



**Influence of IT Capabilities, Sustainability Practices, Service Quality and Top
Management Support on Organizational Performance in the UAE Hospitality
Industry**

Presented to

The Academic Faculty

By

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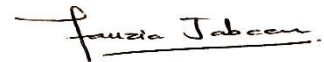
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Support on Organizational Performance in the UAE Hospitality Industry**

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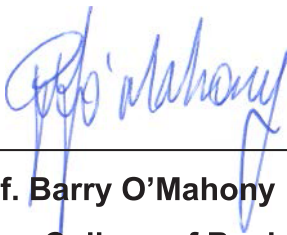
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Haseena Al Katheeri

ABSTRACT

In the last few decades, globalization and government pressure has made various firms increasingly consider the practice of sustainability for sustained competitive advantage. Also, the concept of sustainability has consistently been acknowledged as attracting considerable attention in the hospitality industry. However, not all sustainability activities can be implemented due to their conflict with high service quality standards and practical interests that may affect profit. Therefore, in a highly competitive environment, some leading hospitality companies have made countless efforts to modify their existing processes and systems to be more environmentally friendly and to incorporate sustainable business practices into their company culture and structure. Furthermore, delivering quality customer service with the practice of sustainability has emerged as a strategic imperative, one that is increasingly tied to a firm's information technology resources and capabilities. The rise of technology has been seen as a proliferation of the economy, one that integrates people, process and information technologies (IT) together. However, the IT capabilities that organizations should develop to dynamically manage sustainability portfolios are not well-understood.

This objective of this study is to investigate the impact of IT capabilities of the hospitality industry on organizational performance. It examines the impact of sustainability practices and service quality on the relationship

between IT capabilities and organizational performance in particular. In addition, the study examines the moderating effect of top management support.

A survey was conducted to collect data regarding the current status of IT capabilities, service quality and the sustainability practices among hospitality firms in the United Arab Emirates. A three-wave, time-lagged approach was employed with a sample of 507 hotels managers participated in the study using an online survey.

Structural equation modelling was used to test the proposed model. IT capabilities were discovered to have a direct and indirect impact on organizational performance. In particular, this study found that sustainability practices and service quality have an indirect impact on the relationship between IT capabilities and organizational performance. Furthermore, the influence of IT capabilities on organizational performance is moderated by top management support.

This study is useful to practitioners and policy makers in the hospitality industry who intend to improve their organizational performance. The hospitality business benefits from this study because it reveals the link between IT capabilities, sustainability practices, service quality, top management support, and organizational performance which are the most relevant factors to it. Furthermore, the results can support management and policy makers in hospitality firms by identifying the barriers and benefits of these factors to take better decisions. This study makes valuable contribution to the existing literature since there are limited studies on the benefits of IT capabilities and

sustainability practices in the hospitality industry in developing countries. The contribution of this study lies in the under-researched context by investigating the relationship between IT capabilities, sustainability practices, service quality, top management support, and organizational success in an under-researched area. In this essence, this is the first empirical study to examine the indirect effect of sustainability practices and service quality on the relationship between IT capabilities and organizational performance which contributes to the tourism and hospitality industries in the context of UAE.

Keywords: *Hospitality, Sustainability Practices, Triple Bottom Line, IT capabilities, Information Technology, Resource-Based View, Service Quality, Organizational Performance, Top Management Support, Developing Countries, United Arab Emirates*

List of Abbreviations

CFA	:	Confirmatory factor analysis
CFI	:	Comparative Fit Index
Df	:	degree of freedom
EFA	:	Exploratory factor analysis
GDP	:	Gross Domestic Product
GFI	:	Goodness-of-Fit Index
IS	:	Information systems
IT	:	Information technology
ITC	:	Information technology capabilities
OP	:	Organizational performance
RBV	:	Resource-Based View
RMSEA	:	Root Mean Square Error of Approximation
SP	:	Sustainability practices
SPSS	:	Statistical Package for Social Sciences
SQ	:	Service quality
TBL	:	Triple Bottom Line
TLI		Tucker–Lewis Index
TMS	:	Top management support
UAE	:	United Arab Emirates
UNEP	:	United Nations Environment Program
WCED	:	Sustainable Development Knowledge Platform

UNWTO : United Nation World Tourism Organization

WTTC : World Travel and Tourism Council

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CHAPTER 1: INTRODUCTION

This chapter sets out the context of this research study. The first section provides a general research background of the hospitality and tourism sector and the study variables, and then presents the problem statement. The next sections set out the research gap, research objectives and research questions. Finally, the chapter concludes by setting out the significance and contributions of this research and explaining the structure and process followed in the study.

1.1 General Background

In today's ever-changing world, every organization is confronted with growing complexity because of the increase in economic turbulence and globalization, and the development of information and communication technologies that facilitate the comparison of offerings by consumers (Koch & Cebula, 2002) which increases the number of competitors (Augustyn & Seakhoa-King, 2005). Various organizations are increasingly considering the practice of sustainability as the best option to leverage competitive strategies and practices (Machado et al., 2017). Hence, the concept of sustainability is now becoming the focus of world attention by all industries as an embedded and overarching feature of organizations' strategic planning (Schneider & Sunyaev, 2016). Back to 1972, the term "sustainability" was introduced for first time in the Union Nations Conference on Human Development, then it was appeared later in 1987 in the famous Brundtland Report (Bruntland, 1987). Sustainability

is defined as a new approach “that meets the needs of the present generation without compromising the ability of future generations to meet their needs” (Bruntland, 1987, p. 8).

The public’s awareness of the importance of sustainability has increased, and hospitality and tourism businesses have begun to take initiatives to show their commitment to sustainable development (Ayuso, 2006; Babu, Kaur, & Rajendran, 2018; Prud’homme & Raymond, 2016). It has been argued that the implementation of environmental strategies could be facilitated by the deployment of other resources and capabilities (Alberto Aragón-Correa & Sharma, 2003; Chan & Ma, 2017; Zampou & Pramadari, 2014). Therefore, companies need to exploit internal and external resources by analyzing and discovering opportunities that are overlooked by competitors (Akram, Goraya, Malik, & Aljarallah, 2018). One major type of these resources is information technology (IT), which has changed the way of managing information to result in successful performance. Investments in IT may be a strategic necessity for many businesses (Nwankpa & Datta, 2017) as statistics show that enterprises spent almost 352 billion US dollars on IT and related costs in 2017 alone and this was expected to increase by 83 percent in 2019 (Gartner, 2018). It is evident that IT investments will increase organizational productivity, reduce costs, and, at the same time, add value to the services and products offered to customers (Bilgihan, Okumus, Nusair, & Kwun, 2011). Nevertheless, investing in IT alone cannot have a positive impact on business profitability (Phama & Jordanb, 2009) because firms need the ability to use it wisely which is basically referred to as IT capability (Donkor, Donkor, & Kankam-Kwarteng, 2017).

1.1.2 Hospitality and Tourism Sector in the UAE

Hospitality is considered one of the fastest global rising sectors with nearly one third of the service industry considered part of this industry (AlBattat, Mat Som, & Helalat, 2014). Currently, the UAE boasts itself as a tourism-competitive destination by taking 29th place in the world and among Global Cooperation Council countries with 14.4 million international tourists in 2015 (TTCR, 2017) and a predicted 18.8 million tourists in 2022 ("UAE tourism sector to hit Dh237b ", 2014). Tourism plays a vital role in the growth of the UAE's economy, and its importance appears likely to continue in the years ahead (John, 2018). In 2016, the travel and tourism sector was responsible for AED 68.5 billion (USD 18.7 billion) of the UAEs Gross Domestic Product (GDP), which was 5.2 percent of the country's total GDP (TheUAE'sGovernmentPortal, 2019). The amount is expected to rise by an estimated 5.1 percent per annum from 2017-2027 to AED 116.1 billion (USD 31.6 billion), a total of 5.4 percent of the country's GDP, by 2027 (TheUAE'sGovernmentPortal, 2019). This has made the sector fiercely competitive, which has had implications on profitability. As a result, the UAE Government put efforts in promoting tourism industry to make it a unique destination for people to shop, start a business, and organize wide range of events and activities (Ahmad, Ahmad, & Papastathopoulos, 2019).

Businesses create new products, services and processes that add value to the marketplace, which influences their economic sustainability (Gundry, Kickul, Iakovleva, & Carsrud, 2014) whereby hospitality firms should follow innovation strategy by employing technology and improvements in services

quality to differentiate with competitors (Njoroge, Anderson, & Mbura, 2019). However, there are several obstacles hindering the hospitality industry to integrate sustainability into their business practices and strategies (Jones, Hillier, & Comfort, 2016; Melissen, Cavagnaro, Damen, & Düweke, 2016; Pasape, Anderson, & Lindi, 2015; Prud'homme & Raymond, 2016). For example, some businesses believe that the costs of investing in sustainability issues outweighs the benefits, in particular the immediate financial returns (Prud'homme & Raymond, 2016). Sustainability is also associated with risk and uncertain outcomes (Mullens, 2018). Another obstacle is the challenge to meet consumer expectations that are constantly evolving with regard to quality of service (Skogland & Siguaw, 2004), which have some conflicts with sustainability practices. Also, internal factors have a critical impact on sustainability competencies such as attitudes of top management support (Cabral & Chiappetta Jabbour, 2019; Park, Jeong Kim, & McCleary, 2014).

