the model estimates for SSTs satisfaction from the different levels of enjoyment, as can be seen, by increasing the level of enjoyment, SSTs satisfaction increases further, such that the slope is steeper for business travelers than for leisure travelers. This means that by increasing the enjoyment, business travelers will be more satisfied than leisure travelers.

Table 28: Conditional Direct and Indirect Effects of Enjoyment on Service Excellence

Antecedent	Consequent						
	Indirect Effect				Direct Effect		
Moderator	B	Boot*SE*	BootLLCI	BootULCI	B	SE	p
Enjoyment					0.406	0.0304	0.000***
BT	0.131	0.0271	0.081	0.187			
LT	0.048	0.0119	0.028	0.074			
	0.083	0.0217	0.045	0.130	←Index of moderated mediation		

Notes: *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error;
Number of bootstrap samples: 5000 (95 confidence intervals);
BT = Business Traveler;
LT = Leisure Traveler.

As shown in Table 28, the index of moderated mediation for enjoyment (B = 0.083 (CI: 0.045, 0.130)), zero is not within the bootstrap confidence interval. These results indicate the indirect effect is positively related to the moderator. That is, the mediation of the effect of enjoyment on service excellence through SSTs satisfaction is moderated by tourist types, in which the effect is greater for business travelers (B = 0.131) than for leisure travelers (B = 0.048).

4.4.3 Security/Privacy Model

The results of Table 29 showed that the more security/privacy perceived by tourists during their interaction with SSTs, the more satisfaction achieved from SSTs (B = 0.306, $p < 0.001$). Moreover, the results revealed that the effect of security/privacy on satisfaction is contingent on tourist types, as evidenced by the statistically significant interaction between *X* (predictor variable) and *W* (conditional effects in the model, i.e., tourist types) in the model (B = 0.163, $p < 0.050$).

Table 29: Model Coefficients for the Conditional Process Model - Security/Privacy

	Consequent					
	Satisfaction (*M*)			Service Excellence (*Y*)		
Antecedent	B	*SE*	*p*	B	*SE*	*p*
Security/Privacy *(X)*	0.306	0.0336	0.000***	0.280	0.0331	0.000***
Satisfaction *(M)*	-	-	-	0.282	0.0449	0.000***
Tourist types (*W*)	-0.674	0.0522	0.000***	-	-	-
X × *W*	0.163	0.0745	0.029*	-	-	-
Control Variables						
Age	-0.003	0.0186	0.868	-0.011	0.0166	0.509
Gender	-0.001	0.0456	0.987	0.011	0.0403	0.791
Travel Frequency	-0.001	0.0229	0.965	-0.003	0.0199	0.894
Education	0.013	0.0229	0.567	0.017	0.0204	0.404
	R^2 = 0.265, F(7, 619) = 41.674, p = 0.000***			R^2 = 0.242, F(6, 620) = 22.627, p = 0.000***		

Notes: * $p < 0.050$, *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error.

The results of Table 29 also showed that the direct effect of security/privacy on service excellence is positive and statistically significant (B = 0.280, $p < 0.001$). In the meantime, by holding the type of tourists and SSTs satisfaction constant, the hotel's SSTs that manifest relatively in providing further security/privacy that brings about a wow experience for tourists. The effect of satisfaction on service excellence is positive and significant for security/privacy model (B = 0.282, $p < 0.001$). In addition, none of the control variables showed a significant impact on both SSTs satisfaction and service excellence.

Table 30: Moderating Effect of Security/Privacy at Values of Tourist Types on SSTs Satisfaction

Tourist Types	B	*SE*	*p*	LLCI	ULCI
Business Traveler	0.469	0.0665	0.000***	0.338	0.600
Leisure Traveler	0.306	0.0336	0.000***	0.240	0.372

R^2 — Change = 0.0053, $F(1, 619) = 4.774$, $p = 0.029^*$

Notes: * $p < 0.050$, $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error;
LLCI = Lower Level Confidence Interval;
ULCI = Upper Level Confidence Interval.

In addition, the results as are presented in Table 30 showed that the effect of the security/privacy on satisfaction is consistently positive and significant for both tourist types; however, it is more positive among business travelers (B = 0.469, $p < 0.001$) than leisure travelers (B = 0.306, $p < 0.001$). The difference between business and leisure traveler is significant (R^2 — Change = 0.053, $p < 0.050$). Therefore, tourist types play the moderator role in the effect of security/privacy on satisfaction.

A visual representation of the moderation of the effect of security/privacy (X) on SSTs satisfaction (Y) by tourist types (W) is presented in Figure 8. In this figure, each line reflects the conditional effect of the security/privacy on the strength of SSTs satisfaction. It is apparent that the conditional effects are graphically (Figure 8) and statistically (Table 30) different. Regardless of the quantity that the model estimates for SSTs satisfaction from the different levels of security/privacy, as can be seen, by increasing the level of security/privacy, SSTs satisfaction increases further, such that the slope is steeper for business travelers than for leisure travelers. This means that by increasing security/privacy, business travelers will be more satisfied than leisure travelers.

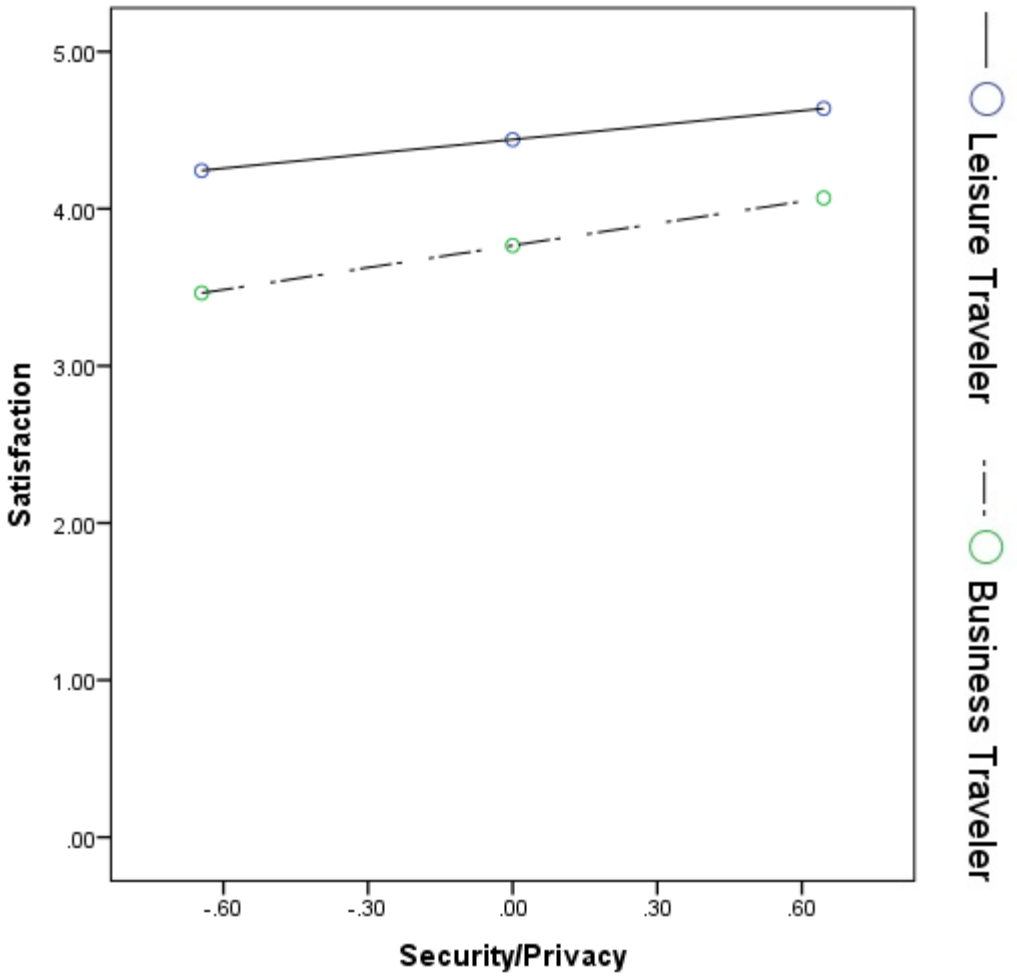

Figure 8: Analysis of Simple Slopes - Security/Privacy

As shown in Table 31, index of moderated mediation for security/privacy (B = 0.046 (CI: 0.007, 0.089)), zero is not within the bootstrap confidence interval. These results indicate the indirect effect is positively related to the moderator. That is, the mediation of the effect of security/privacy on service excellence through SSTs satisfaction is moderated by tourist types, in which the effect is greater for business travelers (B = 0.132) than for leisure travelers (B = 0.086).

Table 31: Conditional Direct and Indirect Effects of Security/Privacy on Service Excellence

	Consequent						
Antecedent	Indirect Effect				Direct Effect		
Moderator	B	Boot*SE*	BootLLCI	BootULCI	B	SE	p
Security/Privacy					0.280	0.0331	0.000***
BT	0.132	0.0245	0.086	0.182			
LT	0.086	0.0163	0.057	0.121			
	0.046	0.0208	0.007	0.089	←Index of moderated mediation		

Notes: *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error;
Number of bootstrap samples: 5000 (95 confidence intervals);
BT = Business Traveler;
LT = Leisure Traveler.

4.4.4 Design Model

The results of Table 32 showed that tourists' satisfaction with SSTs increased for those who found the design of SSTs more appealing (B = 0.263, $p < 0.001$). Moreover, the results revealed that the interaction effect of design and tourist types on satisfaction is neither significant nor positive (B = -0.020, $p > 0.050$). Therefore, the effect of design on satisfaction is not contingent on tourist types (tourist types do not play the moderator role).

The results of Table 32 also showed that the direct effect of design on service excellence is positive and statistically significant (B = 0.270, $p < 0.001$). In the meantime, by holding the type of tourists and SSTs satisfaction constant, hotel's SSTs that manifest relatively in providing further design that brings about a wow experience for tourists. The effect of satisfaction on service excellence is positive and significant

for design model (B = 0.242, $p < 0.001$). In addition, none of the control variables showed a significant impact on both SSTs satisfaction and service excellence.

Table 32: Model Coefficients for the Conditional Process Model - Design

	Consequent					
	Satisfaction (*M*)			Service Excellence (*Y*)		
Antecedent	B	*SE*	*p*	B	*SE*	*p*
Design *(X)*	0.263	0.0316	0.000***	0.270	0.0262	0.000***
Satisfaction *(M)*	-	-	-	0.242	0.0422	0.000***
Tourist types (*W*)	-0.521	0.0509	0.000***	-	-	-
$X \times W$	-0.020	0.0565	0.731	-	-	-
Control Variables						
Age	-0.001	0.0192	0.958	-0.006	0.0165	0.698
Gender	0.010	0.0464	0.835	0.020	0.0394	0.617
Travel Frequency	0.018	0.0233	0.448	0.022	0.0193	0.261
Education	-0.008	0.0234	0.732	0.000	0.0201	0.989
	$R^2 = 0.238$, $F(7, 619) = 40.733$, $p = 0.000$***			$R^2 = 0.275$, $F(6, 620) = 31.201$, $p = 0.000$***		

Notes: *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error.

In addition, the results as are presented in Table 33 showed that the effect of the design on satisfaction is consistently positive and significant for both tourist types; however, it is identical for both business and leisure travelers. The difference between business and leisure traveler is not significant (R^2 — Change = 0.0001, $p > 0.050$). Therefore, tourist types do not play the moderator role in the effect of the design on satisfaction.

Table 33: Moderating Effect of Design at Values of Tourist Types on SSTs Satisfaction

Tourist Types	B	*SE*	*p*	LLCI	ULCI
Business Traveler	-	-	-	-	-
Leisure Traveler	-	-	-	-	-

R^2 — Change = 0.0001, $F(1, 619) = 0.119$, $p = 0.731$

Notes: B = Unstandardized Coefficients;
SE = Standard Error;
LLCI = Lower Level Confidence Interval;
ULCI = Upper Level Confidence Interval.