1.2 Problem Statement

Organizations started to comply with the practices and strategies of sustainability due to three main reasons. First of all, to solve problems emerging from complex systems such as poverty, environmental degradation or food insecurity (Howard & Lubbe, 2012), second, to commit with government plans and regulations (Fairfield, Harmon, & Behson, 2011; Shah & Arjoon, 2015), and third to satisfy customers' demand for environment-friendly products and services (Kassinis & Soteriou, 2015). As such, sustainability practices are key to a company's survival, a source of performance-related outcomes (Martinez-Conesa, Soto-Acosta, & Palacios-Manzano, 2017), and enrich reputation and

enhance company's image (Brockhaus, Fawcett, Fawcett, & Knemeyer, 2017). Thus, sustainability initiatives are of crucial importance for the future of corporations' economic system (Brockhaus et al., 2017). Yet, organizations still consider corporate sustainability as a significant challenge (He, Gallear, Ghobadian, & Ramanathan, 2019) as they have struggles in 1) establishing holistic, company-wide sustainability programs and 2) expanding sustainability efforts (Brockhaus, Kersten, & Knemeyer, 2013; Seuring, 2011).

The tourism and hospitality industries are inextricably expected to grow in the UAE as it is currently a globally booming business. Tourism is considered to be the fastest growing service sector in the world and has a bearing on the economic growth of a country (Osman & Sentosa, 2013). This industry has outperformed the manufacturing, retail, financial services and communications globally. The contribution of tourism and hospitality industry to the Gross Domestic Product (GDP) in most countries is quite significant. More than 10 percent of all new jobs created in the past few years have been from the tourism industry (Abu Alroub, Alsaleem, & Daoud, 2012). The World Travel and Tourism Council (WTTC) (2020) claims that 10.3 percent of the total GDP contribution in most countries is through tourism and the hospitality industry.

In the UAE, one of the focal areas of the government is tourism and hospitality, and the government has taken a very keen interest in developing it on a large scale. The most focused government initiative in this sector is to improve sustainability practices. Sustainable tourism, according to United Nation World Tourism Organization (UNWTO), is "Tourism that takes full account of its current and future economic, social and environmental impacts,

addressing the needs of visitors, the industry, the environment and host communities" (UNWTO, 2005). This sector has been responsible for making excessive use of natural resources, consuming a great amount of energy, and damaging the biophysical environment (Rodríguez-Díaz & Espino-Rodríguez, 2006). It is asserted that the tourism industry can introduce more unorthodox forms of tourism, such as ecotourism and sustainable strategies, to overcome the traditional concerns regarding natural resource management and recreational opportunities (Knowles, Macmillan, Palmer, Grabowski, & Hashimoto, 1999). Although people have more awareness of sustainability practices (Choi, Kim, Kim, & Agmapisarn, 2019), some individuals continue to involve in activities that may have negative effects on the environment at a local level and collectively at a national and global level (Kirk, 1995).

IT contributes to growth opportunities and firm performance to leverage firms' business by developing new products/services for and thereby enhance their strategic value (Ong & Chen, 2016). IT capability is a firm's ability to acquire, deploy, combine, and reconfigure IT resources to support business strategies and work processes (Govindaraju, Akbar, & Suryadi, 2018). There are several advantages for IT capabilities, such as increasing internal efficiency, reducing long-term costs, transforming key business processes and practices, integrating value chain, reducing unnecessary processes (Bilgihan et al., 2011) and leveraging sustainability practices, which is one of the important aspects today for sustaining competitive advantage over competitors and allowing a company to achieve superior performance (Correia, Carvalho, Azevedo, & Govindan, 2017). A number of studies have investigated the impact of IT

capabilities on a single aspect of sustainability, mostly related to the environmental aspect (e.g., Howard and Lubbe, 2012; van de Wetering, Mikalef, & Helms, 2017), while it is reasonable to understand the impact of IT capabilities in all dimensions of sustainability (Dao, Langella, & Carbo, 2011) by exploiting the efforts of research and development in companies to obtain long-term benefits from sustainability and mitigate the high risk of exploration (Michelino, Cammarano, Celone, & Caputo, 2019).

Firms also have concerns about maintaining their performance in the markets and, thus, enforce them to continuously predict the threats and opportunities (Nazir & Pinsonneault, 2012; Thorstad & Wolff, 2018). For instance, IT capabilities can help companies achieve better performance by understanding how IT applications are developed, implemented, and integrated with other areas and systems to develop dynamic capabilities (Bilgihan et al., 2011).

In the light of the above, the UAE seeks to improve its competitive position in the international tourism market. Essentially, hospitality firms are working hard to remain competitive by developing premier products and offering high quality services to meet or exceed visitor expectations (Wu & Ko, 2013) that are in line with the local and global sustainability strategies. The general business problem is that firms have long struggled to perceive the value of sustainability practices with the support of IT capabilities. The specific business problem is the lack to develop effective relationships between IT and sustainability practices to improve service quality and obtain positive returns in the hospitality sector.

1.3 Research Gaps

The concept of sustainability has become a high-profile issue in the hospitality business fields in the Gulf Cooperation Council countries in general and in the UAE in particular. Reisinger, Michael, and Hayes (2018) examined the effects of destination resources, infrastructure and support services, human resources, and business environment on the UAE tourism competitiveness. They found that these factors had the highest significant effect on the UAE's tourism competitiveness as perceived by tourists. Ferraris, Monge, and Mueller (2018) noted that hotel performance was influenced by the dynamic role of environmental orientation and eco-innovation practices while the impact of environmental supplier collaboration on eco-innovation practices and hotel performance was not supported. Michael, Reisinger, and Hayes (2019) determined tourism competitiveness of the emerging economy such as UAE that is emerged from destination resources, destination infrastructure and support services, and the business environment. It was claimed that environmental sustainability is becoming a commodity which is able to bring an innovation performance for UAE's tourism businesses. In making world class tourism in Saudi Arabia, promotion of tourism and hospitality expansion and an enabling environment, maintaining standards, professional ethics and best practices are very necessary (Ali, 2018). In terms of sustainability, as one of the governance enablers in the Arabian Gulf, it is necessary to make more efforts in strategically implementing prudent governance solutions in order to future proof Arabian Gulf business (Pillai & Al-Malkawi, 2018). Arguably, an environmental aspect is less concerned by firms than social and economic drivers in many developed

countries, as reported in the findings of an exploratory study of Mouzughi, Bryde, and Al-Shaer (2014).

Sustainability brings new challenges and more complexity for the companies and their SPs. The core tenet of sustainability practices was articulated from the triple bottom line that requires three unique interrelated dimensions: social, financial and environmental performance (Birkel, Veile, Müller, Hartmann, & Voigt, 2019; Brockhaus et al., 2017; Calero, García-Rodríguez De Guzmán, Moraga, & García, 2019; Machado et al., 2017). Despite previous studies which address organizations' sustainability practices, there is a lack of consensus among the works that simultaneously study sustainability by considering its three dimensions together with IT capabilities, which highlights the need to explore this research area. For example, Aktin and Gergin (2016) only proposed a conceptual framework to study about the linkage between the role IT capabilities and corporate sustainability. Similarly, Pye and Rai (2014) proposed a research model of the association between IT capabilities and environmental sustainability using firm-level data, while Debnath (2018) and Ghobakhloo et al. (2018) investigated IT capabilities on one aspect of sustainability, which is environmental development. Likewise, the study of Calero et al. (2019) only emphasized on environmental development and found that sustainability policies for the studied companies show the efforts of these companies to contribute to solving common environmental problems. Other authors who concentrate on social and economic values together with IT capabilities in an organization are van de Wetering et al. (2017). Also, Fuisz-Kehrbach (2015). Aktin and Gergin (2016), Machado et al. (2017), and Yang

and Ha-Brookshire (2019) recommended to continue examining sustainability in order to obtain a more comprehensive picture from their preliminary findings.

Despite the growing importance of IT capabilities concept, there has been a limited understanding of the dimensional role of IT capabilities toward organizational performance. In the case study of Quaadgras, Weill, and Ross (2014), firms often struggled to improve organizational performance and it was only apparent in firms that ‘worked smarter’ by empowering decision-makers with information and clear business rules, as well as by using business analytics to create and revise their business rules. However, they found that only six firms were demonstrating significant benefits from enterprise-wide information capabilities and accelerating the benefits from IT-based business initiatives. Researchers conceded that technical, human or other resources, by themselves, do not pose a source of excellent performance for an organization but are rather used to improve firm performance (Melville, Kraemer, & Gurbaxani, 2004), while Jurisch, Palka, Wolf, and Krcmar (2014) posit that organizations should possess capabilities, including IT as one dimension, necessary for executing the changed business process. In the current era, organizations are rarely able to annually evaluate the relationship between IT capabilities and their performance (Akram et al., 2018). It is not surprising that IT is unable to provide a good level of performance when firms duplicate a particular adoptive technology; thus, how IT as a resource can create a superior performance for a firm remains an unresolved issue (Wu, Yeniyurt, Kim, & Cavusgil, 2006). However, it appears that integrating IT capabilities within Russian firms can lead to cost reduction, which impacts profitability (Davis-Sramek, Krotov, & Germain, 2016) Soltany,

Rostamzadeh, and Skrickij (2018) provide necessary guidelines and knowledge about how firms can stick on their IT capabilities in order to achieve organizational performance. Fink (2011) recommended to further investigate on whether or not IT constitutes a source of competitive advantage to advance performance. As a result, the underlying apparatus through which IT capabilities impact organizational performance remains blurred as many studies call for conducting further investigation.

Prior researches (e.g., Ashrafi & Mueller, 2015; Bi, Davison, & Smyrnios, 2017; Choy et al., 2014) examined the important concepts and relationships related to the effective utilization of IT. Technology becomes more powerful and has significant contributions to firms' productivity and profitability, as several studies have been conducted on various types of IT capabilities in various disciplines, such as banks (Callaway & Jagani, 2015; Panda & Rath, 2017), small and medium enterprises (Lyver & Ta-Jung, 2018; Raymond, Sylvestre, Fabi, & St-Pierre, 2018; Rehman, Nor, Taha, & Mahmood, 2018), manufacturing (Martinho, Gomes, & Yasin, 2016), logistics companies (Choy et al., 2014), health industry (Khatri, 2006; Mandal, 2018) and multiple industries (Fink & Neumann, 2007; Nwankpa & Datta, 2017; Quaadgras et al., 2014). There is, however, a lack of agreement within the literature about the exact dimensions of IT capabilities that constitute organizational performance within the hospitality industry. For example, some studies investigated only competitive advantage (e.g. Callaway & Jagani, 2015; Lyver & Ta-Jung, 2018; Ong & Chen, 2013), while Ramón-Jerónimo and Herrero (2017) offered a procedure to analyze firms' heterogeneity with respect

of capabilities based on data collected from hotels and it was discovered that firms have discrepancies in which capabilities help to be more efficient in the market. Furthermore, Bilgihan et al. (2011) proposed only a conceptual model to identify IT capabilities as one of the implementation phases of IT applications that can lead to enhance the performance through low cost, added value, speed, agility, and customer service. Another conceptual model was developed by Khatri (2006) to explore how IT capabilities can improve an organization's performance by employing technical and managerial skills. It was suggested that IT capabilities include five dimensions: professionally competent and enlightened top management, elevated status of IT, trust between IT managers and line managers, IT human resources and IT infrastructure. Nevertheless, it was suggested to investigate other factors along with IT capabilities in other regions, different industries or multi-industry contexts as this is an important avenue for more generalizable results (Lyver & Ta-Jung, 2018; Ramón-Jerónimo & Herrero, 2017; Rehman et al., 2018). Meanwhile other studies have been conducted using in-depth qualitative analysis extracted from secondary data only (e.g., Cao, Duan, Cadden, & Minocha, 2016; Goh, Prakash, & Yeo, 2007; Govindaraju et al., 2018).

Taken together, the importance of IT capabilities and the complex coordination role of dynamic capabilities with a viable relationship with organizational performance require further investigation. Also, the future role of IT capabilities in which firms might need corporate sustainability to contribute to firm's performance has been explored in limited way. Also, there is a lack of some important variables and relationships noted, either related to

IT capabilities, sustainability practices or/and service quality aspects (Dai, Mao, Zhao, & Mattila, 2015). As such, further empirical investigation, which incorporates and integrates much of the identified relevant variables for improving organizational performance to consider the nature of information and business variables, is required.

1.4 Research Objectives

The objective of this study is to examine the role of IT capabilities on sustainability practices dimensions (environmental, social, and economic) and service quality to achieve organizational performance across hospitality organizations in the UAE. To search for these answers, a theoretical framework is developed involving a survey methodology and a non-experimental longitudinal design to determine quantitatively the relationships between the constructs of IT capabilities, sustainability practices, service quality, and organizational performance represented by top management support.

The study shall particularly highlight the role of IT capabilities as a core component for achieving the vision of sustainability and improve the service quality to improve organizational performance. Also, the role of top management support is examined between the IT capabilities, service quality and organizational performance.

The main objectives and questions of this research, along with the hypotheses, are provided in Table 1.1.

Table 1.1 Research questions, objectives and hypotheses

Research Question	Research Objective	Research Hypotheses
RQ1: To what extent do IT capabilities affect the sustainability practices, service quality and organizational performance in the UAE hospitality sector?	RO1: To investigate the relationship between the IT capabilities and sustainability practices, service quality and the organizational performance in the context of the hospitality industry	<i>H1: IT capabilities have a positive relationship with sustainability practices.</i> <i>H2: IT capabilities have a positive relationship with organizational performance</i> <i>H3: Sustainability practices have a positive with service quality</i> <i>H4: Service quality has a positive relationship with organizational performance</i>
What is the impact of sustainability practices and service quality on the association between IT capabilities and	To examine the role of sustainability practices and service quality to achieve organizational performance in UAE hospitality sector by	<i>H5: Sustainability practices is mediating the correlation between IT capabilities and organizational performance</i>

organizational performance in the UAE hospitality sector?	improving the IT capabilities	<i>H6: Service quality is mediating the correlation between IT capabilities and organizational performance</i> <i>H7: Sustainability practices and service quality are sequentially mediating the correlation between IT capabilities and organizational performance</i>
How high or low levels of top management support in the UAE hospitality sector influence the IT capabilities, service quality and organizational performance?	To examine the whether the relationship between IT capabilities and organizational performance is moderated by top management support in the UAE hospitality sector. To examine whether	<i>H8: Top management support is moderating the relationship between IT capabilities and organizational performance, with the relationship being stronger top management support is at a high level</i> <i>H9: Top management</i>

	the relationship between service quality and organizational performance is moderated by top management support in the UAE hospitality sector.	<i>support is moderating the relationship between service quality and organizational performance, with the relationship being stronger when top management support is at a high level</i>
	To examine the mediating effect of top management support of service quality to moderate between IT capabilities and organizational performance in the UAE hospitality sector.	<i>H10: Top management support mediates the moderating effect of service quality on the relationship between IT capabilities and organizational performance, with the mediating effect being stronger when TMS is at a high level</i>

1.5 Significance of the Study

In today's ever-changing world where there is cut-throat competition and requirement for improving the quality of service to gain customers' loyalty, it is imperative to consider other factors that impact organizational performance. The concept of sustainability has posed various challenges in the business (Asadi et al., 2020; Hall, Daneke, & Lenox, 2010). There is also a growing pressure from governments and international organizations' stakeholders on commitment with sustainability practices. Unlike past research that focused on only one element of the sustainability principle (Howard & Lubbe, 2012; van de Wetering et al., 2017), this study focused on three elements; social, economic and environment with the connection to IT capabilities. Another great challenge facing organizational managers today is investing in the correct technology that can maximize the advantage from this investment. Since IT becomes more powerful, as many studies have been conducted to examine the impact of IT capabilities on sustainability practices (Ajamieh, Benitez, Braojos, & Gelhard, 2016; Michelino et al., 2019; Saunila, Nasiri, Ukko, & Rantala, 2019; Vetráková, Hitka, Potkány, Lorincová, & Smerek, 2018), it is essential to gauge the effectiveness of adopting IT capabilities on sustainability practices in the hospitality sector. For instance, IT capabilities could contribute to the firm performance across multiple industries by effectively responding to the increasing importance of incorporating environmental sustainability practices (Ajamieh et al., 2016). A systematic review conducted by Dhir et al. (2020) indicates that practitioners and staff in hospitality institutions have an increased interest toward implementation of Green IT initiatives and sustainability

practices. Another study developed by Garrett Jr and Neubaum (2013) argued that information technology and communication practices have given highest importance to improve quality services within the organization by managers. As such, the IT capabilities play a vital role in order to facilitate sustainability practices and achieve optimum organization performance (Akram et al., 2018).

This study contributes to the literature by empirically evaluating the relationships between the IT capabilities, sustainability practices, service quality, and organizational performance in a hospitality industry setting. This study also contributes specifically to the growing body of research on resource-based view theory by validating its applicability to the IT capabilities and sustainability relationship in a hospitality industry setting. In addition, this study contributes to service quality alignment research by further developing a theoretically sound framework for the better understanding of the service quality relationship and its impact on organizational performance.

1.6 Contributions of the Study

1.6.1 Theoretical Contribution

This study offers a key theoretical contribution, which is explaining organizational performance for hospitality firms pursuing sustainability practices by developing a theoretically comprehensive model consisting of IT capabilities as independent variable and sustainability practices and service quality as mediators with organizational performance as a dependent variable to bridge the gaps between them. It also contributes through extending researchers' knowledge of how IT capabilities and service quality align with

organizational performance to leverage from top management role. The finding of this study also drives several empirical contributions. Data are collected from different aspects from senior managers in the hotel industry. Overall, the findings of this study contribute to the literature in the domain of the hospitality and tourism sector, which have quite distinct settings. It specifically provides categorization research conclusions about organizational performance implications, which are critical in this industry.

Taken together, the importance of IT capabilities and the complex coordination role of sustainability practices with a viable relationship with service quality require more investigation. Therefore, the correlation between IT capabilities and sustainability practices in which to contribute to organizational performance is explored in this study. Also, the important variables of IT capabilities are identified in relation to existing literature and investigated. This incorporates and integrates many of the identified relevant variables for improving organizational performance to consider the nature of sustainability and service quality elements.

1.6.2 Practical Contribution

Sustainability is destined to be a future concern, and global changes increasingly are driving for strategies and innovative ideas toward this recognition. The importance of sustainability within the hospitality industry is recognized, but a struggle remains on how sustainability is to be achieved (Font & Lynes, 2018). This study focuses on three contemporary components of sustainability practices in business sustainability research, namely,

environmental, social and economic. The study offers an assessment of sustainability practices and organizational performance, and how IT capabilities influence the quality of customer service.

The concept of sustainability within the hospitality industry is broad and cannot be directly measured as the leading players claim to be pursuing many environmental, social and economic initiatives; however, the is truth they are adopting a weak approach in sustainability practices (Jones et al., 2016). Thus, this study shall contribute by suggesting practical implications to managers/CEOs and policy makers which help them in being aware of the possibility of improving firm performance by identifying the business environment in a better way wherein the investments in IT capabilities and sustainability activities tend to be most observable, through informed decision-making by the utilization and development of IT resources.

The study also sheds light on the role of top management in the link between sustainability practices and organizational performance. This study is significant because it examines organizational performance in the hospitality industry, illustrating a better and deeper understanding to achieve optimal performance for the hospitality sector.