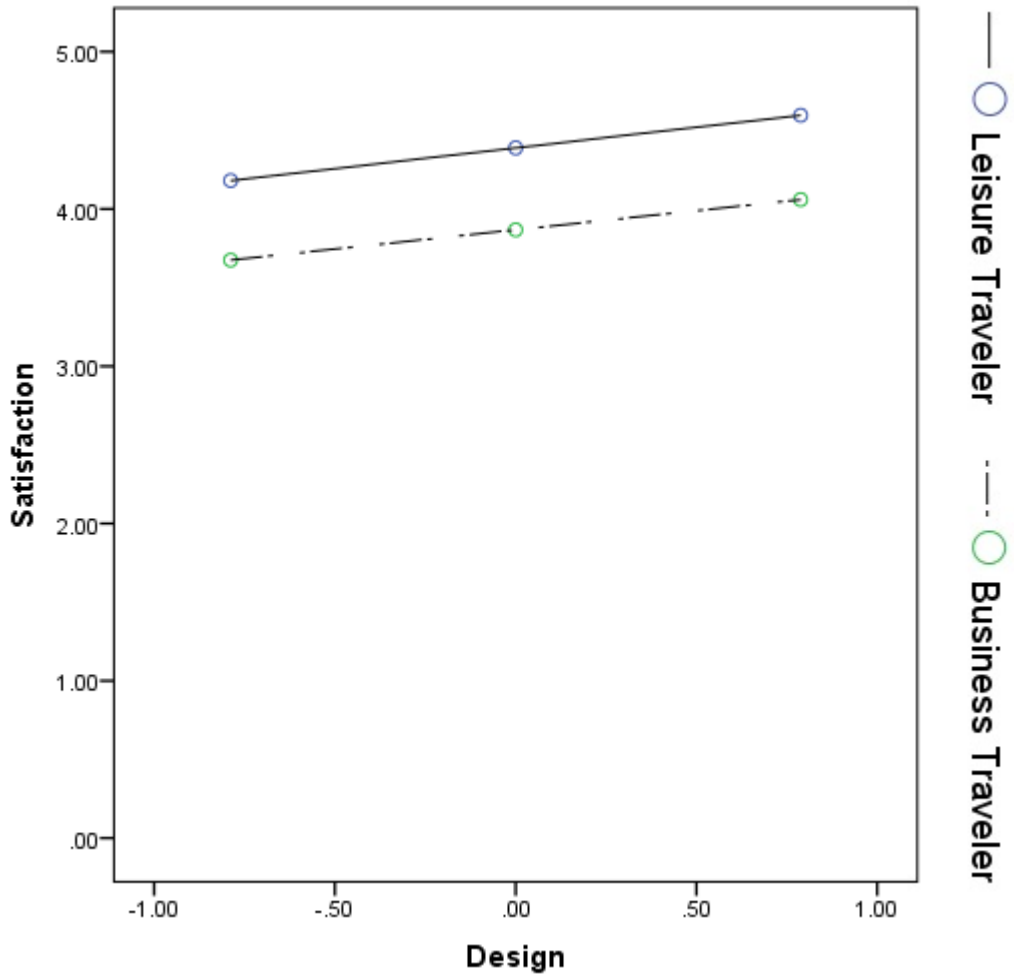

Figure 9: Analysis of Simple Slopes - Design

A visual representation of the moderation of the effect of the design (X) on SSTs satisfaction (Y) by tourist types (W) is presented in Figure 9. In this figure, each line

reflects the conditional effect of the design on the strength of SSTs satisfaction. It is apparent that the conditional effects are not graphically (Figure 9) and statistically (Table 33) different. Regardless of the quantity that the model estimates for SSTs satisfaction from the different levels of design, as can be seen, by increasing the level of design, SSTs satisfaction increases parallelly, such that the slope is almost the same for business and leisure travelers. This means that by increasing the design, business travelers and leisure travelers will be more satisfied identically.

Table 34: Conditional Direct and Indirect Effects of Design on Service Excellence

	Consequent						
Antecedent	Indirect Effect				Direct Effect		
Moderator	B	Boot*SE*	BootLLCI	BootULCI	B	SE	p
Design					0.270	0.0262	0.000***
BT	0.059	0.0165	0.031	0.095			
LT	0.064	0.0132	0.040	0.092			
	-0.005	0.0141	-0.033	0.024	←Index of moderated mediation		

Notes: *** p < 0.001;
B = Unstandardized Coefficients;
SE = Standard Error;
Number of bootstrap samples: 5000 (95 confidence intervals);
BT = Business Traveler;
LT = Leisure Traveler.

As shown in Table 34, the index of moderated mediation for the design model (B = -0.005 (CI: -0.033, 0.024)) zero is within the bootstrap confidence interval, meaning that the indirect effect was not related to the moderator. That is, the mediating effect of satisfaction on the relationship between design and service excellence is not moderated by tourist types, in which the effect is almost the same for business travelers (B = 0.059) and leisure travelers (B = 0.064).

4.4.5 Convenience Model

The results of Table 35 showed that tourists' convenience with SSTs neither significantly nor positively related to their satisfaction (B = -0.016, $p > 0.050$).

Table 35: Model Coefficients for the Conditional Process Model - Convenience

	Consequent					
	Satisfaction (*M*)			Service Excellence (*Y*)		
Antecedent	B	*SE*	*p*	B	*SE*	*p*
Convenience *(X)*	-0.016	0.0413	0.692	0.105	0.0352	0.003**
Satisfaction *(M)*	-	-	-	0.307	0.0488	0.000***
Tourist types (*W*)	-0.434	0.0534	0.000***	-	-	-
X × *W*	0.450	0.0613	0.000***	-	-	-
Control Variables						
Age	-0.011	0.0191	0.558	-0.012	0.0175	0.502
Gender	0.005	0.0465	0.910	0.022	0.0423	0.605
Travel Frequency	0.001	0.0231	0.982	0.027	0.0208	0.191
Education	-0.012	0.0219	0.579	0.010	0.0212	0.628
	$R^2 = 0.237$, $F(7, 619) = 42.723$, $p = 0.000$***			$R^2 = 0.163$, $F(6, 620) = 16.525$, $p = 0.000$***		

Notes: ** $p < 0.010$, *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error.

Moreover, the results revealed that the effect of convenience on satisfaction is indeed contingent on tourist types, as evidenced by the statistically significant interaction between *X* (predictor variable) and *W* (conditional effects in the model, i.e., tourist types) in the model (B = 0.450, $p < 0.001$). However, this effect is only significant for

business travelers (B = 0.434, $p < 0.001$) (see Table 36). In this case, moderation has partially occurred since the main effect of convenience on satisfaction became significant after entering the moderator in the model.

The results of Table 35 also showed that the direct effect of convenience on service excellence is positive and statistically significant (B = 0.105, $p < 0.010$). In the meantime, by holding the type of tourists and SSTs satisfaction constant, the hotel's SSTs that manifest relatively in providing further convenience that brings about a wow experience for tourists. The effect of satisfaction on service excellence is positive and significant for the convenience model (B = 0.307, $p < 0.001$). In addition, none of the control variables showed a significant impact on both SSTs satisfaction and service excellence.

Table 36: Moderating Effect of Convenience at Values of Tourist Types on SSTs Satisfaction

Tourist Types	B	*SE*	*p*	LLCI	ULCI
Business Traveler	0.434	0.0453	0.000***	0.345	0.523
Leisure Traveler	-0.016	0.0413	0.692	-0.097	0.065
R^2 — Change = 0.0446, $F(1, 619) = 53.861$, $p = 0.000^{***}$					

Notes: *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error;
LLCI = Lower Level Confidence Interval;
ULCI = Upper Level Confidence Interval.

In addition, the results as are presented in Table 36 showed that the effect of convenience on satisfaction is consistently positive and significant for only business travelers (B = 0.434, $p < 0.001$); however, it is negative and non-significant among leisure travelers (B = -0.016, $p > 0.050$). The difference between business and leisure

traveler is significant (R^2 — Change = 0.0446, $p < 0.001$). Therefore, tourist types have a partial moderator role in the effect of convenience on satisfaction.

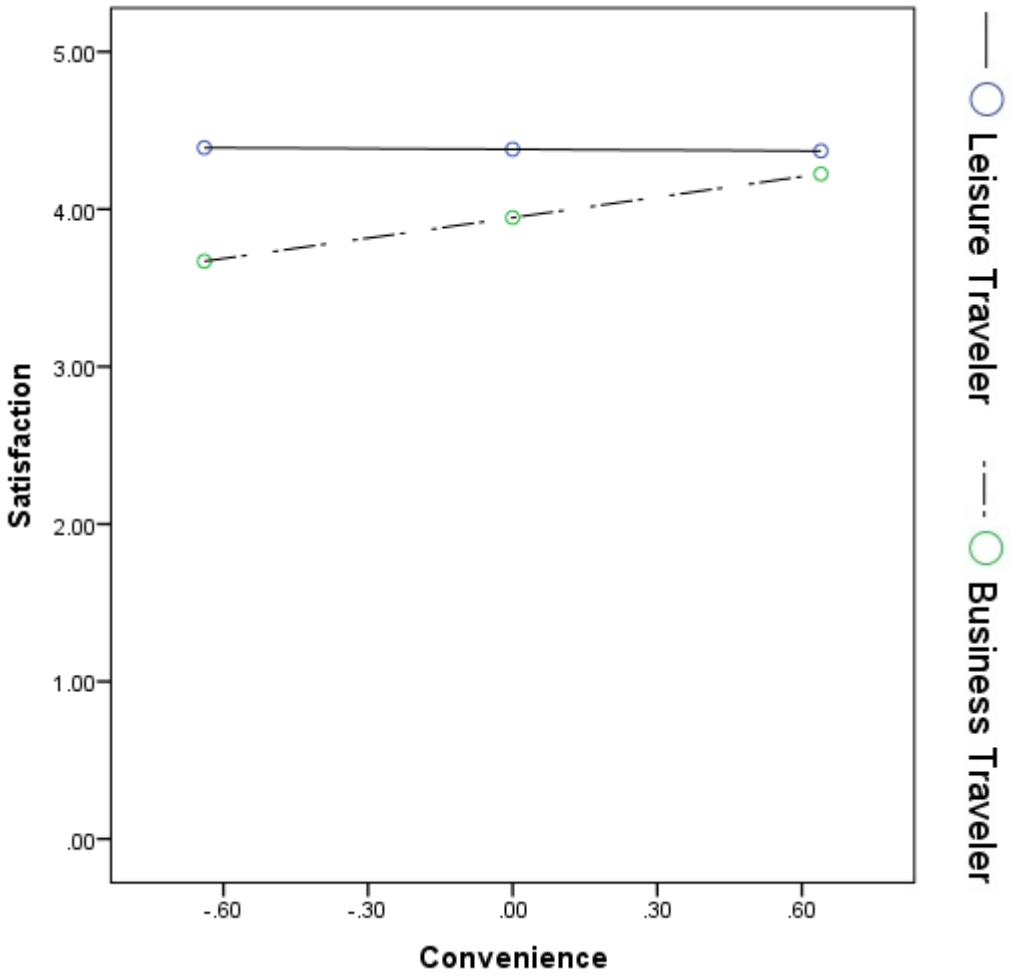

Figure 10: Analysis of Simple Slopes - Convenience

A visual representation of the moderation of the effect of the convenience (X) on SSTs satisfaction (Y) by tourist types (W) is presented in Figure 10. In this figure, each line reflects the conditional effect of convenience on the strength of SSTs satisfaction. It is apparent that the conditional effects are graphically (Figure 10) and statistically (Table 36) different. However, regardless of the quantity that the model estimates for SSTs satisfaction from the different levels of convenience, as can be seen, by increasing the level of convenience, SSTs satisfaction increases further only for business travelers

and even slightly decreases for leisure travelers, such that the slope is ascending for business travelers and slightly descending for leisure travelers. This means that by increasing the convenience, business travelers will be much more satisfied than leisure travelers; however, leisure travelers might even be slightly dissatisfied.

Table 37: Conditional Direct and Indirect Effects of Convenience on Service Excellence

	Consequent						
Antecedent	Indirect Effect				Direct Effect		
Moderator	B	Boot*SE*	BootLLCI	BootULCI	B	SE	p
Convenience					0.105	0.0352	0.003**
BT	0.133	0.0292	0.080	0.194			
LT	-0.005	0.0127	-0.029	0.021			
	0.138	0.0318	0.081	0.207	←Index of moderated mediation		

Notes: * $p < 0.010$;
B = Unstandardized Coefficients;
SE = Standard Error;
Number of bootstrap samples: 5000 (95 confidence intervals);
BT = Business Traveler;
LT = Leisure Traveler.

As shown in Table 37, index of moderated mediation for convenience (B = 0.138 (CI: 0.081, 0.207)), zero is not within the bootstrap confidence interval. These results indicate the indirect effect is positively related to the moderator. That is, the mediation of the effect of convenience on service excellence through SSTs satisfaction is moderated by tourist types, in which the effect is greater for business travelers (B = 0.132) than for leisure travelers (B = -0.005); however, it is not significant for leisure travelers.

4.4.6 Customization Model

The results of Table 38 showed that the more customization perceived by tourists during their interaction with SSTs, the more satisfaction achieved from SSTs (B = 0.128, $p < 0.010$). Moreover, the results revealed that the effect of customization on satisfaction is indeed contingent on tourist types, as evidenced by the statistically significant interaction between *X* (predictor variable) and *W* (conditional effects in the model, i.e., tourist types) in the model (B = 0.204, $p < 0.010$).

Table 38: Model Coefficients for the Conditional Process Model - Customization

	Consequent					
	Satisfaction (*M*)			Service Excellence (*Y*)		
Antecedent	B	*SE*	*p*	B	*SE*	*p*
Customization *(X)*	0.128	0.0388	0.001**	0.197	0.0317	0.000***
Satisfaction *(M)*	-	-	-	0.283	0.0457	0.000***
Tourist types (*W*)	-0.508	0.0509	0.000***	-	-	-
X × *W*	0.204	0.0726	0.005**	-	-	-
Control Variables						
Age	-0.003	0.0201	0.875	-0.008	0.0177	0.653
Gender	0.004	0.0473	0.939	0.015	0.0411	0.707
Travel Frequency	0.026	0.0234	0.277	0.032	0.0205	0.123
Education	0.006	0.0240	0.789	0.013	0.0213	0.558
	$R^2 = 0.219$, $F(7, 619) = 21.789$, $p = 0.000$***			$R^2 = 0.208$, $F(6, 620) = 16.619$, $p = 0.000$***		

Notes: ** $p < 0.010$, *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error.

The results of Table 38 also showed that the direct effect of customization on service excellence is positive and statistically significant (B = 0.197, $p < 0.001$). In the meantime, by holding the type of tourists and SSTs satisfaction constant, the hotel's SSTs that manifest relatively in providing further customization that brings about a wow experience for tourists. The effect of satisfaction on service excellence is positive and significant for customization model (B = 0.283, $p < 0.001$). In addition, none of the control variables showed a significant impact on both SSTs satisfaction and service excellence.

Table 39: Moderating Effect of Customization at Values of Tourist Types on SSTs Satisfaction

Tourist Types	B	*SE*	*p*	LLCI	ULCI
Business Traveler	0.332	0.0615	0.000***	0.211	0.453
Leisure Traveler	0.128	0.0388	0.001**	0.052	0.204
R^2 — Change = 0.0126, $F(1, 619) = 7.911$, $p = 0.005$**					

Notes: ** $p < 0.010$, *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error;
LLCI = Lower Level Confidence Interval;
ULCI = Upper Level Confidence Interval.