1.7 Definitions of Key Terms

1.7.1 Environmental Sustainability Practices

This is the commitment ability of the organization to use energy and other natural resources by following pollution prevention and control practices; recyclable methods and prodcuts/services with zero ecological impact; and non-

polluting and non-toxic input materials (Foerstl, Meinlschmidt, & Busse, 2018). Organizations should ensure safety and health of workers and other stakeholders and should also have a firm commitment toward their customers and the communities for the same (Sulphey & Alkahtani, 2017).

1.7.2 Social Sustainability Practices

Social sustainability means that organizations need to provide equitable opportunities, encourage diversity and participate in productivity improvements for all stakeholders, internally and externally (Cruz & Wakolbinger, 2008; Elkington, 1994) to fully participate in all activities, benefits and the process of decision-making. They should assign adequate value to capital (both human and natural) and involve in all round productivity improvements. This will enhance social security and social reputation (Sulphey & Alkahtani, 2017).

1.7.3 Economic Sustainability Practices

The economic component involves the ability to operate with fully internalize its production or/and manufacturing costs while increasing revenue generation from improved stakeholder relations (Cruz & Wakolbinger, 2008). This can be achieved through prudent financial and risk management planning (Sulphey & Alkahtani, 2017).

1.7.4 IT Capabilities

IT capabilities concern how an organization can deploy and leverage chosen valued resources to sustain business competitiveness (Fink & Neumann, 2007) and increase organizational performance (Liang, Saraf, Hu, & Xue,

2007);it is the output of integrating the organization's core resources (Callaway & Jagani, 2015).

1.7.5 Service Quality

Service quality is the ability of an organization to develop existing services/products or/and create new services/products to obtain a significant influence on customer satisfaction and then loyalty (Tang, 2016).

1.7.6 Top Management Support

This refers to the degree to which senior management recognizes the relevance of the information systems function and the amount to which senior management participate in information systems activities (Petter, DeLone, & McLean, 2013).

1.8 The Structure of the Dissertation

This dissertation contains seven chapters; of which this is the first. The remaining chapters cover:

1.8.1 Chapter 2: Literature review. Chapter 2 presents the literature review on the relevant issues of this study, including IT capabilities, sustainability practices, service quality, top management support and organizational performance. It moves on to an extensive literature review of the definition of factors affecting service quality and organizational performance from technology and sustainability aspects. It reviews and comments on several studies examining factors maximizing knowledge management benefits. The research model and the hypotheses development are described. This chapter

explores prominent theories about sustainability and IT capabilities and outlines previous studies and findings and the theoretical background of this study. At the end of each section on the research constructs, a hypothesis is proposed. The chapter ends by proposing a research framework and hypotheses, developed from previous literature and theories, which will enable the study to meet its objectives.

1.8.2. Chapter 3: Research methodology. This chapter sets out the operationalization of variables, justifies the research methodologies and selection of data sources, and discusses sampling procedures and data collection methods. It explains the questionnaire structure, the processes for collecting and validating data and the analysis methods.

1.8.3. Chapter 4: Results and Findings. The findings of the proposed model are shown in this chapter.

1.10.4. Chapter 5: Discussion. The findings are discussed in detail in this chapter. The findings are highlighted again to be connected with previous studies.

1.8.5 Chapter 6: Conclusion. This chapter highlights and explains the study's scientific contributions and limitations, as well as making recommendations for future research.

1.9 Conclusion

The purpose of this study is to provide specific information about the relationships between IT capabilities, sustainability practices, service quality and organizational performance in the hospitality industry. All industry

organizations need to deploy sustainability practices into their core business strategy while pursuing continuing growth, which makes a range of demands on environmental resources. This research also adds at the confluence of IT and organizational research by exploring and determining the sustainability factors that affect organizational performance in the hospitality sector as well as raising awareness of the importance of sustainability practices in the level hospitality management levels. It should assist in increasing the priority given to hotel resources and capabilities, as well as ensuring that managers and staff have a variety of tactics to take advantage of this potential. Top management support has a critical role to effectively use an organization's capabilities taking into consideration the impact of these capabilities on the quality of service. This quantitative correlational design seeks to clarify the relationship between these key variables and determine if sustainability practices and service quality mediate the relationship between IT capabilities and organizational performance in the hospitality industry. By determining the strength and directionality of these relationships, we are better able to serve diverse managers within the hospitality and tourism system and inform policies and procedures for more effective use of IT and sustainability in the hospitality sector. Thus, the literature review is developed in Chapter 2.

CHAPTER 2: LITRATURE REVIEW

The key concepts and literature connected with the main components of the framework that developed for this study basis are discussed in this chapter. It examines leading theories on the underlying components of sustainability practices, namely environmental, social, and economic, all of which have a significant effect on organizational performance. It also investigates the theories related to IT capabilities and the concept of service quality. This chapter critiques the literature on these problems to determine relationships between potential study variables. It contains the development of hypotheses for this study to study the consequences of IT capabilities and sustainability practices that are suggested as two important predictors for an organization's performance. It also suggests that service quality and top management support are means to impact the relationships between the antecedents and organizational performance.

2.1 Theoretical Background

This section introduces the models and theories that have been commonly applied to investigate various issues of IT capabilities and sustainability. Altogether, we identify three theories: dynamic capability, resource-based view theory, and contingency theory. Table 2.1 reveals a summary of our findings. We review them as follows: prior researches suggest that organizational performance in the hospitality and tourism industry is strongly associated with IT capabilities (Ferraris et al., 2018) as well as

sustainability practices (Cvelbar & Dwyer, 2013). In this respect, different theoretical perspectives are utilized to explain these relationships. Table 2.1 explores the previous studies which identified the various theories that investigated about IT capabilities and sustainability practices.

Table 2.1 Summary of theories

Social theory	Proposed by	Key tents of the theory	Theory adopted/adapted by
Dynamic capabilities theory	Teece, Pisano, and Shuen (1997)	The evolution of IT capabilities in depth and easily explaining the formation and evolution of IT capabilities in the ever-changing business environment	Jacks, Palvia, Schilhavy, and Wang (2011); Mandal (2018)
Resource based theory	Barney (1991)	The resource-based view of the firm (RBV) argues that resources are the source of firms' competitive advantage. A powerful explanation of the relationship between various organizational capabilities and their impact on organizational performance.	Callaway and Jagani (2015); Cao et al. (2016); Fink (2011); Khatri (2006); Lyver and Ta-Jung (2018); Phama and Jordanb (2009); Raymond et al. (2018)
Contingency theory	Fiedler (1967)	The configurational approach is the notion of	Cao et al. (2016); Fink

		equifinality, generally defined as the state of achieving a specific outcome through different configuration types.	(2011); Raymond et al. (2018)
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2.1.1 Dynamic capabilities theory

Dynamic capability is defined as the organization's ability to adapt to changing market conditions by making necessary adjustments to its internal and external assets (Teece et al., 1997). It is one of the most widely used research methods since it eliminates the shortcoming of static theories of strategy, which neglect to clarify the component on how organizations can gain more esteem or obtain an advantage in a volatile and vulnerable climate (Teece et al., 1997). Dynamic capability is related to carrying out essential operations upon their resources and capabilities. Specifically, the model of dynamic capability makes companies able to search and select successful resources or competencies. It has the ability to extend and modify these resources to new forms. It also exploits the resources to adapt to environmental changes (Maijanen, 2020). There are two main viewpoints to study sustainability with support of dynamic capability. The first is that the business environment of corporate sustainability is referred to as a kind of dynamic capability. Among this view, Cha, Newman, and Winch (2015) claim that, since human and natural systems are full of inherent complexity and uncertainty and human society is evolving with inherent innovation, corporate sustainability is related to the treatment of dynamic capability. Aragón-Correa and Sharma (2003) also argue that a proactive

environmental strategy of sustainability can be treated as a dynamic capability because it requires having to deal with capabilities such as stakeholder integration, high order learning, shared vision, and continuous improvement (Daellenbach, Sharma, & Vredenburg, 1998; Hart, 1995). The second viewpoint is that dynamic capability can be treated as an antecedent of corporate sustainability. Vollenbroek (2002) remarks that innovation and organizational learning – which can be treated as two important dynamic capabilities – are essentials to the exploration and development of new possibilities for corporate sustainability. Marcus and Anderson (2006) further claim that the dynamic capability of corporate sustainability includes the search for new ideas and methods, the comparison of company practices to the best in the industry, the evaluation of practices in other industries, and experiments that could lead to a social sustainability. The major limitation of dynamic capability in corporate sustainability is that most researches are mainly qualitative studies (Aragón-Correa & Sharma, 2003). There is a lack of quantified research in applying dynamic capability on corporate sustainability. Furthermore, many researches which have conducted their studies based on other kinds of dynamic capability (e.g., collaboration, market responsiveness, and organizational learning) are considered as hasty reports.