In addition, the results as are presented in Table 39 showed that the effect of the customization on satisfaction is consistently positive and significant for both tourist types; however, it is more positive among business travelers (B = 0.332, $p < 0.001$) than leisure travelers (B = 0.128, $p < 0.010$). The difference between business and leisure traveler is significant (R^2 — Change = 0.0126, $p < 0.010$). Therefore, tourist types play the moderator role in the effect of customization on satisfaction.

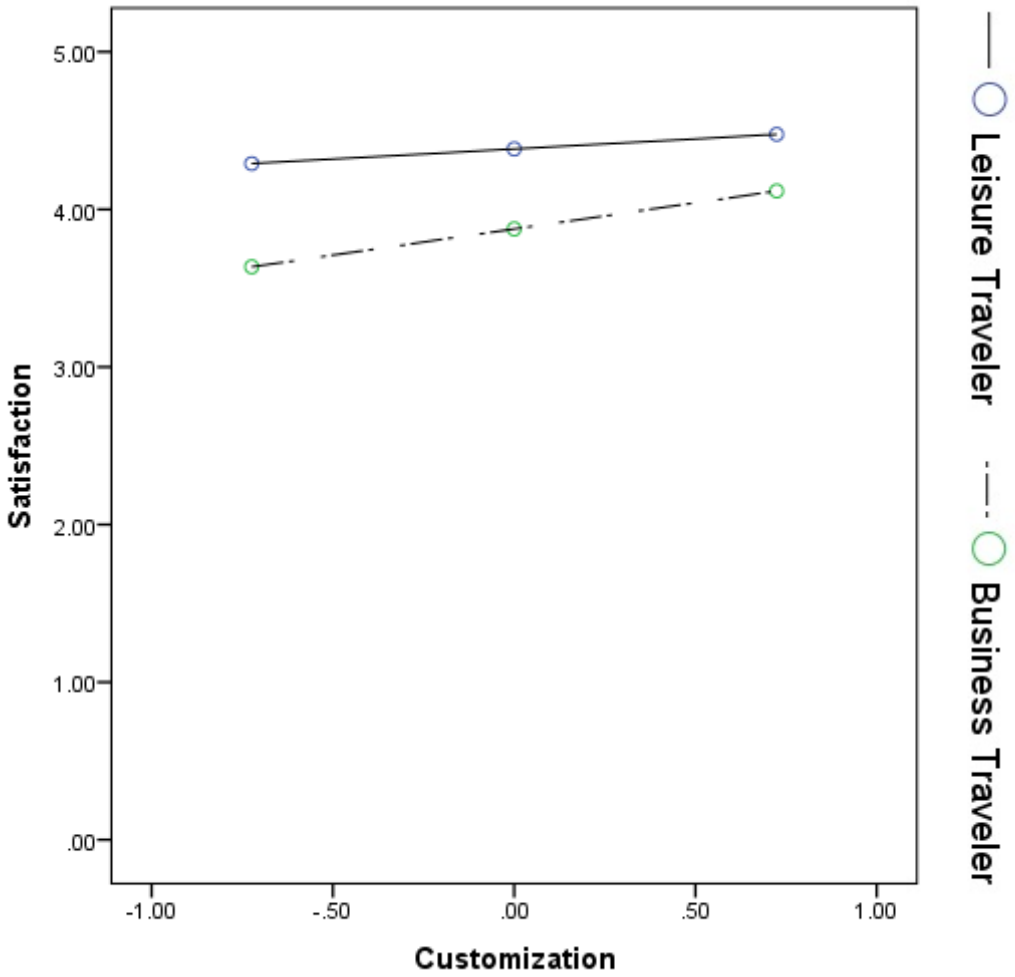

Figure 11: Analysis of Simple Slopes - Customization

A visual representation of the moderation of the effect of the customization (X) on SSTs satisfaction (Y) by tourist types (W) is presented in Figure 11. In this figure, each line reflects the conditional effect of the customization on the strength of SSTs satisfaction. It is apparent that the conditional effects are graphically (Figure 11) and statistically (Table 39) different. Regardless of the quantity that the model estimates for SSTs satisfaction from the different levels of customization, as can be seen, by increasing the level of customization, SSTs satisfaction increases further, such that the slope is steeper for business travelers than for leisure travelers. This means that by increasing the customization, business travelers will be more satisfied than leisure travelers.

Table 40: Conditional Direct and Indirect Effects of Customization on Service Excellence

	Consequent						
Antecedent	Indirect Effect				Direct Effect		
Moderator	B	Boot*SE*	BootLLCI	BootULCI	B	SE	p
Customization					0.197	0.0317	0.000***
BT	0.094	0.0194	0.060	0.135			
LT	0.036	0.0135	0.013	0.065			
	0.058	0.0195	0.020	0.098	←Index of moderated mediation		

Notes: *** $p < 0.001$;
B = Unstandardized Coefficients;
SE = Standard Error;
Number of bootstrap samples: 5000 (95 confidence intervals);
BT = Business Traveler;
LT = Leisure Traveler.

As shown in Table 40, index of moderated mediation for customization (B = 0.058 (CI: 0.020, 0.098)), zero is not within the bootstrap confidence interval. These results indicate the indirect effect is positively related to the moderator. That is, the mediation of the effect of customization on service excellence through SSTs satisfaction is moderated by tourist types, in which the effect is greater for business travelers (B = 0.094) than for leisure travelers (B = 0.036).

To sum up, results revealed that functionality, enjoyment, security/privacy, design, and customization had a significant effect on SSTs satisfaction except for convenience. Satisfaction as the mediator had a significant effect on service excellence in all the models. However, tourist types as the moderator played a significant role in functionality, enjoyment, security/privacy, and customization, and partially for convenience and not for design. Tourist types moderate the mediating effect of SSTs

satisfaction in the relationship of functionality, enjoyment, security/privacy, convenience, and customization on service excellence. However, tourist types do not moderate the mediating effect of satisfaction on the relationship between design and service excellence. Moreover, all predictor variables had a significant effect on service excellence. Therefore, hypothesis 1 (a, b, c, d, e, g), hypothesis 2, hypothesis 3 (a-g), hypothesis 4 (a, b, c, d, g), and hypothesis 5 (a, b, c, d, f, g) supported; hypothesis 4 (f) partially supported; hypothesis 1 (f), hypothesis 4 (e), and hypothesis 5 (e) rejected.

Chapter 5

DISCUSSION AND CONCCLUSION

5.1 Introduction

This chapter follows the discussion of the results from the previous chapters. This chapter summarizes the research outcomes by evaluating the contribution of the hypothesis testing results to the research questions. The discussion follows the implications for the theory and practice of research results. This chapter contains practical suggestions for implementing SSTs in the tourism industry.

5.2 Discussion and Conclusion

This research makes a major contribution to the literature by providing insights to understand tourists' needs and wants, and affirm that SSTs not only can meet their expectations to achieve their basic level of satisfaction but also can bring about wow experience or service excellence for them. While this study focused on customers' point of view, managers who design and implement the organization's plan can benefit. The value added to tourists' experiences through SSTs (i.e., service excellence) is a differentiation strategy. SSTs make the difference between merely providing service in frontstage and co-creating one that causes the unforgettable wow experience. The quality of SSTs encounters with tourists determines the quality of the experience, consequently generating positive word of mouth and customer retention. This also has tremendous implications for the tourism sector. The study revealed that SSTs' attributes contribute to tourists' service excellence by generating "wow factors". Therefore, SSTs, by delivering a higher quality of services to customers, will enhance

customer satisfaction. In addition, SSTs tend to provide more and a variety of services to customers and help bring about service excellence in succession.

Functionality as the obvious means of delivering promises not only causes satisfaction but also brings about service excellence for tourists. The positive effect of the functionality on satisfaction in this research is in line with the previous studies (J.-H. Kim & Park, 2019). The study revealed that functionality is more important for business travelers than leisure travelers. This is because of their value for money (Dolnicar, 2002) and their less tolerance regarding any failure or inconveniences (Mattila, 1999). Enjoyment, security/privacy, and customization in all models bring about satisfaction as well as service excellence that is more influential for business travelers than leisure travelers.

Regarding the positive effect of SSTs in terms of enjoyment (Robertson et al., 2016), security/privacy (Aslam et al., 2019; Theodosiou et al., 2019), and customization (J.-H. Kim & Park, 2019) on tourist satisfaction, the results are consonant with the findings of previous studies. One should bear in mind that the design aspect of the SSTs would have a positive effect on satisfaction and service excellence for both business and leisure travelers. The positive effect of design on satisfaction in this research is in line with the previous studies (Lian, 2018). Interestingly, convenience can only bring about satisfaction and service excellence for business travelers and not leisure travelers. This implies that only business travelers pay attention to the overall availability of SSTs. Although the result of our research regarding the positive effect of convenience on satisfaction was only for business travelers, it is in line with other scholars' results (Narteh, 2015).

The findings indicate that all the SSTs' characteristics are indeed significant drivers of customer's perceptions of service excellence. This study revealed that with the exception of design, all the SSTs' characteristics are measurably perceived differently by the type of tourists, in which business travelers are more concerned about these characteristics and by receiving better quality of each item they will be more satisfied (i.e., in terms of both satisfaction and service excellence) in compare to leisure travelers. This is highly plausible since the business traveler's needs and wants are different from others. However, both leisure and business travelers are equally concerned about the design of SSTs, knowing that the design can influence the service excellence for both tourist types. Since utility is arriving from the SSTs characteristics, hence, SSTs by providing more or a variety of services can enrich the maximum utility for tourists that bring about the service excellence for them.

Regarding Khan's (2011) definition of service excellence as "service excellence is all about the behavior and attitudes of employees within an organization. ... Excellent, motivated people will have a 'can-do' attitude and be prepared to go the extra mile for clients" (p. 260); two things are highlighted. First, in service industries, employees as the internal customers are responsible for providing service excellence to customers, depending on their behavior and attitudes. By adapting this definition to the self-service context, which technologies are responsible for providing customers with facilities in order to co-produce the service and consume it simultaneously, service excellence can be defined as:

> "Service excellence is all about the characteristics or attributes of Self-Service Technologies within a service organization".

In the above definition, the important role of SSTs and their characteristics or attributes in bringing about service excellence for customers are highlighted. Moreover, this

definition is consistent with the suggestion of Lancaster's consumer theory. That is, the excellent service from the self-service technologies is because of their characteristics.

Second, the terms 'can-do attitude' and 'go the extra mile' are very similar to Johnston's (2004, 2007) service excellence elements, 'delivering the promise' and 'going the extra mile'. By adapting these two terms to the context of self-service and adding all together, service excellence can be defined as:

> "Service excellence is all about the characteristics/attributes of Self-Service Technologies within a service organization. Well-designed and anticipated Self-Service Technologies will do their supposed functions and are well-prepared to delight customers and troubleshoot".

In the above proposed definition of service excellence in the context of self-service technologies, it is highlighted that self-service technologies will cover all the Johnston's (2004, 2007) service excellence elements. The 'well-designed and anticipated Self-Service Technologies' refers to the 'going the extra mile'. 'Self-Service Technologies will do their supposed functions' refers to the 'delivering the promise'. The 'well-prepared to delight customers' refers to the 'providing a personal touch'. The 'well-prepared to troubleshoot" refers to the 'dealing properly with problems and queries'.

5.3 Implications

5.3.1 Theoretical implications

This study aimed to revolutionize tourist experience creation by calibrating 'wow-experience' and 'service-excellence' into SSTs attributes that have remained a neglected aspect of self-service technology, especially in the tourism sector.

Applying three theories based on economics and integrating these theories in the context of social sciences, our theoretical argument supports the influence of SSTs' characteristics on tourists' satisfaction and service excellence. We proposed the seven characteristics of the SSTs as the antecedences of service excellence, which makes several theoretical implications. It has revealed that tourists can obtain utility/satisfaction through the SSTs' characteristics (based on utility theory).

Moreover, gained satisfaction stemmed from SSTs' characteristics (based on Lancaster's consumer theory). Normatively, tourists always seek to maximize their satisfaction/utility level. It has also revealed that by receiving more (quality or quantity) of those characteristics, their utility will enhance to the maximum level known as service excellence (based on random utility theory).

This study has delved into tourists' interaction with SSTs scientifically and opened a new horizon for the adaptation of information technology in various destinations towards facilitating tourists' experience. This study has also enriched our perception that practicing 'smart tourism' on a destination is an inseparable dimension of tourist satisfaction in the context of sustaining tourist flow, which transcends the limited business scale view.

5.3.2 Managerial implications

This study has imperative implications for the management actions. Providing service excellence for tourists is the ultimate goal of managers. The wow experience beyond the satisfaction level of customers is the critical factor in returning them. The result of this research revealed that the SSTs could make customers satisfied and create a wow experience for them. Therefore, managers of hotel organizations should bear in mind that implementation of SSTs in the hotel can be the right decision. It provides the

tourists with more and a variety of services, where tourists can choose between delivering service from personnel or SSTs, and have access to many different services designed and programmed for the SSTs.

It is noteworthy to mention that service excellence from the SSTs could be achieved only by paying attention to the characteristics of SSTs, which illustrates how tourists' basic idea for each characteristic of SSTs directly affects the tourists' service excellence. Therefore, based on these research results, hotel managers should have tailor-made SSTs that are suitable and adaptable to their specific needs in their organization.

They should avoid ready-made packages because of the following reasons. First, for the functionality, the applied SSTs system needs to be in line with organizations' strategies. For instance, the multilingual option, zoom, and color-changing abilities in SSTs have a significant impact on functionality because tourists can entirely understand what they are doing, especially for elderly people. Secondly, in terms of quality of fit, the design of SSTs should fit the design of the facility (e.g., lobby) and represent the brand of the hotel. Thirdly, concerning security and privacy, the organization manager should obtain full access to the application's source code and its database to integrate with the hotel's property management system or operating system of the hotel. Fourthly, regarding customization, the capacity of SSTs should be considered to collect the tourist's information and assure security. In addition, customization allows modification of menus, messages, format, and layout.

Our finding indicates that among all significant drivers of customer's perceptions of service excellence, convenience and security/privacy (with a minimum nuance)

emerge as the strongest antecedents for business travelers, while security for leisure travelers. This highlights the importance of providing customers with more secure SSTs, as well as paying more attention to the location of SSTs and their immediate accessibility. However, convenience is the least important characteristic for leisure travelers, while it is the most important characteristic for business travelers. Moreover, results revealed that functionality is the strongest aspect of tourist satisfaction with SSTs for both tourist types, while enjoyment from SSTs is the strongest aspect of service excellence. One should bear in mind that SSTs are the innovative approaches to the constantly changing world; knowing those customers' needs and wants are also changing; therefore, to fulfill these needs, organizations are obliged to keep pace with the changing business world.

5.4 Limitations and Future Research

The present study is not without any limitation. As it focused on a few countries, future studies can focus on many countries in different parts of the world. Although this study applied a quantitative method, a qualitative approach might generate some interesting information regarding the tourists' perception regarding their experience with SSTs. Alternatively, future research may consider a comparative analysis of tourists' response behavior towards SSTs' effect on their wow-experience. Last but not least, we were not able to examine the effect of assurance on satisfaction and service excellence. The elimination of assurance is due to its cross-loading between other factors. Future studies can incorporate this aspect into their research design to examine the assurance construct.

REFERENCES

Abernethy, M. A., Chua, W., Luckett, P. F., & Selto, F. H. (1999). Research in managerial accounting: Learning from others' experiences. *Accounting & Finance*, *39*(1), 1–27.

Abrhám, J., & Wang, J. (2017). Novel Trends of Using ICTs in the Modern Tourism Industry. *Czech Journal of Social Sciences, Business and Economics*, *6*(1), 37–43.

Ahn, J. A., & Seo, S. (2018). Consumer responses to interactive restaurant self-service technology (IRSST): The role of gadget-loving propensity. *International Journal of Hospitality Management*, *74*, 109–121. https://doi.org/10.1016/j.ijhm.2018.02.020

Ahn, J., Lee, C.-K., Back, K.-J., & Schmitt, A. (2019). Brand experiential value for creating integrated resort customers' co-creation behavior. *International Journal of Hospitality Management*, *81*, 104–112. https://doi.org/10.1016/j.ijhm.2019.03.009

Aiello, T., Severt, D., Rompf, P., & Breiter, D. (2010). A fundamental exploration of administrative views of hospital hospitality and service excellence. In *Advances in hospitality and leisure* (pp. 185–211). Emerald Group Publishing Limited. https://doi.org/10.1108/S1745-3542(2010)0000006014

Ali, A., & Frew, A. J. (2013). *Information and Communication Technologies for*

Sustainable Tourism. Taylor & Francis.

Ali, V., Cullen, R., & Toland, J. (2013). Information and Communications Technology in the Tourism Sector of the Maldives: An Institutional Perspective. *2013 46th Hawaii International Conference on System Sciences*, 4226–4235. https://doi.org/10.1109/HICSS.2013.267

Alipour, H., Amelshahbaz, S., Safaeimanesh, F., Peyravi, B., & Salavati, A. (2021). The Impact of Environmental Stimuli on Hotel Service Employees' Service Sabotage—Mediation Role of Emotional Intelligence and Emotional Dissonance. *Sustainability*, *13*(2), 876. https://doi.org/10.3390/su13020876

Alkibsi, S., & Lind, M. (2013). Service Quality Dimensions Within Technology-Based Banking Services. In Caroline Howard (Ed.), *Strategic Adoption of Technological Innovations* (pp. 198–248). IGI Global. https://doi.org/10.4018/978-1-4666-2782-6.ch014

Anderson, J. C., & Gerbing, D. W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach. *Psychological Bulletin*, *103*(3), 411–423. https://psycnet.apa.org/buy/1989-14190-001

Asif, M. (2015). A critical review of service excellence models: towards developing an integrated framework. *Quality and Quantity*, *49*(2), 763–783. https://doi.org/10.1007/s11135-014-0022-y

Asif, M., & Gouthier, M. H. J. (2015). Developing a self--diagnostic framework for

assessing service excellence. *International Journal of Services and Operations Management*, *20*(4), 441–460. https://doi.org/https://doi.org/10.1504/IJSOM.2015.068527

Aslam, W., Tariq, A., & Arif, I. (2019). The Effect of ATM Service Quality on Customer Satisfaction and Customer Loyalty: An Empirical Analysis. *Global Business Review*, *20*(5), 1155–1178. https://doi.org/10.1177/0972150919846965

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*(1), 74–94.

Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing Construct Validity in Organizational Research. *Administrative Science Quarterly*, *36*(3), 421–458. https://www.jstor.org/stable/2393203

Barua, Z., Aimin, W., & Hongyi, X. (2017). A perceived reliability-based customer satisfaction model in self-service technology. *The Service Industries Journal*, 1–21. https://doi.org/10.1080/02642069.2017.1400533

Bates, K., Bates, H., & Johnston, R. (2003). Linking service to profit: The business case for service excellence. *International Journal of Service Industry Management*, *14*(2), 173–183. https://doi.org/10.1108/09564230310474147

Bentham, J. (1996). *The collected works of Jeremy Bentham: An introduction to the principles of morals and legislation*. Clarendon Press. http://fs2.american.edu/dfagel/www/Philosophers/Bentham/principlesofMorals

AndLegislation.pdf

Berman, B. (2005). How to Delight Your Customers. *California Management Review*, *48*(1), 129–151. https://doi.org/10.2307/41166331

Berry, L. L., Seiders, K., & Grewal, D. (2002). Understanding service convenience. *Journal of Marketing*, *66*(3), 1–17. https://doi.org/10.1509/jmkg.66.3.1.18505

Berryman, D. R. (2012). Augmented Reality: A Review. *Medical Reference Services Quarterly*, *31*(2), 212–218. https://doi.org/10.1080/02763869.2012.670604

Bitner, M. J. (1995). Building Service Relationships: It's all about Promises. *Journal of the Academy of Marketing Science*, *23*(4), 246–251. https://doi.org/10.1177/009207039502300403

Bloom, P. N., Milne, G. R., & Adler, R. (1994). Avoiding Misuse of New Information Technologies: Legal and Societal Considerations. *Journal of Marketing*, *58*(1), 98–110. https://doi.org/10.1177/002224299405800108

Blut, M., Wang, C., & Schoefer, K. (2016). Factors Influencing the Acceptance of Self-Service Technologies. *Journal of Service Research*, *19*(4), 396–416. https://doi.org/10.1177/1094670516662352

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best Practices for Developing and Validating Scales for Health, Social, and Behavioral Research: A Primer. *Frontiers in Public Health*, *6*, 149.

https://doi.org/10.3389/fpubh.2018.00149

Boes, K., Buhalis, D., & Inversini, A. (2016). Smart tourism destinations: ecosystems for tourism destination competitiveness. *International Journal of Tourism Cities*, *2*(2), 108–124. https://doi.org/10.1108/IJTC-12-2015-0032

Bolton, R. N., McColl-Kennedy, J. R., Cheung, L., Gallan, A., Orsingher, C., Witell, L., & Zaki, M. (2018). Customer experience challenges: bringing together digital, physical and social realms. *Journal of Service Management*, *29*(5), 776–808. https://doi.org/10.1108/JOSM-04-2018-0113

Bray, J. P. (2008). Consumer behaviour theory: approaches and models. *Unpblished Discussion Paper. Bournemouth University: Bournemouth, England*. http://eprints.bournemouth.ac.uk/10107/1/Consumer_Behaviour_Theory_-_Approaches_&_Models.pdf

Bryman, A. (2016). *Social research methods* (5th ed.). Oxford : Oxford University Press.

Buhalis, D. (2003). *ETourism: Information Technology for Strategic Tourism Management*. Financial Times Prentice Hall.

Buhalis, D. (2019). Technology in tourism-from information communication technologies to eTourism and smart tourism towards ambient intelligence tourism: a perspective article. *Tourism Review*, *75*(1), 267–272. https://doi.org/10.1108/TR-06-2019-0258

Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet—The state of eTourism research. *Tourism Management*, *29*(4), 609–623. https://doi.org/10.1016/j.tourman.2008.01.005

Buhalis, D., & O'Connor, P. (2005). Information Communication Technology Revolutionizing Tourism. *Tourism Recreation Research*, *30*(3), 7–16. https://doi.org/10.1080/02508281.2005.11081482

Buttle, F. (1996). SERVQUAL: review, critique, research agenda. *European Journal of Marketing*, *30*(1), 8–32. https://doi.org/10.1108/03090569610105762

Byrne, B. M. (2013). *Structural Equation Modeling with LISREL, PRELIS, and SIMPLIS: Basic Concepts, Applications, and Programming*. Psychology Press: East Sussex, UK.

Calp, M. H. (2020). The Role of Artificial Intelligence Within the Scope of Digital Transformation in Enterprises. In G. Ekren, A. Erkollar, & B. Oberer (Eds.), *Advanced MIS and Digital Transformation for Increased Creativity and Innovation in Business* (pp. 122–146). IGI Global. https://doi.org/10.4018/978-1-5225-9550-2.ch006

Carlzon, J. (1990). *Moments of truth*. HarperBusiness.

Cascetta, E. (2009). Random Utility Theory. In E. Cascetta (Ed.), *Transportation Systems Analysis* (Vol. 29, pp. 89–167). Springer, Boston, MA.

https://doi.org/10.1007/978-0-387-75857-2_3

Çeltek, E. (2020). Progress and Development of Virtual Reality and Augmented Reality Technologies in Tourism. In E. Çeltek (Ed.), *Handbook of Research on Smart Technology Applications in the Tourism Industry* (pp. 1–23). IGI Global. https://doi.org/10.4018/978-1-7998-1989-9.ch001

Çeltek, E., & Ilhan, I. (2020). Big Data, Artificial Intelligence, and Their Implications in the Tourism Industry. In E. Çeltek (Ed.), *Handbook of Research on Smart Technology Applications in the Tourism Industry* (pp. 115–130). IGI Global. https://doi.org/10.4018/978-1-7998-1989-9.ch006

Chaouchi, H. (2013). Introduction to the Internet of Things. In *The Internet of Things* (pp. 1–33). John Wiley & Sons, Inc. https://doi.org/10.1002/9781118600146.ch1

Cheong, R. (1995). The virtual threat to travel and tourism. *Tourism Management*, *16*(6), 417–422. https://doi.org/10.1016/0261-5177(95)00049-T

Chiu, Y. T. H., & Hofer, K. M. (2015). Service innovation and usage intention: A cross-market analysis. *Journal of Service Management*, *26*(3), 516–538. https://doi.org/10.1108/JOSM-10-2014-0274

Chuang, T. C., Liu, J. S., Lu, L. Y. Y., Tseng, F.-M., Lee, Y., & Chang, C.-T. (2017). The main paths of eTourism: trends of managing tourism through Internet. *Asia Pacific Journal of Tourism Research*, *22*(2), 213–231. https://doi.org/10.1080/10941665.2016.1220963

Chuwiruch, W., Jhundra-Indra, P., & Boonlua, S. (2016). Service Excellence Strategy and Firm Performance: A Study on Hotel Businesses in Thailand. *BU Academic Review*, *15*(2), 144–160.

Cina, C. (1990). Five Steps to Service Excellence. *Journal of Services Marketing*, *4*(2), 39–47. https://doi.org/10.1108/EUM0000000002510

Cobanoglu, C., Corbaci, K., Moreo, P. J., & Ekinci, Y. (2003). A comparative study of the importance of hotel selection components by turkish business travelers. *International Journal of Hospitality and Tourism Administration*, *4*(1), 1–22. https://doi.org/10.1300/J149v04n01_01

Coelho, P. S., & Henseler, J. (2012). Creating customer loyalty through service customization. *European Journal of Marketing*, *46*(3/4), 331–356. https://doi.org/10.1108/03090561211202503

Collier, J. E., & Barnes, D. C. (2015). Self-service delight: Exploring the hedonic aspects of self-service. *Journal of Business Research*, *68*(5), 986–993. https://doi.org/10.1016/j.jbusres.2014.09.036

Collier, J. E., & Kimes, S. E. (2013). Only If It Is Convenient: Understanding How Convenience Influences Self-Service Technology Evaluation. *Journals.Sagepub.Com*, *16*(1), 39–51. https://doi.org/10.1177/1094670512458454

Collier, J. E., Moore, R. S., Horky, A., & Moore, M. L. (2015). Why the little things

matter: Exploring situational influences on customers' self-service technology decisions. *Journal of Business Research*, *68*(3), 703–710. https://doi.org/10.1016/J.JBUSRES.2014.08.001

Collier, J. E., & Sherrell, D. L. (2010). Examining the influence of control and convenience in a self-service setting. *Journal of the Academy of Marketing Science*, *38*(4), 490–509. https://doi.org/10.1007/s11747-009-0179-4

Considine, E., & Cormican, K. (2017). The rise of the prosumer: an analysis of self-service technology adoption in a corporate context. *International Journal of Information Systems and Project Management*, *5*(2), 25–39. https://doi.org/10.12821/ijispm050202

Craig, A. B. (2013). Understanding Augmented Reality. In *Understanding Augmented Reality*. Elsevier. https://doi.org/10.1016/C2011-0-07249-6

Culnan, M. J., & Armstrong, P. K. (1999). Information Privacy Concerns, Procedural Fairness, and Impersonal Trust: An Empirical Investigation. *Organization Science*, *10*(1), 104–115. https://doi.org/10.1287/orsc.10.1.104

Czaja, R., Blair, J., & Blair, E. (2013). *Designing surveys: a guide to decisions and procedures* (Third edit). SAGE Publications.