2.1.2 Resource-based view (RBV)

The resource-based view (RBV) is a critical theory for explaining competitive progress for any organization (Madhani, 2010; Penrose & Penrose, 2009). In RBV, businesses may differentiate themselves by acquiring or creating resources that are precious, uncommon, imperfect, unique, and non-

replaceable (Amit & Schoemaker, 1993; Barney, 1991; Wernerfelt, 1984). RBV is comprised of organizational assets, capabilities, processes, characteristics, information, and knowledge (Barney, 1991). The majority of environmental studies focus on the application of organizational skills. The term "organizational capabilities" refers to a company's competences and/or skills that enable and sustain outstanding performance (Darnall & Edwards Jr, 2006; Ethiraj, Kale, Krishnan, & Singh, 2005; Russo & Fouts, 1997). Hart (1995) highlights the critical importance of organizational capacities in enabling businesses to engage in environmental initiatives. Particularly, good management of organizational capacities enables the development of a set of proactive environmental strategies that go beyond compliance with environmental rules to achieve both high organizational performance and compliance with environmental standards (Aragón-Correa, 1998; Hart & Ahuja, 1996; Porter & van der Linde, 1995). According to Russo and Fouts (1997), social sustainability may potentially be a source of favorable performance results. According to Bansal (2005), developing a capital management system based on organizational skills has a beneficial effect on a company's sociality. While recent research has tended to use RBV to simulate business sustainability, there are significant drawbacks. One of these drawbacks related to these studies is that they are mostly focused on independent elements of business sustainability (e.g., social or environment). Second, RBV research has focused only on the influence of organizational skills on corporate sustainability; their interdisciplinary studies (e.g., corporate governance and information systems) have been overlooked and thus merit more examination.

Information Systems researchers use the resource-based view (RBV) theory to relate the value of IT contributions to organizational performance (Tirgari, 2012) and the latter depends on the composition and use of organizational resources and capabilities (Ray, Muhanna, & Barney, 2005). The RBV states that a firm develops competitive advantage by not only acquiring but also developing, combining, and effectively deploying its physical, human, and organizational resources in ways that add unique value and are difficult for competitors to imitate (Barney, 1991). This theory has become one of the important and cited theories in management theory history and for understating organizations (Kraaijenbrink, Spender, & Groen, 2010) to perform particular value-added tasks or activities (Hart, 1995). Also, organizations are heterogeneous in their resources, so, even if those organizations operate in the same industry, this heterogeneity can explain differences between competitiveness, sustainability and performance (Ketokivi & Schroeder, 2004). The resource-based-view differentiates resources and capabilities. Resources consist of assets and processes such as physical and financial assets, inputs of the production process, employees' skills, and organizational (social) processes (Hart, 1995). Capabilities are defined as the capacities of a bundle of resources being brought together.

This study focuses on the role of different types of IT capabilities (IT infrastructure and human capabilities) in enabling firms to develop superior performance; the role of this relationship was examined by studying the integration of IT capabilities with quality service and sustainability capabilities for the reasons which are discussed here and will be elaborated in the remaining

sections of the study.

It is argued that resource-based theory can provide the appropriate theoretical lens to examine how companies' internal factors can make the difference and be a source of competitive advantage (Barney, 1991; Mata et al., 1995; Ross et al., 1996) and thus attain high performance. This complementarity of resources is a cornerstone of the resource-based view (RBV) of the firm and has been offered as an explanation of how information technology (IT) has largely overcome its paradoxical nature and is contributing to business value (Bhatt & Grover, 2005; Clemons & Row, 1991). For that reason, the RBV has been significantly dominant in the management information systems literature for many years and remains an important element in IT research. Very recent studies have employed this theoretical framework to analyze factors affecting IT capabilities and CA (e.g., Perrigot & Pénard, 2013; Soto-Acosta Soto-Acosta, Colomo-Palacios, & Popa, 2014; Wang, Wang, & Feng, 2012). The model in Figure 2-1 explains RBV and emphasizes its key points (Barney, 1991).

Over the last decade, geographical growth has become one of the most significant developments because of IT's importance to organizations. It has been widely accepted that IT creates value when it is combined with other organizational factors in a synergistic way. IS research has examined how IT resources and capabilities contribute to a firm's performance and how they impact competitive advantage. IT capabilities are defined as the ability of organizations to integrate and leverage valued IT-related resources or assets.

2.1.3 Contingency theory

According to contingency theory, organizational success is determined by the degree to which internal organizational design factors are properly aligned with external context variables (Lawrence & Lorsch, 1967; Thompson, Kopelman, & Schriesheim, 1992). Businesses must develop several levels of successful strategies that align with their organizational resources in order to capitalize on business opportunities while also mitigating dangers in the broader business environment (Andrews, 1998; Hofer & Schendel, 1978). Additionally, it is advised that businesses take the appropriate steps in controlling their external environment in order to boost their outstanding performance.

Recent scholarship has tended to examine corporate sustainability via the prism of contingency theory (e.g., Aragon-Correa & Sharma, 2003; Rueda-Manzanares et al., 2008), according to which corporate sustainability research should not be limited to the internal mechanisms of a corporation's operations processes, but should also include the external business environment (Rueda-Manzanares, Aragón-Correa, & Sharma, 2008). In such cases, the extent to which a corporation should engage in sustainability programs is highly dependent on the influences of external factors affecting their business environment. The determinants of the business environment may require consideration of components such as (1) hostility (a hostile business environment conducive to sustained growth), (2) dynamism (environmental turbulence and instability), and (3) complexity (number of factors affecting the business environment) (Dess & Beard, 1984). Additionally, previous research has concluded that the effectiveness of businesses that practice corporate

sustainability is contingent upon managerial factors such as (1) market dynamism or turbulence (Rueda-Manzanares et al., 2008), (2) environmental uncertainty (Miller & Shamsie, 1999), and (3) regulatory and public policy change (Aragón-Correa & Sharma, 2003). While numerous studies have established the critical role of contingency theory in business sustainability, numerous researchers have also identified its shortcomings, necessitating further research. To begin, external environmental factors do not have to be limited to the three hostile characteristics - hostility, dynamism, and complexity - and more research should be conducted to uncover additional aspects that may affect their business environment (Rueda-Manzanares et al., 2008). Second, it was asserted that both external and internal factors affecting company environments contributed significantly to corporate sustainability success; yet, there is a dearth of research examining their interplay (Aragon-Correa & Sharma, 2003). Thirdly, earlier research on business sustainability has mostly ignored developing countries (such as Western Europe and North America) (Sharma et al., 2007).

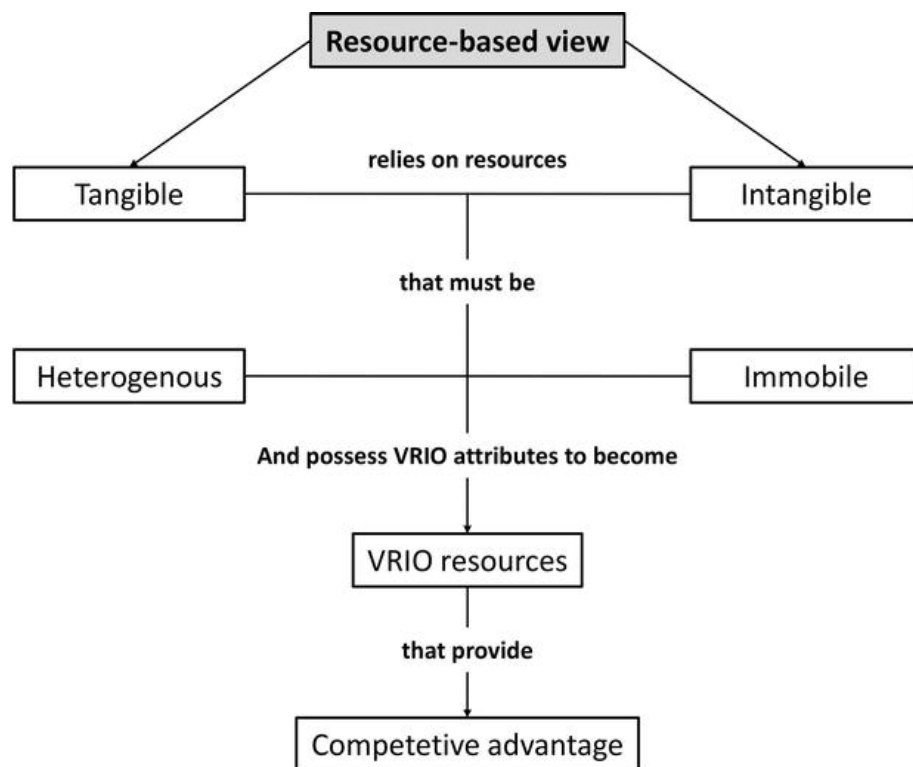


Figure 2.1: RBV model developed by Barney (1991)

A number of researchers have used resource-based view (RBV) theory to study how IT assets relate to organizational strategy and performance (Barney, 1986, 2001; Wade & Hulland, 2004). Comparing the resource-based view with a contingency-based perspective, Oh and Pinsonneault (2007) found that the resource-based perspective has a stronger predictive ability when looking at IT's impact on organization revenue and profitability. The RBV of the firm asserts that resources include all assets, capabilities, competencies, organizational processes, firm attributes, information, knowledge, and so forth. These resources are controlled by a firm and enable the firm to conceive and implement strategies that are designed to improve its efficiency and effectiveness, which, in turn, improves financial performance (Barney, 2007). In order for a resource to have the potential to increase performance, it must

have four attributes. It must be valuable; in that it can be used to exploit opportunities and/or neutralize threats in a firm's environment. It must be rare, and thus difficult for a firm's current and potential competitors to obtain. It must be imperfectly imitable, and there cannot be strategically equivalent substitutes that are valuable and neither rare nor imperfectly imitable. The firm must have organizational policies and procedures to fully exploit its valuable, rare, and costly-to-imitate resources and capabilities. This is referred to as the valuable, rare, inimitable, and organization (VRIO) framework. If a firm has a sustainable competitive advantage, then its performance improves (Barney, 2007). Organizational IT capabilities, which include organization-specific routines, processes, skills, and resources (Harrison, Hitt, & Hoskisson, 2001), are necessary to achieve outsourcing objectives. IT capabilities are more than specific sets of sophisticated technological functionalities (Levina & Ros, 2003; Melville, Kraemer, & Gurbaxani, 2004). These capabilities are used for managing and leveraging the technologies of the enterprise to sustain and create competitive advantage. Therefore, the IT capabilities of the organization should be considered from the onset of the establishment to ensure effective management. Thus, the IT capabilities of both parties play critical roles in the achievement of predefined organization objectives.