Dabholkar, P. A. (1994). Incorporating Choice into an Attitudinal Framework: Analyzing Models of Mental Comparison Processes. *Journal of Consumer Research*, *21*(1), 100. https://doi.org/10.1086/209385

Dabholkar, P. A. (1996). Consumer evaluations of new technology-based self-service options: An investigation of alternative models of service quality. *International Journal of Research in Marketing*, *13*(1), 29–51. https://doi.org/10.1016/0167-8116(95)00027-5

Dabholkar, P. A., & Bagozzi, R. P. (2002). An Attitudinal Model of Technology-Based Self-Service: Moderating Effects of Consumer Traits and Situational Factors. *Journal of the Academy of Marketing Science*, *30*(3), 184–201. https://doi.org/10.1177/0092070302303001

Dabholkar, P. A., Bobbitt, L. M., & Lee, E. J. (2003). Understanding consumer motivation and behavior related to self-scanning in retailing implications for strategy and research on technology-based self-service. *International Journal of Service Industry Management*, *14*(1), 59–95. https://doi.org/10.1108/09564230310465994

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly: Management Information Systems*, *13*(3), 319–339. https://doi.org/10.2307/249008

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, *35*(8), 982–1003. https://doi.org/10.1287/mnsc.35.8.982

Dean, D. H. (2008). Shopper age and the use of self-service technologies. *Managing Service Quality*, *18*(3), 225–238. https://doi.org/10.1108/09604520810871856

Decker, M., Fischer, M., & Ott, I. (2017). Service Robotics and Human Labor: A first technology assessment of substitution and cooperation. *Robotics and Autonomous Systems*, *87*, 348–354. https://doi.org/10.1016/j.robot.2016.09.017

Demoulin, N. T. M., & Djelassi, S. (2016). An integrated model of self-service technology (SST) usage in a retail context. *International Journal of Retail & Distribution Management*, *44*(5), 540–559. https://doi.org/10.1108/IJRDM-08-2015-0122

Devlin, J., & Ennew, C. T. (1997). Understanding competitive advantage in retail financial services. *International Journal of Bank Marketing*, *15*(3), 73–82. https://doi.org/10.1108/02652329710165984

Ding, D. X., Hu, P. J. H., & Sheng, O. R. L. (2011). E-SELFQUAL: A scale for measuring online self-service quality. *Journal of Business Research*, *64*(5), 508–515. https://doi.org/10.1016/j.jbusres.2010.04.007

Ding, X., Verma, R., & Iqbal, Z. (2007). Self-service technology and online financial service choice. *International Journal of Service Industry Management*, *18*(3), 246–268. https://doi.org/10.1108/09564230710751479

Ding, Y., & Keh, H. T. (2016). A re-examination of service standardization versus customization from the consumer's perspective. *Journal of Services Marketing*, *30*(1), 16–28. https://doi.org/10.1108/JSM-02-2015-0088

Djelassi, S., Diallo, M. F., & Zielke, S. (2018). How self-service technology

experience evaluation affects waiting time and customer satisfaction? A moderated mediation model. *Decision Support Systems*, *111*, 38–47. https://doi.org/10.1016/j.dss.2018.04.004

Doğan, S. (2020). In Which Department(s) the Robots Might Be Employed. In E. Çeltek (Ed.), *Handbook of Research on Smart Technology Applications in the Tourism Industry* (pp. 295–322). IGI Global. https://doi.org/10.4018/978-1-7998-1989-9.ch014

Dolnicar, S. (2002). Business travellers' hotel expectations and disappointments: A different perspective to hotel attribute importance investigation. *Asia Pacific Journal of Tourism Research*, *7*(1), 29–35. https://doi.org/10.1080/10941660208722107

Drosos, D., Chalikias, M., Skordoulis, M., Kalantonis, P., & Papagrigoriou, A. (2017). The Strategic Role of Information Technology in Tourism: The Case of Global Distribution Systems. In *Tourism, culture and heritage in a smart economy* (pp. 207–219). Springer. https://doi.org/10.1007/978-3-319-47732-9_15

Eccles, R. G., Newquist, S. C., & Roland, S. (2007). Reputation and Its Risks. *Harvard Business Review*, *85*(2), 1–10.

Elisabeth, E., Nock, R., & Célimène, F. (2013). Demonstrator of a Tourist Recommendation System. In *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics): Vol. 8302 LNCS* (pp. 171–175). https://doi.org/10.1007/978-3-

319-03689-2_11

Elliott, K. M., & Hall, M. C. (2005). Assessing Consumers' propensity To Embrace Self-Service Technologies: Are There Gender Differences? *Marketing Management Journal*, *15*(2), 98–107.

Engeset, M. G., Hull, J. S., & Velvin, J. (2016). Promoting service excellence for tourist destinations. *International Journal of Culture, Tourism and Hospitality Research*, *10*(4), 440–454. https://doi.org/10.1108/IJCTHR-08-2015-0097

Fernandes, T., & Pedroso, R. (2017). The effect of self-checkout quality on customer satisfaction and repatronage in a retail context. *Service Business*, *11*(1), 69–92. https://doi.org/10.1007/s11628-016-0302-9

Fishburn, P. C. (1968). Utility Theory. *Management Science*, *14*(5), 335–378. https://doi.org/10.1287/mnsc.14.5.335

Fishburn, P. C. (1970). *Utility theory for decision making*. Research analysis corp McLean VA.

Ford, R. C., Sturman, M. C., & Heaton, C. P. (2012). *Managing quality service in hospitality : how organizations achieve excellence in the guest experience*. Delmar, Cengage Learning.

Fornell, C., Johnson, M. D., Anderson, E. W., Cha, J., & Bryant, B. E. (1996). The American Customer Satisfaction Index: Nature, Purpose, and Findings. *Journal*

of Marketing, *60*(4), 7–18. https://doi.org/10.2307/1251898

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 39–50. https://doi.org/10.1177/002224378101800104

Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in Online Shopping: An Integrated Model. *MIS Quarterly*, *27*(1), 51–90. https://doi.org/10.2307/30036519

George, A., & Kumar, G. S. G. (2014). Impact of service quality dimensions in internet banking on customer satisfaction. *DECISION*, *41*(1), 73–85. https://doi.org/10.1007/s40622-014-0028-2

Glazer, R. (1991). Marketing in an Information-Intensive Environment: Strategic Implications of Knowledge as an Asset. *Journal of Marketing*, *55*(4), 1–19. https://doi.org/10.1177/002224299105500401

Goodwin, N. C. (1987). Functionality and usability. *Communications of the ACM*, *30*(3), 229–233. https://doi.org/10.1145/214748.214758

Gouthier, M., Giese, A., & Bartl, C. (2012). Service excellence models: a critical discussion and comparison. *Managing Service Quality: An International Journal*, *22*(5), 447–464. https://doi.org/10.1108/09604521211281378

Grönroos, C. (2007). The CSS Model. In *Service Excellence als Impulsgeber* (pp. 187–

196). Gabler. https://doi.org/10.1007/978-3-8349-9544-5_11

Groth, M., Wu, Y., Nguyen, H., & Johnson, A. (2019). The Moment of Truth: A Review, Synthesis, and Research Agenda for the Customer Service Experience. *Annual Review of Organizational Psychology and Organizational Behavior*, *6*, 89–113. https://doi.org/10.1146/annurev-orgpsych-012218-015056

Guliyev, G., Avci, T., Öztüren, A., & Safaeimanesh, F. (2019). Effects of professionalism on employee satisfaction and organizational commitment at five star hotels in Baku. *Journal of East European Management Studies*, *24*(3), 423–446. https://doi.org/10.5771/0949-6181-2019-3-423

Gunawardana, H., Kulathunga, D., & Perera, W. (2015). Impact of Self Service Technology Quality on Customer Satisfaction: A Case of Retail Banks in Western Province in Sri Lanka. *Gadjah Mada International Journal of Business*, *17*(1), 1–24. http://journal.ugm.ac.id/gamaijb

Gures, N., Inan, H., & Arslan, S. (2018). Assessing the self-service technology usage of Y-Generation in airline services. *Journal of Air Transport Management*, *71*, 215–219. https://doi.org/10.1016/j.jairtraman.2018.04.008

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage, U.k.

Hariandja, E. S., Simatupang, T. M., Nasution, R. A., & Larso, D. (2014). Dynamic Marketing and Service Innovation for Service Excellence. *Gadjah Mada*

International Journal of Business, *16*(2), 143. https://doi.org/10.22146/gamaijb.5461

Hayes, A. F. (2017). *Introduction to Mediation, Moderation, and Conditional Process Analysis* (Second). The Guilford Press. www.guilford.com/ebooks

Hayes, A. F., Montoya, A. K., & Rockwood, N. J. (2017). The Analysis of Mechanisms and Their Contingencies: PROCESS versus Structural Equation Modeling. *Australasian Marketing Journal*, *25*(1), 76–81. https://doi.org/10.1016/j.ausmj.2017.02.001

He, Z., Yang, X., Wang, W., & Zhang, M. (2017). Measuring service quality in telematics service: development and validation of multidimensional TeleServQ scale. *Total Quality Management & Business Excellence*, *28*(9–10), 1166–1182. https://doi.org/10.1080/14783363.2017.1310709

Hensher, D. A., Rose, J. M., & Greene, W. H. (2015). *Applied Choice Analysis* (2nd ed.). Cambridge University Press. https://doi.org/10.1017/CBO9781316136232

Hilton, T., Hughes, T., Little, E., & Marandi, E. (2013). Adopting self-service technology to do more with less. *Journal of Services Marketing*, *27*(1), 3–12. https://doi.org/10.1108/08876041311296338

Holbrook, M. B., & Hirschman, E. C. (1982). The Experiential Aspects of Consumption: Consumer Fantasies, Feelings, and Fun. *Journal of Consumer Research*, *9*(2), 132–140. https://doi.org/10.1086/208906

Hossain, M. S., Zhou, X., & Rahman, M. F. (2019). Customer satisfaction under heterogeneous services of different self-service technologies. *Management & Marketing. Challenges for the Knowledge Society*, *14*(1), 90–107. https://doi.org/10.2478/mmcks-2019-0007

Iqbal, M. S., Ul Hassan, M., & Habibah, U. (2018). Impact of self-service technology (SST) service quality on customer loyalty and behavioral intention: The mediating role of customer satisfaction. *Cogent Business and Management*, *5*(1). https://doi.org/10.1080/23311975.2018.1423770

Ivanov, S. H., & Webster, C. (2017). Designing robot-friendly hospitality facilities. *Proceedings of the Scientific Conference "Tourism. Innovations. Strategies", 13-14 October 2017*, 74–81. https://ssrn.com/abstract=3053206

Jackson, D., & Humble, J. (1994). Service Excellence – The Role of Information Technology. *Managing Service Quality: An International Journal*, *4*(4), 36–40. https://doi.org/10.1108/09604529410085827

Johansson, P. O. (1994). *The economic theory and measurement of environmental benefits*. Cambridge University Press.

Johnston, R. (2004). Towards a better understanding of service excellence. *Managing Service Quality: An International Journal*, *14*, 129–133. https://doi.org/10.1108/09604520410528554

Johnston, R. (2007). Insights into Service Excellence. In *Service Excellence als*

Impulsgeber (pp. 17–35). Gabler. https://doi.org/10.1007/978-3-8349-9544-5_2

Judd, C. M., Smith, E. R., & Kidder, L. H. (1991). *Research methods in social relations*. Holt, Rinehart, and Winston.

Khan, H. (2011). Internal marketing and service excellence in SMEs. In S. Nwankwo (Ed.), *Entrepreneurship marketing: principles and practice of SME marketing* (1st ed.). Routledge.

Khan, M. S., Woo, M., Nam, K., & Chathoth, P. K. (2017). Smart city and smart tourism: A case of Dubai. *Sustainability (Switzerland)*, *9*(12). https://doi.org/10.3390/su9122279

Khatri, I. (2019). Information Technology in Tourism & Hospitality Industry: A Review of Ten Years' Publications. *Journal of Tourism and Hospitality Education*, *9*, 74–87. https://doi.org/10.3126/jthe.v9i0.23682

Kim, H. bumm, Lee, D. S., & Ham, S. (2013). Impact of hotel information security on system reliability. *International Journal of Hospitality Management*, *35*, 369–379. https://doi.org/10.1016/j.ijhm.2012.06.002

Kim, J.-H., & Park, J.-W. (2019). The Effect of Airport Self-Service Characteristics on Passengers' Perceived Value, Satisfaction, and Behavioral Intention: Based on the SOR Model. *Sustainability*, *11*(19), 5352. https://doi.org/10.3390/su11195352

Kim, J. S., Christodoulidou, N., & Choo, Y. C. (2013). Factors influencing customer acceptance of kiosks at quick service restaurants. *Journal of Hospitality and Tourism Technology*, *4*(1), 40–63. https://doi.org/10.1108/17579881311302347

Kim, M., & Qu, H. (2014). Travelers' behavioral intention toward hotel self-service kiosks usage. *International Journal of Contemporary Hospitality Management, 26*(2), 225–245. https://doi.org/10.1108/IJCHM-09-2012-0165

Klein, Hannes Werthner, S. (1999). ICT and the Changing Landscape of Global Tourism Distribution. *Electronic Markets*, *9*(4), 256–262. https://doi.org/10.1080/101967899358941

Klier, J., Klier, M., Müller, A.-L., & Rauch, C. (2016). The impact of self-service technologies – towards an economic decision model and its application at the German Federal Employment Agency. *Journal of Decision Systems*, *25*(2), 151–172. https://doi.org/10.1080/12460125.2016.1141274

Kokkinou, A., & Cranage, D. A. (2015). Why wait? Impact of waiting lines on self-service technology use. *International Journal of Contemporary Hospitality Management*, *27*(6), 1181–1197. https://doi.org/10.1108/IJCHM-12-2013-0578

Kounavis, C. D., Kasimati, A. E., & Zamani, E. D. (2012). Enhancing the Tourism Experience through Mobile Augmented Reality: Challenges and Prospects. *International Journal of Engineering Business Management*, *4*, 10. https://doi.org/10.5772/51644

Ku, E. C. S., & Chen, C. Der. (2013). Fitting facilities to self-service technology usage: Evidence from kiosks in Taiwan airport. *Journal of Air Transport Management*, *32*, 87–94. https://doi.org/10.1016/j.jairtraman.2013.07.001

Kucukusta, D., Heung, V. C. S., & Hui, S. (2014). Deploying Self-Service Technology in Luxury Hotel Brands: Perceptions of Business Travelers. *Journal of Travel & Tourism Marketing*, *31*(1), 55–70. https://doi.org/10.1080/10548408.2014.861707

Kudyba, S. (2014). Big Data, Mining, and Analytics. In *Big Data, Mining, and Analytics*. Auerbach Publications. https://doi.org/10.1201/b16666

Lancaster, K. J. (1966). A New Approach to Consumer Theory. *Journal of Political Economy*, *74*(2), 132–157. https://doi.org/10.1086/259131

Lavrakas, P. (2008). Encyclopedia of Survey Research Methods. In *Encyclopedia of Survey Research Methods*. Sage Publications, Inc. https://doi.org/10.4135/9781412963947

Lee, H.-J. (2017). Personality determinants of need for interaction with a retail employee and its impact on self-service technology (SST) usage intentions. *Journal of Research in Interactive Marketing*, *11*(3), 214–231. https://doi.org/10.1108/JRIM-04-2016-0036

Lee, H.-J., & Lyu, J. (2016). Personal values as determinants of intentions to use self-service technology in retailing. *Computers in Human Behavior*, *60*, 322–332.

https://doi.org/10.1016/J.CHB.2016.02.051

Lee, H.-J., & Lyu, J. (2019). Exploring factors which motivate older consumers' self-service technologies (SSTs) adoption. *The International Review of Retail, Distribution and Consumer Research*, *29*(2), 218–239. https://doi.org/10.1080/09593969.2019.1575261

Lewis-Beck, M., Bryma, A. E., & Liao, T. F. (Eds.). (2004). *The SAGE Encyclopedia of Social Science Research Methods*. SAGE Publications.

Li, S. (2020). The impact of service quality, self-service technology, and the corporate image on customer satisfaction and customer revisit intention among luxury hotels in Kuala Lumpur, Malaysia. *International Journal of Services, Economics and Management*, *11*(1), 48–70. https://doi.org/10.1504/IJSEM.2020.107794

Lian, J. W. (2018). Why is self-service technology (SST) unpopular? Extending the IS success model. *Library Hi Tech*. https://doi.org/10.1108/LHT-01-2018-0015

Lin, J.-S. C., & Hsieh, P.-L. (2011). Assessing the Self-service Technology Encounters: Development and Validation of SSTQUAL Scale. *Journal of Retailing*, *87*(2), 194–206. https://doi.org/10.1016/j.jretai.2011.02.006

Liu, C., Hung, K., Wang, D., & Wang, S. (2020). Determinants of self-service technology adoption and implementation in hotels: the case of China. *Journal of Hospitality Marketing & Management*, *29*(6), 636–661. https://doi.org/10.1080/19368623.2020.1689216

Luu, T., Viet, L., Masli, E., & Rajendran, D. (2019). Corporate social responsibility, ambidextrous leadership, and service excellence. *Marketing Intelligence & Planning*, *37*(5), 580–594. https://doi.org/10.1108/MIP-05-2018-0157

Mankiw, N. G., & Taylor, M. P. (2017). *Economics* (4th ed.). Cengage Learning.

Marsh, H. W., & Grayson, D. (1995). Latent variable models of multitrait-multimethod data. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 177–198). Sage Publications, Inc.

Marton-Williams, J. (1986). Questionnaire Design. In R. M. Worcester & J. Downham (Eds.), *Consumer market research handbook*. North-Holland.

Mattila, A. (1999). Consumers' value judgements: How business travelers as evaluate luxury-hotel services. *Cornell Hotel and Restaurant Administration Quarterly*, *40*(1), 40–46.

McFadden, D. (1981). Econometric models of probabilistic choice. In C. F. Manski & D. McFadden (Eds.), *Structural analysis of discrete data with econometric applications* (pp. 198–272). Cambridge, Mass: MIT Press. https://eml.berkeley.edu/~mcfadden/discrete/ch5.pdf

Mcgorry, S. Y. (2000). Measurement in a cross-cultural environment: Survey translation issues. *Qualitative Market Research: An International Journal*, *3*(2), 74–81.

Meuter, M. L., Ostrom, A. L., Bitner, M. J., & Roundtree, R. (2003). The influence of technology anxiety on consumer use and experiences with self-service technologies. *Journal of Business Research*, *56*(11), 899–906. https://doi.org/10.1016/S0148-2963(01)00276-4

Meuter, M. L., Ostrom, A. L., Roundtree, R. I., & Bitner, M. J. (2000). Self-Service Technologies: Understanding Customer Satisfaction with Technology-Based Service Encounters. *Journal of Marketing*, *64*(3), 50–64. https://doi.org/10.1509/jmkg.64.3.50.18024

Meyers, L. S., Gamst, G., & Guarino, A. J. (2005). *Applied Multivariate Research: Design and Interpretation*. Sage publications.

Milne, G. R. (2000). Privacy and Ethical Issues in Database/Interactive Marketing and Public Policy: A Research Framework and Overview of the Special Issue. *Journal of Public Policy & Marketing*, *19*(1), 1–6. https://doi.org/10.1509/jppm.19.1.1.16934

Milne, S., & Ateljevic, I. (2001). Tourism, economic development and the global-local nexus: Theory embracing complexity. *Tourism Geographies*, *3*(4), 369–393. https://doi.org/10.1080/146166800110070478

Monino, J.-L., & Sedkaoui, S. (2016). Big Data, Open Data and Data Development. In *Big Data, Open Data and Data Development* (Vol. 3). John Wiley & Sons, Inc. https://doi.org/10.1002/9781119285199

Narteh, B. (2015). Perceived service quality and satisfaction of self-service technology. *International Journal of Quality & Reliability Management*, *32*(4), 361–380. https://doi.org/10.1108/IJQRM-08-2012-0113

Navío-Marco, J., Ruiz-Gómez, L. M., & Sevilla-Sevilla, C. (2018). Progress in information technology and tourism management: 30 years on and 20 years after the internet - Revisiting Buhalis & Law's landmark study about eTourism. *Tourism Management*, *69*, 460–470. https://doi.org/10.1016/j.tourman.2018.06.002

Neuhofer, B., Buhalis, D., & Ladkin, A. (2013). High Tech for High Touch Experiences: A Case Study From the Hospitality Industry. In *Information and Communication Technologies in Tourism 2013* (pp. 290–301). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-36309-2_25

Nijssen, E. J., Schepers, J. J. L., & Belanche, D. (2016). Why did they do it? How customers' self-service technology introduction attributions affect the customer-provider relationship. *Journal of Service Management*, *27*(3), 276–298. https://doi.org/10.1108/JOSM-08-2015-0233

Nunnally, J. C. (1994). *Psychometric Theory* (3th ed.). Tata McGraw-Hill Education.

Oliver, R. L. (2014). *Satisfaction : a behavioral perspective on the consumer* (Second). Routledge.

Oliver, R. L., Rust, R. T., & Varki, S. (1997). Customer delight: Foundations, findings,

and managerial insight. *Journal of Retailing*, *73*(3), 311–336.

Orel, F. D., & Kara, A. (2014). Supermarket self-checkout service quality, customer satisfaction, and loyalty: Empirical evidence from an emerging market. *Journal of Retailing and Consumer Services*, *21*(2), 118–129. https://doi.org/10.1016/j.jretconser.2013.07.002

Ostrom, A., & Lacobucci, D. (1995). Consumer Trade-Offs and the Evaluation of Services. *Journal of Marketing*, *59*(1), 17–28. https://doi.org/10.1177/002224299505900102

Othman, A. K., Hamzah, M. I., & Abu Hassan, L. F. (2020). Modeling the contingent role of technological optimism on customer satisfaction with self-service technologies: A case of cash-recycling ATMs. *Journal of Enterprise Information Management*, *33*(3), 559–578. https://doi.org/10.1108/JEIM-09-2019-0295

Özen, I. A. (2020). Internet of Things in Tourism. In E. Çeltek (Ed.), *Handbook of Research on Smart Technology Applications in the Tourism Industry* (pp. 131–154). IGI Global. https://doi.org/10.4018/978-1-7998-1989-9.ch007

Özkul, E., Uygun, E., & Levent, S. (2020). Digital Gamification in the Tourism Industry. In E. Çeltek (Ed.), *Handbook of Research on Smart Technology Applications in the Tourism Industry* (pp. 169–203). IGI Global. https://doi.org/10.4018/978-1-7998-1989-9.ch009

Padma, P., & Wagenseil, U. (2018). Retail service excellence: antecedents and

consequences. *International Journal of Retail and Distribution Management*, *46*(5), 422–441. https://doi.org/10.1108/IJRDM-09-2017-0189

Pan, X., & Hamilton, A. F. de C. (2018). Why and how to use virtual reality to study human social interaction: The challenges of exploring a new research landscape. *British Journal of Psychology*, *109*(3), 395–417. https://doi.org/10.1111/bjop.12290

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A Multiple-Item Scale For Measuring Consumer Perc. *Journal of Retailing; Spring*, *64*(1), 12–37.

Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). E-S-QUAL A Multiple-Item Scale for Assessing Electronic Service Quality. *Journals.Sagepub.Com*, *7*(3), 213–233. https://doi.org/10.1177/1094670504271156

Petruska, R. (2012). *Gemba Walks for Service Excellence: The Step-by-Step Guide for Identifying Service Delighters* (1st ed.). Taylor & Francis - CRC Press. https://books.google.com.cy/books?id=uxLSBQAAQBAJ

Phelps, J. E., D'Souza, G., & Nowak, G. J. (2001). Antecedents and consequences of consumer privacy concerns: An empirical investigation. *Journal of Interactive Marketing*, *15*(4), 2–17. https://doi.org/10.1002/dir.1019

Pindyck, R. S., & Rubinfeld, D. L. (2015). *Microeconomics* (8th ed.). Pearson.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common

method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of Method Bias in Social Science Research and Recommendations on How to Control It. *Annual Review of Psychology*, *63*(1), 539–569. https://doi.org/10.1146/annurev-psych-120710-100452

Pradhan, M., Oh, J., & Lee, H. (2018). Understanding Travelers' Behavior for Sustainable Smart Tourism: A Technology Readiness Perspective. *Sustainability*, *10*(11), 4259. https://doi.org/10.3390/su10114259

Robertson, N., McDonald, H., Leckie, C., & McQuilken, L. (2016). Examining customer evaluations across different self-service technologies. *Journal of Services Marketing*, *30*(1), 88–102. https://doi.org/10.1108/JSM-07-2014-0263

Rodriguez-Lizundia, E., Marcos, S., Zalama, E., Gómez-García-Bermejo, J., & Gordaliza, A. (2015). A bellboy robot: Study of the effects of robot behaviour on user engagement and comfort. *International Journal of Human-Computer Studies*, *82*, 83–95. https://doi.org/10.1016/j.ijhcs.2015.06.001

Rosenbaum, M. S., & Wong, I. K. A. (2015). If you install it, will they use it? Understanding why hospitality customers take "technological pauses" from self-service technology. *Journal of Business Research*, *68*(9), 1862–1868. https://doi.org/10.1016/j.jbusres.2015.01.014

Rust, R. T., & Oliver, R. L. (2000). Should we delight the customer? *Journal of the Academy of Marketing Science*, *28*(1), 86–94.

Saleh, F., & Ryan, C. (1991). Analysing Service Quality in the Hospitality Industry Using the SERVQUAL Model. *The Service Industries Journal*, *11*(3), 324–345. https://doi.org/10.1080/02642069100000049

Schaarschmidt, M., & Höber, B. (2017). Digital booking services: comparing online with phone reservation services. *Journal of Services Marketing*, *31*(7), 704–719. https://doi.org/10.1108/JSM-04-2016-0145

Schatzberg, E. (2006). "Technik" Comes to America: Changing Meanings of" Technology" before 1930. *Technology and Culture*, *47*(3), 486–512.

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, *8*(2), 23–74.

Schneider, B., & Bowen, D. E. (1999). Understanding Customer Delight and Outrage. *Sloan Management Review*, *41*(1), 35–45.

Sekaran, U., & Bougie, R. (2016). *Research Methods For Business: A Skill Building Approach*. Wiley.

Sekhon, H. S., Al-Eisawi, D., Roy, S. K., & Pritchard, A. (2015). Service excellence in UK retail banking: customers' perspectives of the important antecedents.

International Journal of Bank Marketing, *33*(7), 904–921. https://doi.org/10.1108/IJBM-10-2014-0136

Sposito, V. A., Hand, M. L., & Skarpness, B. (1983). On the efficiency of using the sample kurtosis in selecting optimal lpestimators. *Communications in Statistics-Simulation and Computation*, *12*(3), 265–272.

Stückler, J., & Behnke, S. (2011). Improving People Awareness of Service Robots by Semantic Scene Knowledge. In *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics): Vol. 6556 LNAI* (pp. 157–168). https://doi.org/10.1007/978-3-642-20217-9_14

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics.* (3th ed.). HaperCollins.