2.2 Hypotheses Development

2.2.1 IT Capabilities Factors

The important concepts and relationships were examined in prior researches related to the effective utilization of IT (Ashrafi & Mueller, 2015; Bi

et al., 2017; Choy et al., 2014). IT becomes more powerful and has significant contributions to firms' productivity and profitability, as several studies have been conducted in various types of IT capabilities in various disciplines, such as banks (Callaway & Jagani, 2015; Panda & Rath, 2017), small and medium enterprises (Lyver & Ta-Jung, 2018; Raymond et al., 2018; Rehman et al., 2018), manufacturing (Martinho et al., 2016), logistics companies (Choy et al., 2014), health industry (Khatri, 2006; Mandal, 2018) and multiple industries (Fink & Neumann, 2007; Nwankpa & Datta, 2017; Quaadgras et al., 2014). There is, however, a lack of agreement within the literature about the exact dimensions of IT capabilities that constitutes organizational performance (Callaway & Jagani, 2015; Mandal, 2018; Martinho et al., 2016; Nwankpa & Datta, 2017; Ong & Chen, 2013; Ong & Po-Yen, 2014; Phama & Jordanb, 2009; Soltany et al., 2018). For example, Ong and Po-Yen (2014) recommended to study the impact of IT capabilities' components, including IT infrastructure, IT technical and managerial knowledge, and IT integration, while Phama and Jordanb (2009) found that only IT human resources and IT infrastructure have contributions to business performance. Furthermore, Bilgihan et al. (2011) proposed only a conceptual model to identify IT capabilities as one of the implementation phase of IT applications that can lead to achieve organizational performance through low cost, added value, speed, agility, and customer service. Another conceptual model was developed by Khatri (2006) to explore how firms can benefit from technology by exploiting IT capabilities through technical and managerial skills. It was suggested that IT capabilities include five dimensions: professionally competent and enlightened top management,

elevated status of IT, trust between IT managers and line managers, IT human resources and IT infrastructure. Nevertheless, it was suggested to investigate other factors along with IT capabilities in other regions, different industries or multi-industry contexts as this is an important avenue for more generalizable results (Lyver & Ta-Jung, 2018; Ramón-Jerónimo & Herrero, 2017; Rehman et al., 2018). While other studies are conducted using in-depth qualitative analysis extracted from secondary data only (e.g., Cao et al., 2016; Goh et al., 2007; Govindaraju et al., 2018).

2.2.2 IT Capabilities and its Contribution to SP

In the last half-century, IT capabilities have been regarded as the most powerful force for increasing organizational productivity. IT has the potential to improve sustainability practice in a variety of ways. Recent studies highlighted that IT has also played a critical role in revising the practice of corporate sustainability, which could improve the poor performance of their waste products (e.g., resources waste, energy inefficiency, noise, and emissions) (Gokarn & Kuthambalayan, 2019). For example, IT capabilities are considered a critical aspect for organizations to collect relevant data that would allow them to analyze energy consumption effectively (Callaway & Jagani, 2015; Fink, 2011; Khatri, 2006). It could also help to promote a high level of product innovation performance which may lead to improve organizational performance (Raymond et al., 2018). Furthermore, IT capabilities allow companies to redesign their processes in a way that has a positive impact on environmental dynamism (Callaway, Celuch, & Murphy, 2009). Furthermore, Ramón-Jerónimo, and Herrero (2017) have offered a new procedure to analyze firms'

heterogeneity with respect to the capabilities they possess and which are considered as the key to achieving sustainable firms able to survive economic recessions. They revealed that IT capabilities present stronger effects in the explanation of firm heterogeneity to develop competitive advantages based on marketing capabilities. However, technology sophistication, management skills, and integration of resources are key issues when implementing IT decisions. Nowadays, organizations seek to become more active in technological turbulence as well as to incorporate certain IT analytic capabilities for any unforeseen situation (Omar, Ali, & Jaharadak, 2019).

Derived from existing literature, the proposed relationships among IT capabilities and SP factors, service quality, organizational performance and top management support are discussed, and hypotheses related to these variables are developed. IT capabilities could play an important role in SP. For example, an important factor in the sustainability development of firms is smart technologies as one of the IT infrastructure capabilities (Saunila et al., 2019). IT capabilities could contribute to the firm performance across multiple industries by effectively responding to the increasing importance of incorporating environmental sustainability practices (Ajamieh et al., 2016). In addition, creating and analyzing innovative products and services using advanced information technology is playing a dominant role to sustain competitive advantage (Hsu, Tsaih, & Yen, 2018). In general, IT is considered as an enabler for sustainability improvements as IT infrastructure, in particular, can affect different elements of sustainability (Thöni & Tjoa, 2017).

Sustainability can still be seen as a liability for some firms (Russo &

Fouts, 1997); however, this concept has been changed as it was found that there is a positive connection between environmental performance and economic performance (Bansal & Clelland, 2004). When organizations make efforts to apply sustainability practices, their operation and innovation are improved. They can also obtain strategic growth, gain a high performance, and deliver sustainable values to the broader society (Colbert & Kurucz, 2007; Hart & Milstein, 2003; Porter & Kramer, 2006). Recent research has utilized the resource-based-view (RBV) of the firm as the theoretical foundation to argue for the benefits of adopting TBL for firms' growth.

H1: IT capabilities have a positive relationship with sustainability practices

2.2.3 IT Capabilities and its Contribution to OP

The business value of information technology has been debated for many years as the technical and market information is very crucial to develop a product or service that are liked by consumers (Griffin & Hauser, 1992; Narver & Slater, 1990). The launch of e-commerce units may use existing corporate IT resources, and can then be used to help develop further IT resources that can be used throughout the corporation (Callaway & Jagani, 2015). However, firms may end up with an unstable foundation and not be able to fully realize and extract the value of their IT innovative initiatives (McAfee & Brynjolfsson, 2008) due to inadequate refinement and meticulous execution. For example, firms that are overly proactive in IT may find themselves constantly allured by emerging technologies but lack the capability to focus and turn these opportunities into profits. These firms may also make misjudgments on the

timing of adoption and implementation, resulting in fragmented silos or bleeding edge technology choices (Lu & Ramamurthy, 2011).

Thus, it is critical for any business to understand its IT capabilities associated with performance outcomes of organizations in general (Govindaraju et al., 2018) because IT resources themselves will not necessarily lead to improve performance as they are only the input for the development of IT capabilities (Callaway & Jagani, 2015). Earlier studies define IT capabilities in various ways, for instance, as the IT knowledge, IT technical and management skills, and IT practices that can determine how good firms can perform the IT systems implementation, including the IT project management that needs more strategic IT skills to support future business needs (Govindaraju et al., 2018). Hence, organization's leaders like the CEO and senior managers are responsible to develop IT capabilities (Khatri, 2006) by controlling the flow of IT resources (Callaway & Jagani, 2015). Others defined IT capabilities as the firm's ability to mobilize and deploy the multifaceted bundles of IT resources in combination or co-presence with other resources and capabilities to improve various indicators of firm performance (Bharadwaj, 2000; Grant, 1991; Nevo & Wade, 2010; Ross, Beath, & Goodhue, 1996). Together with the management support, organizational outcomes can be improved too, including productivity, growth and innovation, to serve as a source of high performance (Lyver & Ta-Jung, 2018; Raymond et al., 2018). Several studies posit three components of IT capabilities, namely, IT infrastructure, IT human resources and IT enabled intangibles (Bai, Yoo, Deng, Kim, & Gao, 2016; Lyver & Ta-Jung, 2018; Rehman et al., 2018; Zhang & Hu, 2018). Another study conducted by Phama

and Jordanb (2009) asserted that only IT human resources and IT infrastructure have constitutions related to firm performance while IT partnership significantly lacks influence.

A study was conducted in Ghana and resulted in the importance of deployment and enhancement of IT capabilities in the operations of family businesses, which can lead to superior performance (Donkor et al., 2017). Another study argued that IT resources are tightly related and are the foundations of IT capability which helps companies achieve long-term competitiveness (Ross et al., 1996). In this essence, the IT capabilities play a vital role in order to facilitate internal communication and cross-functional integration, which can lead to use IT in supporting financial performance and greater organizational success (Day, 1994). When companies adopt any type of IT infrastructures, it is important to analyze the effects of the transformation on the changes needed in the firm's IT capability, in order to benefit from this adoption (Govindaraju et al., 2018). IT capabilities are an outcome of how a firm leverages its IT resources operations. In short, well-developed and successful IT resources constitute an IT capability (Callaway & Jagani, 2015). Lee and Anderson (2006) conducted an exploratory study to examine the factors affect the IT capabilities. Their results indicated that the factors that affect IT capabilities are complex and cannot be directly addressed. They also recommended that more studies are required to examine the factors related to IT capabilities.

The advantages of IT capabilities may consist of productivity improvement, costs reduction or better products and services that significantly

streamline and integrate the value chain, eliminate or reduce redundant or non-valued processes (Bilgihan et al., 2011). IT capabilities can also effectively help companies reconfigure and adjust their own resources to achieve positive performance outcomes (Zhang & Hu, 2018). Despite extensive studies on IT-related topics with organizational performance, there is no consensus as to how IT resources and capabilities interact with organizational processes to create value and enhance performance, which leads to misleading and causes confusion in the literature.