Taillon, B. J., & Huhmann, B. A. (2019). Strategic consequences of self-service technology evaluations. *Journal of Strategic Marketing*, *27*(3), 268–279. https://doi.org/10.1080/0965254X.2017.1411387

Tanaka, J. S. (1993). Multifaceted conceptions of fit in structural equation models. *Testing Structural Equation Models*, 10–39.

Tay, L., & Jebb, A. (2017). Scale Development. In S. G. Rogelberg (Ed.), *The SAGE Encyclopedia of Industrial and Organizational Psychology*, (2nd editio). SAGE Publications, Inc.

Thamaraiselvan, N., Arul, S. T., & Kasilingam, D. (2019). Understanding the intention to use self service technologies in the airline industry. *International Journal of Services, Economics and Management*, *10*(2), 89. https://doi.org/10.1504/IJSEM.2019.100918

Theodosiou, M., Katsikea, E., Samiee, S., & Makri, K. (2019). A Comparison of Formative Versus Reflective Approaches for the Measurement of Electronic Service Quality. *Journal of Interactive Marketing*, *47*, 53–67. https://doi.org/10.1016/j.intmar.2019.03.004

Thürer, M., Tomašević, I., Stevenson, M., Fredendall, L. D., & Protzman, C. W. (2018). On the meaning and use of excellence in the operations literature: a systematic review. *Total Quality Management & Business Excellence*, 1–28. https://doi.org/10.1080/14783363.2018.1434770

Thüring, M., & Mahlke, S. (2007). Usability, aesthetics and emotions in human–technology interaction. *International Journal of Psychology*, *42*(4), 253–264. https://doi.org/10.1080/00207590701396674

Tractinsky, N. (2004). Toward the Study of Aesthetics in Information Technology. *ICIS 2004 Proceedings*, 11–20. https://aisel.aisnet.org/icis2004/62/

Tsai, C.-T. S., & Wang, Y.-C. (2017). Experiential value in branding food tourism. *Journal of Destination Marketing & Management*, *6*(1), 56–65. https://doi.org/10.1016/j.jdmm.2016.02.003

Tussyadiah, I. P., Wang, D., Jung, T. H., & tom Dieck, M. C. (2018). Virtual reality, presence, and attitude change: Empirical evidence from tourism. *Tourism Management*, *66*, 140–154. https://doi.org/10.1016/j.tourman.2017.12.003

Ukpabi, D. C., & Karjaluoto, H. (2017). Consumers' acceptance of information and communications technology in tourism: A review. *Telematics and Informatics*, *34*(5), 618–644. https://doi.org/10.1016/j.tele.2016.12.002

Vakulenko, Y., Hellström, D., & Oghazi, P. (2018). Customer value in self-service kiosks: a systematic literature review. *International Journal of Retail and Distribution Management*, *46*(5), 507–527. https://doi.org/10.1108/IJRDM-04-2017-0084

Wang, C., Harris, J., & Patterson, P. G. (2012). Customer choice of self-service technology: The roles of situational influences and past experience. *Journal of Service Management*, *23*(1), 54–78. https://doi.org/10.1108/09564231211208970

Wang, C., Harris, J., & Patterson, P. G. (2013). The Roles of Habit, Self-Efficacy, and Satisfaction in Driving Continued Use of Self-Service Technologies: A Longitudinal Study. *Journals.Sagepub.Com*, *16*(3), 400–414. https://doi.org/10.1177/1094670512473200

Wang, C., Harris, J., & Patterson, P. G. (2017). Modeling the habit of self-service technology usage. *Australian Journal of Management*, *42*(3), 462–481. https://doi.org/10.1177/0312896216640862

Wang, X., Yuen, K. F., Wong, Y. D., & Teo, C.-C. (2019). Consumer participation in last-mile logistics service: an investigation on cognitions and affects. *International Journal of Physical Distribution & Logistics Management*, *49*(2), 217–238. https://doi.org/10.1108/IJPDLM-12-2017-0372

Warnock, M. (2003). *Utilitarianism and on Liberty*. Blackwell Publishing Ltd.

Wei, W., Torres, E., & Hua, N. (2016). Improving consumer commitment through the integration of self-service technologies: A transcendent consumer experience perspective. *International Journal of Hospitality Management*, *59*, 105–115. https://doi.org/10.1016/J.IJHM.2016.09.004

Wei, W., Torres, E. N., & Hua, N. (2017). The power of self-service technologies in creating transcendent service experiences. *International Journal of Contemporary Hospitality Management*, *29*(6), 1599–1618. https://doi.org/10.1108/IJCHM-01-2016-0029

Weijters, B., Rangarajan, D., Falk, T., & Schillewaert, N. (2007). Determinants and Outcomes of Customers' Use of Self-Service Technology in a Retail Setting. *Journal of Service Research*, *10*(1), 3–21. https://doi.org/10.1177/1094670507302990

Werbach, K., & Hunter, D. (2015). *The Gamification Toolkit: Dynamics, Mechanics, and Components for the Win*. Wharton School Press.

Williams, P., & Hobson, J. P. (1995). Virtual reality and tourism: fact or fantasy?

Tourism Management, *16*(6), 423–427. https://doi.org/10.1016/0261-5177(95)00050-X

Wirtz, J., & Johnston, R. (2003). Singapore Airlines: What it takes to sustain service excellence – a senior management perspective. *Managing Service Quality: An International Journal*, *13*(1), 10–19. https://doi.org/10.1108/09604520310456672

Wirtz, J., & Lovelock, C. (2016). Services Marketing. In *Services Marketing* (8th ed.). WORLD SCIENTIFIC (US). https://doi.org/10.1142/y0001

Xu, F., Nash, N., & Whitmarsh, L. (2020). Big data or small data? A methodological review of sustainable tourism. *Journal of Sustainable Tourism*, *28*(2), 144–163. https://doi.org/10.1080/09669582.2019.1631318

Xu, F., Tian, F., Buhalis, D., Weber, J., & Zhang, H. (2016). Tourists as Mobile Gamers: Gamification for Tourism Marketing. *Journal of Travel & Tourism Marketing*, *33*(8), 1124–1142. https://doi.org/10.1080/10548408.2015.1093999

Yen, H. J. R., & Gwinner, K. P. (2003). Internet retail customer loyalty: The mediating role of relational benefits. *International Journal of Service Industry Management*, *14*(5), 483–500. https://doi.org/10.1108/09564230310500183

Yoon, C., & Choi, B. (2020). Role of Situational Dependence in the Use of Self-Service Technology. *Sustainability*, *12*(11), 4653. https://doi.org/10.3390/su12114653

Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: A critical review of extant knowledge. *Journal of the Academy of Marketing Science*, *30*(4), 362–375. https://doi.org/10.1177/009207002236911

Zhang, T., Seo, S., & Ahn, J. A. (2019). Why hotel guests go mobile? Examining motives of business and leisure travelers. *Journal of Hospitality Marketing & Management*, *28*(5), 621–644. https://doi.org/10.1080/19368623.2019.1539936

Zichermann, G., & Cunningham, C. (2011). *Gamification by Design: Implementing Game Mechanics in Web and Mobile Apps*. O'Reilly Media.

APPENDIX

Questionnaire

Questionnaire – English

Dear Participant:

I am a Ph.D. student in the faculty of Tourism at Eastern Mediterranean University (EMU). I am inviting you to participate in this research by completing this survey. The following questionnaire has only one criterion. If you have an experience of using Self-Service Technologies like Self-Check-in and Check-out in hotels, Grocery Stores, Airlines and etc. in last year, please fill this questionnaire. In order to ensure that all information will remain confidential, please do not include your name. Participation is strictly voluntary and you may refuse to participate at any time. If you would like a summary copy of this study please write your email address.

Thank you for your participation in advance.

Do you have experience of using Self-Service Technologies in the last twelve months?

☐ Yes

☐ No

Part I – Main questions:

Please answer the following questions according to your level of agreement with each item:

1) Strongly Disagree 2) Disagree 3) Neutral

4) Agree 5) Strongly Agree

Questions	1	2	3	4	5
• I can receive my services with the hotel's Self-Service Technologies in a short time/quickly					
• The service process of the hotel's Self-Service Technologies is clear					
• Using the hotel's Self-Service Technologies requires little effort and easy to use					
• I can get my services done smoothly with the hotel's Self-Service Technologies					
• Each service item/function of the Self-Service Technologies is error-free					
• The hotel's Self-Service Technologies deliver the promised services					
• The hotel's Self-Service Technologies deal with the problems immediately					

• The hotel's Self-Service Technologies have the tourist's best interests at heart					
• The hotel's Self-Service Technologies are informative					
• The hotel's Self-Service Technologies deal with requests promptly					
• The operations of the hotel's Self-Service Technologies are interesting					
• I feel good being able to use the Self-Service Technologies					
• The hotel's Self-Service Technologies have interesting additional Functions					
• The hotel's Self-Service Technologies provide me with all the necessary information					
• I feel safe in my transactions with the hotel's Self-Service Technologies					
• A clear privacy policy is stated when I use the hotel's Self-Service Technologies					
• The hotel that is providing the Self-Service Technologies is well-known					
• The hotel that is providing the Self-Service Technologies has a good reputation					
• The layout of the hotel's Self-Service Technologies is aesthetically appealing					

• The hotel's Self-Service Technologies appear to use up-to-date technology					
• The Self-Service Technologies have operating hours convenient to customers					
• It is easy and convenient to reach the hotel's Self-Service Technologies					
• The hotel's Self-Service Technologies understand my specific needs					
• The hotel's Self-Service Technologies have features that are personalized for me					
• Overall, I am satisfied with the Self-Service Technologies offered by the hotel					
• The Self-Service Technologies offered by the hotel exceed my expectation					
• The Self-Service Technologies offered by the hotel are close to my ideal types of Self-Service Technologies					

Part II – Demographic questions:

1. What is your purpose of visiting the destination?

☐ Leisure (e.g. for vacation, sport, entertainment, etc.)

☐ Business (e.g. for meeting, conferences, etc.) ☐ Other

2. What are the purposes of using Self-Service Technologies while you are traveling?

☐ For self-check-in ☐ For self-check-out

☐ For seeking information ☐ For self-ordering ☐ Other

3. How often do you travel in a year?

☐ Once ☐ Twice ☐ Three times

☐ Four times ☐ Five times or more

4. Gender: ☐ Male ☐ Female ☐ Prefer not to say

5. Age: _____ years old (e.g., 35)

6. What is your marital status?

☐ Single ☐ Married ☐ Divorced/ Widowed/ Separated

7. What is your educational level?

☐ High school degree or lower ☐ Associate degree ☐ Bachelor

☐ Master ☐ PhD

8. Which if the following best describes your current occupation?

☐ Employed - Full-time ☐ Employed - Part-time ☐ Unemployed

☐ Self-employed/Freelance ☐ Student ☐ Retired

9. Where are you from? _____ (e.g., American)

Dear participant,

Thank you very much for your time. If you would like to receive the result of this research please write your Email address below. Email: _____

Best Regards

Questionnaire – Turkish

Sayın Katılımcı:

Ben Doğu Akdeniz Üniversitesi Turizm Fakültesi'nde Doktora eğitimimi yapmaktayım. Doktora tezimin parçası olan bu anketi doldurmak üzere sizi bu araştırmaya katılmaya davet ediyorum. Aşağıdaki anketin sadece bir kriteri bulunmaktadır. Son zamanlarda otellerde, marketlerde, Havayollarında vb. Self-Check-in ve Check-out gibi Self-Servis Teknolojilerini kullanma deneyiminiz varsa, lütfen bu anketi doldurun. Tüm bilgilerin gizli kalacağından emin olmak için lütfen adınızı eklemeyin. Katılım kesinlikle isteğe bağlıdır ve dilediğiniz zaman katılmayı reddedebilirsiniz. Bu çalışmanın özet bir kopyasını istiyorsanız, lütfen e-posta adresinizi belirtin.

Katılımınız için şimdiden teşekkür ederiz.

Son on iki ay içerisinde Self Servis Teknolojilerini kullanma deneyiminiz var mı?

☐ Evet

☐ Hayır

Bölüm I - Ana Sorular:

Lütfen aşağıdaki soruları, katılıp/katılmama derecelerini göz önüne alarak cevaplayınız;

1) Kesinlikle Katılmıyorum 2) Katılmıyorum 3) Nötr

4) Katılıyorum 5) Kesinlikle Katılıyorum

Questions	1	2	3	4	5
• Hizmetlerimi otelin Self Servis Teknolojileri ile kısa sürede / hızlı bir şekilde alabilirim					
• Otelin Self Servis Teknolojilerinin hizmet süreci net ve belirgindir					
• Otelin Self Servis Teknolojilerini kullanmak çok az çaba gerektirmekte ve kullanımı kolaydır					
• Otelin Self Servis Teknolojileri aracalığı ile hizmetlerimi sorunsuz bir şekilde yapabilirim					
• Otelin Self Servis Teknolojileri vaat edilen hizmetleri sunmaktadır					
• Otelin Self Servis Teknolojileri sorunları hemen ele almaktadır					
• Otelin Self Servis Teknolojileri, turistin menfaatlerinin merkezinde yer almaktadır					
• Otelin Self Servis Teknolojileri bilgilendiricidir					

• Otelin Self Servis Teknolojileri talepleri derhal ele almaktadır					
• Self Servis Teknolojilerinin her bir servis işlevi kusursuzdur					
• Otelin Self Servis Teknolojilerinin işlevi ilginçtir					
• Self Servis Teknolojilerini kullandığım için iyi hissediyorum					
• Otelin Self Servis Teknolojilerinin ilginç ek işlevleri mevcuttur					
• Otelin Self Servis Teknolojileri bana gerekli tüm bilgileri sağlamaktadır					
• Otelin Self Servis Teknolojileri ile yaptığım işlemlerde kendimi güvende hissederim					
• Otelin Self Servis Teknolojilerini kullandığımda gizlilik politikası belirtilmektedir.					
• Self Servis Teknolojileri sağlayan oteller herkes tarafından bilinmektedir					
• Self Servis Teknolojileri sağlayan oteller iyi bir üne sahip olmaktadır					
• Otelin Self Servis Teknolojilerinin düzeni estetik açıdan çekicidir					
• Otelin Self Servis Teknolojileri güncel teknolojiyi kullanmaktadır					
• Self Servis Teknolojileri müşterilere uygun çalışma saatlerine sahiptir					

• Otelin Self Servis Teknolojilerine ulaşmak kolay ve rahattır					
• Otelin Self Servis Teknolojileri özel ihtiyaçlarımı anlamaktadır					
• Otelin Self Servis Teknolojileri benim için kişiselleştirilmiş özelliklere sahiptir					
• Genel olarak, otel tarafından sunulan Self Servis Teknolojilerinden memnunum					
• Otelin sunduğu Self Servis Teknolojileri beklentimi aşmaktadır					
• Otel tarafından sunulan Self Servis Teknolojileri benim ideal Self Servis Teknolojilerine yakındır					

Bölüm II - Demografik sorular:

1. Destinasyonu ziyaret etme amacınız nedir?

☐ Boş zaman aktiviteleri (ör: tatil, spor, eğlence vb.)