It is little surprise that there is a growing body of IT capabilities-focused literature examining its correlation with organizational performance. However, despite all of these efforts, there appears to be no final consensus regarding IT capabilities' definition or classification. In the case study of Quaadrass et al. (2014), firms often struggled to increase their performance and it was only apparent in firms that 'worked smarter' by empowering decision-makers with information and clear business rules, as well as by using business analytics to create and revise their business rules. However, they found that only six firms were demonstrating significant benefits from enterprise-wide information capabilities and accelerating the benefits from IT-based business initiatives. Researchers conceded that technical, human or other resources, by themselves, do not pose a source of competitive advantage for an organization but are, rather, used to improve firm performance (Melville et al., 2004), while Jurisch et al. (2014) posit that an organization needs to possess capabilities, including IT as one dimension, that are necessary for executing the changed business process. Foreign competition posits to make domestic firms being

compelled to integrate IT capabilities in order to influence both logistics and organizational performance (Davis-Sramek et al., 2016). Yet, it is no surprise that IT is unable to provide a better performance when firms duplicate a particular adoptive technology; thus, how IT as a resource and capability has an impact on firm performance remains an unresolved issue (Akter, Wamba, Gunasekaran, Dubey, & Childe, 2016; Kamasak, 2017). Soltany et al. (2018) provide necessary guidelines and knowledge about types of IT that are effective in organizational performance. However, they recommended to study further about other IT variables in other organizations. Furthermore, Fink (2011) recommended to further investigate on whether or not IT constitutes a source of organizational performance. As a result, the underlying apparatus through which IT capabilities impact organizational performance remains blurred as many studies call for conducting further investigation. This study therefore hypothesizes:

H2: IT capabilities have a positive relationship with organizational performance

2.2.4 History of Sustainability: The Triple Bottom Line

From the sustainability perspective, the scope triple bottom line (TBL) is incorporated, which has three traditional pillars: the environment, society, and economic performance (Elkington, 2001). Multiple stakeholders in businesses are under more pressure to foster sustainability strategies and practices that impact the environment by considering people and planet in addition to profit (Elkington, 1994). Nevertheless, managers do not necessarily understand how

to apply it appropriately in their companies (McWilliams, Parhankangas, Coupet, Welch, & Barnum, 2016). According to Mori and Christodoulou (2012), creating a balance and integrated vision regarding sustainability depends on a TBL approach. Several works that linked IT capabilities with sustainability employed a TBL framework, such as teaching sustainability literacy in the IT industry (Payne, 2010), developing sustainable technologies and practices in the sporting goods sector (Subic, Shabani, Hedayati, & Crossin, 2012), using IT for sustainable supply chain management (He et al., 2019; Thöni & Tjoa, 2017), and in industrial companies (Birkel et al., 2019).

Within this realm, the so-called triple bottom line is considered a strong theoretical fit for measuring multidimensionality of sustainability (Lee, Geum, Lee, & Park, 2012) to evaluate business performance on its impacts on the environment and interested stakeholders besides profitability and social concerns.

2.2.5 Definition of Sustainability

The sustainability concept is defined by the United Nations Report of Human Development (November 2011) as “not exclusively or even primarily an environmental issue. It is fundamentally about how we choose to live our lives, with an awareness that everything we do has consequences for the seven billion of us here today, as well as for the billions more who will follow, for centuries to come” . It emerged in the 1960s in response to the concern about environmental degradation because of the poor resource management and its association with the constraints and consequences of economic growth. A

similar concern was raised in 1798 by the scholar Thomas Robert Malthus about the growth in population and its association with limited environmental resources. In early 1980, the theme of sustainability focused more on the environmental protection and the life support systems maintenance, including those of human beings. During the early 1980s, the term “sustainable development” was first introduced to become a systematic approach to accomplish the social and environmental principles and improve economic performance (Yang & Ha-Brookshire, 2019). The International Union for the Conservation of Nature defines sustainability as “main agents of habitat destruction and environmental degradation as poverty, population pressure, social inequity and the terms of trade” (IUCN et al., 1980, p. 8). The notion of sustainability began to change during the mid-1980s, exemplified by the publication of *Our Common Future*, as part of the World Commission on Environment and Development (1987). Sustainability became associated with the notion of development and prosperity, instead of exclusively focused on constraints to growth. The idea was reframed from an outcome (e.g., human development) to a means of achieving the outcome, in terms of the ability to sustain human development in light of the environmental constraints created by the economic expansion models of the industrial era. The definitions of sustainability in literature have also been evolved in according to the development of sustainability theory and its applications worldwide. Sustainable development is defined in the Brundtland Report, released by the United Nations in 1987, as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Jarvie, 2016). This definition has become broadly adopted across the nations

worldwide. Thus, sustainability is understood as a harmonious state in which the needs of humans (e.g., business, society) can be met without doing harm to the ecological systems (Winsemius & Guntram, 2002). Following this fundamental definition, many business studies have now expanded their definitions of the sustainability to suit their purposes. For the most part, corporations were seen as the source of much of the problem during this phase, unwilling to embrace a broader social responsibility over and above their duty to shareholders. There is a host of different definitions of sustainability and its philosophies circulating in the literature and around corporations worldwide. For example, sustainability is regarded as “a process of achieving human development in an inclusive, connected, equitable, prudent, and secure manner” (Gladwin, 1995, p. 877), “the result of the growing awareness of the global links between mounting environmental problems, socio-economic issues to do with poverty and inequality and concerns about a healthy future for humanity” (Hopwood et al., 2005, p. 39), and the “development that enables the systems in that it is located to maintain a state of health that is necessary for survival at a higher level of quality” (Ko, 2005, p. 435). Table 2.1 presents different versions of definition of the sustainability from previous literature.

Table 2.2 Definitions of sustainability

Sources	Definitions of Sustainability
Hopwood, Mellor, and O'Brien (2005)	The growth in environmental and socioeconomic difficulties as a result of growing global awareness of poverty and inequality, as well as concerns for humanity's future health.
Ko (2005)	Development that allows the system in which it is placed to maintain the minimum degree of health necessary to live at a better quality.
Szekely and Knirsch, 2005	Establishing a society in where economic, social, and ecological goals are balanced.
Goodland and Daly, 1996	Without expansion of matter and energy throughput beyond regenerative and absorbent materials capabilities, development is unachievable.
Gladwin, Kennelly, and Krause (1995)	A method for attaining human growth in a manner that is accessible, interconnected, fair, wise, and secure.
UNEP, 1991	The quality enhancement of human life while living within the capacity of ecosystems boundaries
WCED, 1987	The development that satisfies current human's demands without jeopardizing the future generation's needs.

2.2.6 Sustainability Categories

The study of sustainability has now been a core of philosophy and epistemology (Gladwin et al., 1995). Sustainability development focuses on three important aspects related to social, economic, and environmental developments (Wijethilake, 2017); and these three elements are termed as the “triple bottom line” (Elkington, 1997). Social sustainability is referred to as the progress of sustainability which enables all human beings to (1) satisfy their essential needs, (2) achieve a reasonable level of comfort, (3) live lives of meaning and interest, and (4) share fairly in opportunities for health and education (Assefa & Frostell, 2007; Chiu, 2003). Economic sustainability is related to the means by which a society should balance the need of humans and

the availability of natural resources as a form of the pursuit of human welfare (Assefa & Frostell, 2007; Jennings & Zandbergen, 1995). In here, profits and economic growth are two essential elements for sustainability (Asadi et al., 2020; Hall et al., 2010). Environmental sustainability is concerned about the natural capital and that it must be maintained, both as a provider of input and as “sink” sources for a waste management program (Assefa & Frostell, 2007; Jennings & Zandbergen, 1995).

2.2.7 Sustainability in Business

In a business context, sustainability is the abilities of an organization to satisfy or exceed the needs of its direct and indirect stakeholders without compromising its ability to meet the needs of other parties (Garvare & Johansson, 2010). With consumers advocating for sustainability, companies nowadays are also trying to integrate the theme into their business operations, thus developing sustainable organization capabilities helps them to compete in the business world (Wang, 2016). In essence, the sustainability view assumes a balance among social characteristics, environmental conditions, and economic opportunities that best emerges with a long-term planning horizon (Elkington, 1998). In particular, the environmental dimension of sustainability is to use natural resources to reduce emissions and waste (Anthony Jnr, Abdul Majid, & Romli, 2019); social sustainability is to actively support the preservation and creation of an individual’s skills and capabilities, safeguarding their health and supporting equity needs (Macchion et al., 2018); economic sustainability is the ability to grow financially for a long term by possessing liquidity and producing a persistent profit (Müller & Pflieger, 2014). Accordingly, institutions need to

align environmental, economic and societal goals concurrently rather than address them separately. Particularly, environmental sustainability can be viewed as a business opportunity of competitiveness and profitability for companies, creating business value, and the basis for effective innovation (Metz, Burek, Hultgren, Kogan, & Schwartz, 2016). Companies can decrease production costs and increase economic efficiency by applying environmentally related practices, such as reduction of energy consumption, reuse of material, and redefinition of operation and production process (Huang & Li, 2017).

The objective of the business is the creation of value and synergies among the economic, social and ecological realms of corporate performance where the business focuses not only on the customers but on all of the stakeholders (Maletič et al., 2014). Organizations operating in today's challenging market conditions compete not only in generating new products and/or services and knowledge, but also in effecting positive social and environmental change (Haigh & Hoffman, 2012). This is true as various corporations in many countries are increasingly concerned about sustainability and organizational performance due to economic and environmental pressures (Marchi, Maria, & Micelli, 2013). Another pressure by the government is also on organizations to adopt sustainability initiatives to reduce the negative impact on the environment (Newell, 2009). As a result, organizations have started to employ green solutions in order to lessen material utilization, reduce CO₂ emissions and minimize energy consumption (Macchion et al., 2018). However, organizations at the early stage of sustainable development face greater challenges and opportunities compared with those in mature economies (Calero et al., 2019) as

it seems there is still a need to enhance the understanding of the link between sustainability practices and overall organizational performance.