☐ İş (ör: toplantı,konferans vb.) ☐ Diğer

2. Seyahat ederken Self Servis Teknolojilerini kullanmanızın amaçları nelerdir?

☐ Self-check-in için ☐ Self-check-out için

☐ Bilgi arayışları amacıyla ☐ Sipariş için ☐ Diğer

3. Bir yıl içierisinde ne kadar sıklıkla seyahat ediyorsunuz?

☐ Bir kez ☐ İki kez ☐ Üç kez

☐ Dört kez ☐ Beş kez ve üzeri

4. Cinsiyetiniz nedir? ☐ Erkek ☐ Kadın ☐ Belirtmek istemiyorum

5. Kaç yaşındasınız? _____ (ör: 35)

6. Medeni durumunuz nedir?

☐ Bekar ☐ Evli ☐ Ayrı/ Dul

7. Eğitim seviyeniz nedir?

☐ Lise veya altı ☐ Ön lisans derecesi

☐ Lisans derecesi ☐ Yüksek lisans derecesi ☐ Doktora

8. Aşağıdakilerden hangisi mevcut mesleğinizi açıklamaktadır?

☐ Tam zamanlı çalışan ☐ Yarı zamanlı çalışan

☐ Serbest meslek ☐ İşsiz ☐ Öğrenci ☐ Emekli

9. Uyruğunuz nedir? _____ (ör: Amerika)

Değerli katılımcı,

Bu ankete zaman ayırdığınız için çok teşekkür ederiz. Bu araştırmanın sonucunu almak istiyorsanız lütfen e-posta adresinizi aşağıya yazın. Email: _____

Saygılarımla

Questionnaire – Russian

Уважаемый участник:

Я доктор наук факультета туризма Восточно-Средиземноморского университета. Я приглашаю вас принять участие в этом исследовании, заполнив этот опрос. Следующая анкета имеет только один критерий. Если у вас есть опыт использования технологий самообслуживания, таких как самостоятельная регистрация заезда и отъезда в отелях, продуктовых магазинах, авиакомпаниях и т. д. ,в прошлом году, то заполните эту анкету. Чтобы вся информация оставалась конфиденциальной, не указывайте свое имя. Участие строго добровольное, и вы можете отказаться от участия в любое время. Если вы хотите получить краткую копию этого исследования, пожалуйста, напишите свой адрес электронной почты.

Спасибо за ваше участие заранее.

Есть ли у вас опыт использования технологий самообслуживания за последние двенадцать месяцев?

☐ Да

☐ Нет

Часть I. Основные вопросы:

Пожалуйста, ответьте на следующие вопросы в зависимости от вашего уровня согласия со следующим утверждением; с полностью согласен с категорически не согласен, как показано ниже:

1) Полностью Не согласен 2) Не согласен 3) Нейтрально

4) Согласен 5) Полностью Согласен

Вопросов	1	2	3	4	5
• Я могу получить свои услуги с помощью технологий самообслуживания отеля в короткие сроки / быстро					
• Процесс обслуживания технологий самообслуживания отеля понятен					
• Использование в отеле технологий самообслуживания требует небольших усилий и прост в использовании					
• Я могу беспрепятственно выполнять свои услуги с помощью технологий самообслуживания отеля					
• Каждый элемент обслуживания / функция Технологии самообслуживания не содержит ошибок					

• Использование технологий самообслуживания отеля интересно					
• Мне хорошо, когда я могу использовать технологии самообслуживания					
• Технологии самообслуживания отеля имеют интересные дополнительные функции					
• Технологии самообслуживания отеля предоставляют мне всю необходимую информацию					
• Я чувствую себя в безопасности в своих сделках с технологиями самообслуживания отеля					
• Когда я использую технологии самообслуживания в отеле, устанавливается четкая политика конфиденциальности					
• Отель, который предоставляет технологии самообслуживания, хорошо известен					
• Отель, который предоставляет технологии самообслуживания, имеет хорошую репутацию					
• Компоновка технологий самообслуживания отеля эстетически привлекательна					
• В технологиях самообслуживания отеля, как представляется, используются самые современные технологии					
• Технологии самообслуживания имеют часы работы, удобные для клиентов					

• Легко и удобно добраться до технологий самообслуживания отеля					
• Технологии самообслуживания отеля понимают мои конкретные потребности					
• Технологии самообслуживания отеля имеют персонализированные функции для меня					
• Технологии самообслуживания отеля предоставляют обещанные услуги					
• Технологии самообслуживания отеля решают проблемы немедленно					
• Технологии самообслуживания отеля в первую очередь отвечают интересам туриста					
• Технологии самообслуживания отеля информативны					
• Технологии самообслуживания отеля оперативно обрабатывают запросы					
• В целом, я доволен технологиями самообслуживания, предлагаемыми отелем					
• Технологии самообслуживания, предлагаемые отелем, превосходят мои ожидания					
• Технологии самообслуживания, предлагаемые отелем, близки к моим идеальным типам технологий самообслуживания					

Часть II - Демографические вопросы:

1. Какова ваша цель посещения пункта назначения?

☐ Отдых (например, для отдыха, спорта, развлечений и т. Д.)

☐ Бизнес (например, для встреч, конференций и т. Д.) ☐ Другой

2. Каковы цели использования технологий самообслуживания во время путешествий?

☐ Для самостоятельной регистрации ☐ Для самостоятельной проверки

☐ Для поиска информации ☐ Для самостоятельного заказа

☐ Другой

3. Как часто вы путешествуете в год?

☐ Один раз ☐ Дважды ☐ Три раза

☐ Четыре раза ☐ пять или более раз

4. Какого Вы пола:

☐ Мужской ☐ Женский ☐ Предпочитаю не говорить

5. Сколько тебе лет: _____ лет (например, 35)

6. Каково ваше семейное положение?

☐ Не замужем (не женат) ☐ Замужем (женат)

☐ Разведен/ Вдовец/ Разлучен

7. Каков ваш образовательный уровень?

☐ Высшее образование или ниже ☐ Степень специалиста

☐ Степень бакалавра ☐ Степень магистра

☐ Степень доктора наук

8. Что, если следующее лучше всего описывает вашу текущую профессию?

☐ Работаю - полный рабочий день ☐ Работаю - Частичная занятость

☐ Частный предприниматель / Freelance ☐ Безработный

☐ Студент ☐ На пенсии

9. Откуда ты? _____ (например, американский)

Уважаемый участник,

Спасибо вам большое за ваше время. Если вы хотите получить результаты этого исследования, пожалуйста, напишите свой адрес электронной почты ниже. Ваша электронная почта: _____

С уважением

Questionnaire – German

Sehr geehrter Teilnehmer:

Ich bin Doktorand an der Fakultät für Tourismus an der Östliche Mittelmer Universität (EMU/DAÜ). Ich lade Sie ein, sich an dieser Forschung zu beteiligen, indem Sie den folgenden Fragebogen auffüllen. Der Fragebogen hat nur ein Kriterium. Wenn Sie im letzten Jahr Erfahrung mit Self-Service-Technologien wie Self-Check-in und Check-out in Hotels, Lebensmittelgeschäften, Fluggesellschaften usw. haben, füllen Sie bitte diesen Fragebogen aus. Um sicherzustellen, dass alle Informationen vertraulich bleiben, geben Sie bitte Ihren Namen nicht an. Die Teilnahme ist freiwillig und Sie können natürlich die Teilnahme jederzeit verweigern. Wenn Sie eine Zusammenfassung dieser Studie wünschen, schreiben Sie bitte Ihre E-Mail-Adresse.

Vielen Dank für Ihre Teilnahme im Voraus.

Haben Sie in den letzten zwölf Monaten Erfahrung mit Self-Service-Technologien gehabt?

☐ Ja

☐ Nein

Teil I - Hauptfragen:

Bitte beantworten Sie die folgenden Fragen auf der Grundlage Ihrer Übereinstimmung mit folgenden Erklärungen;

1) Trifft gar nicht zu 2) Trifft eher nicht zu 3) Weder noch

4) Trifft überwiegend zu 5) Trifft voll und ganz zu

Fragen	1	2	3	4	5
• Ich kann meine Dienstleistungen mit den Self-Service-Technologien des Hotels in kurzer Zeit/schnell bekommen					
• Der Serviceprozess der Self-Service-Technologien des Hotels ist klar					
• Die Nutzung der Self-Service-Technologien des Hotels erfordert wenig Aufwand und ist einfach zu bedienen					
• Ich kann meine Dienstleistungen mit den Self-Service-Technologien des Hotels reibungslos erledigen					
• Jeder Serviceartikel/jede Funktion der Self-Service-Technologien ist fehlerfrei					
• Der Betrieb der Self-Service-Technologien des Hotels ist interessant					

• Ich fühle mich gut darin, die Self-Service-Technologien nutzen zu können					
• Die Self-Service-Technologien des Hotels haben interessante Zusatzfunktionen					
• Die Self-Service-Technologien des Hotels versorgen mich mit allen notwendigen Informationen					
• Ich fühle mich sicher in meinen Transaktionen mit den Self-Service-Technologien des Hotels					
• Eine klare Datenschutzerklärung wird angegeben, wenn ich die Self-Service-Technologien des Hotels verwende					
• Das Hotel, das Self-Service-Technologien zur Verfügung stellt, ist bekannt					
• Das Hotel, das Self-Service Technologies bietet, hat einen guten Ruf					
• Das Layout der Self-Service-Technologien des Hotels ist ästhetisch ansprechend					
• Die Self-Service-Technologien des Hotels scheinen auf dem neuesten Stand der Technik zu sein					
• Self-Service Technologies bietet für Kunden eine günstige Betriebszeit					
• Die Self-Service-Technologien des Hotels sind bequem und bequem zu erreichen					
• Die Self-Service-Technologien des Hotels verstehen meine spezifischen Bedürfnisse					

• Die Self-Service-Technologien des Hotels verfügen über Funktionen, die für mich personalisiert sind					
• Die Self-Service-Technologien des Hotels liefern die versprochenen Dienstleistungen					
• Die Self-Service-Technologien des Hotels befassen sich mit den Problemen sofort					
• Die Self-Service-Technologien des Hotels sind in erster Line des Interesses des Touristen bedacht					
• Die Self-Service-Technologien des Hotels sind informativ					
• Die Self-Service Technologies des Hotels bearbeiten Anfragen umgehend					
• Insgesamt bin ich mit den Self-Service-Technologien des Hotels zufrieden					
• Die Self-Service-Technologien des Hotels übertreffen meine Erwartungen					
• Die Self-Service-Technologien des Hotels sind in der Nähe meiner idealen Arten von Self-Service-Technologien					

Teil II - Demografische Fragen:

1. Was ist der Zweck Ihres Besuchs hier?

☐ Freizeit (z. B. für Urlaub, Sport, Unterhaltung usw.)

☐ Geschäftlich (z. B. für Besprechungen, Konferenzen usw.) ☐ Andere

2. Was ist der Zweck der Verwendung von Self-Service-Technologien auf Reisen?

☐ Zum Selbsteinchecken ☐ Zum Selbstauschecken

☐ Um Informationen zu suchen ☐ Zur Selbstbestellung ☐ Andere

3. Wie oft reisen Sie in einem Jahr?

☐ Einmal ☐ Zweimal ☐ Drei Mal

☐ Vier Mal ☐ Fünfmal oder öfter

4. Geschlecht: ☐ Männlich ☐ Weiblich ☐ Mache lieber keine Angabe

5. Wie alt sind Sie: _____ Jahre alt (z. B. 35)

6. Wie ist Ihr Familienstand?

☐ Single ☐ Verheiratet ☐ Geschieden/ verwitwet/ getrennt

7. Was ist dein Bildungsniveau?

☐ Abitur oder niedriger ☐ Hochschulabschluss ☐ Bachelor Abschlus

☐ Master-Abschluss ☐ Phd. Grad

8. Welche der folgenden Aussagen beschreibt Ihren aktuellen Beruf am besten?

☐ Vollzeitbeschäftigt ☐ Teilzeit angestellt ☐ Arbeitslos

☐ Selbständig/ freiberuflich ☐ Schüler ☐ Im Ruhestand

9. Wo kommen Sie her? _____ (z. B. Amerikaner)

Lieber Teilnehmer/-in,

Vielen Dank für Ihre Zeit. Wenn Sie das Ergebnis dieser Forschung erhalten möchten, schreiben Sie bitte Ihre E-Mail-Adresse unten. Email: _____

Freundliche Grüße