2.2.8 Relationships between Sustainability Practices, and Service Quality with Regard to Organizational Performance

Firms possessing high flexibility in responding faster have more sustainability practices than competitors. With good sustainability practices, companies can improve high performance (Metz et al., 2016) as subsequent researchers have affirmed that sustainability can have a major effect on both innovation and business success. For example, companies that adopt a sustainability mindset which depends on environmentally sustainable practices and initiatives can increasingly result in positive performance outcomes (Benavides-Velasco, Quintana-García, & Marchante-Lara, 2014; Metz et al., 2016). Chen, Lim, and Stratopoulos (2011) undertook a quantitative study to explore the hypothesis of sustainability during an economic downturn in large companies and found that it can generate distinct organizational performance, while research has acknowledged that addressing sustainability issues is critical to the long-term existence and thriving of companies (Porter & Kramer, 2006). According to Akram et al. (2018), focus on creating sustainability could cause a superior performance of competitors in the service industry. Taking an integrated perspective, firms also need to consider implementing the social and environmental practices of their business activities besides focusing on economic profits (Aktin & Gergin, 2016). Doing so could actually help firms obtain a good image and strengthen long-term competitiveness (Kumar & Christodouloupoulou, 2014). Evidence shows that the TBL approach encourages

organizations to engage in activities that positively affect the environment and society as well as economic performance (Batista, Bourlakis, Smart, & Maull, 2018). In fact, it is argued that a firm's opportunities to enhance its performance by development and exploitation sustainability practices enable them to deliver sustainability value to stakeholders (Dao et al., 2011).

Sustainability brings new challenges and more complexity for the companies and their capabilities. The core tenet of sustainability practices was articulated from the triple bottom line that requires three unique interrelated dimensions: social, financial and environmental performance (Brockhaus et al., 2017; Calero et al., 2019; Machado et al., 2017). Despite the positive development of literature examining the impact of sustainability practices on organizational performance (Howard & Lubbe, 2012; Hsu et al., 2018), there is a paucity of theoretical and empirical studies identifying the broad capabilities that affect a firm's ability to simultaneously pursue economic, environmental and social success and, hence, achieve optimal performance (Dao et al., 2011; Debnath, 2018). However, businesses in the hospitality industry must comply with service standards that depend on sustainability practices (Chen & Barrows, 2015; Suhaeni & Sosianika, 2018). For instance, Vetráková, Šimočková, and Pompurová (2019) discussed the importance of continuous development and job stability in order to ensure the quality of tourism services while also considering sustainability. They found that service quality jeopardizes a company's sustainability in the market; therefore, it should be addressed.

The literature on organizational performance and service quality is extensive (Feather, McGillis Hall, Trbovich, & Baker, 2018). This research has

found strong correlations between various characteristics and service quality. They determined that service quality influences individual, supervisory, and organizational performance in an integrative review of studies conducted between 1980 and 2016. Others have linked service quality to organizational success, which has a temporal influence and long-term benefits (Rapert & Wren, 1998). The role of service quality as a mediator between customer relationship management and organizational performance was explored by Lebdaoui and Chetioui (2020). Lebdaoui & Chetioui (2020) found that service quality as a mediating variable and customer relationship management favorably improves organizational performance using Moroccan banking services data. El-Borsaly and Hassan (2020) investigated the relationship between service quality and organizational performance in the Egyptian mobile telecommunications industry and reported that service quality has a considerable favorable impact on organizational performance. These findings support prior studies highlighting the importance of service improvement and innovation on hotel success, such as Cheng and Lin (2014). They used a quantitative questionnaire survey to investigate the relationships between service quality and organizational performance. They revealed that service quality has a partially favorable impact on financial performance in an organization. To be competitive in the market, a company must differentiate itself from its competitors by improving service quality (Gounaris et al., 2003).

Overall, results consistently showed the benefits of sustainability practices across industries and settings in the long term while also satisfying customer need. The following hypotheses are therefore proposed:

H3: Sustainability practices have a positive relationship with service quality

H4: Service quality has a positive relationship with organizational performance

2.2.9 Sustainability Practices and Service Quality as mediators

The concept of service quality has been investigated since the 1980s (Aquilani, Silvestri, Ruggieri, & Gatti, 2017) as a plethora of disciplines due to its critical determinant of business performance, profitability, customer satisfaction, customer retention, and service guarantee (Sohail, 2003). Most service quality definitions depend on the context and primary focus on meeting the customer's requirements to match their expectations by delivering a high-quality service (Muturi, Sagwe, & Namukasa, 2013). Therefore, service quality is the customer's expectations before obtaining the services and the satisfaction level of the encountered services (Gupta, Singh, & Suri, 2018). Parasuraman et al. (1985) defined service quality as the differences between customers' perceptions and expectations which include five dimensions: tangibles, tangibles, reliability, responsiveness, assurance, and empathy. In particular, if the perceptions exceed the expectations, customers believe that the hotel provides quality service (Tang, 2014). Thus, to warrant that superior service quality is delivered, hotels should endeavor to augment their service capabilities to meet their customer needs and continuously offer better value (Narver and Slater, 1990; Zhou et al., 2009). The two basic forms of service innovation capacity for satisfying customer needs and retaining consumers are service

innovation and service improvement (Chang et al., 2011; Martnez-Ros and Orfila-Sintes, 2009).

Customer satisfactions depend on two paradoxical capabilities, which are service innovation and service improvement (Subramaniam & Youndt, 2005; Tang, 2014). Service innovation is a way to serve the customers by creating new services (Tang, 2014), while service improvement is the capability of the firm to develop the current services, processes, and systems. It is insufficient to only focus on exploration or exploitation activities to enhance service quality (Tang, 2014) because customers' needs in hospitality are rapidly changing (Choo, Tan, & Yeo, 2018).

All services necessarily involve some level of customer participation (Chase & Tansik, 1983; Lovelock, 1996). However, the customer's role as a co-producer in high contact service systems requires physical presence, which poses numerous challenges for hospitality organizations (Soteriou & Chase, 1998) and has the potential to influence environmental actions (González-Rodríguez, Díaz-Fernández, & Font, 2020). Often, certain environmental activities are hidden from the customer as they take place in the back office (Müller & Pfleger, 2014). Moreover, hotels as an example may exploit business opportunities by redesigning their products and services to meet environmental standards and social needs (Prud'homme & Raymond, 2016b; Whelan & Fink, 2016). Rather than simply assuming that hotels must implement sustainability practices such as water and energy protection (Chan & Hsu, 2016), it takes the stance that sustainability should be approached strategically (Gokarn & Kuthambalayan, 2019). In contrast, economic sustainability entails enduring

economically in a manner that allows the current and future guests and other stakeholders to benefit from the hospitality services and tourism experiences (Jones et al., 2016; Pasape et al., 2015). Additionally, information system and capabilities contribute to customer satisfaction through constant improvements in service quality and effective resources forecasting (Chahal & Bakshi, 2016). Therefore, investments in IT to obtain customer perception can yield significant firm performance through the improvement of products and production processes reliant on IT (Leal-Millán, Roldán, Leal-Rodríguez, & Ortega-Gutiérrez, 2016). That is, hotels' managers have acknowledged the importance of IT capabilities (van de Wetering et al., 2017) and service quality (Howard & Lubbe, 2012) in promoting organization's sustainability capabilities.

Furthermore, businesses tend to offer superior customer services, which results in positive impact on organizations' reputation and image (Awwad & Agti, 2011), better customer loyalty and higher profitability (Heskett, Jones, Loveman, Sasser, & Schlesinger, 1994). Nevertheless, the customer perception of quality can be improved through staff training, updated facilities, innovative services, and personal attention (Heroux, 2017; Hsieh, Park, & Hitchcock, 2015). Hence, the executives play a critical role to align the services offered according to customer perceptions and supply resources for the employees to carry out the services in a high-quality manner (DeFranco & Schmidgall, 2014). They need to set quality standards that their staff can achieve, and customers perceive as wanted because improvement in perceived quality may not be related to customer involvement within the organization (Clem, Theresa, & Ravichandran, 2013). However, achieving sustainability practices without

compromising service quality is considered as a challenge since customers may relate sustainability to lower comfort or cleanliness (Rhou & Singal, 2020).

As a result of the findings, it is unclear how hotels can achieve superior performance based on service quality and IT capabilities; it is evident that research in service quality and sustainability capabilities with the support of IT capabilities in hotels needs to be conducted. There are several studies on the sustainability practices with regard to technology and service quality (Fudo, Matsumoto, Kashima, & Akiyoshi, 2014; Kassinis & Soteriou, 2015; Metaxas, Chatzoglou, & Koulouriotis, 2019; Njoroge et al., 2019), whereas works integrating the three dimensions and discussing the trade-offs between them are scarce as most of these studies adopt only an environmental aspect. Also, empirical studies that examine the customer service experience by incorporating both the service quality and the sustainability capabilities are remarkably scarce. Thus, the following hypotheses are postulated:

H5: Sustainability practices mediate the relationship between IT capabilities and organizational performance

H6: Service quality mediates the relationship between IT capabilities and organizational performance

H7: Sustainability practices and service quality sequentially mediate the relationship between IT capabilities and organizational performance

2.2.10 Top Management Support as moderator

Top management support is considered as an important element in applying innovations in firms (Liang et al., 2007). Thus, in the field of hospitality, employees tend to develop new ideas and initiatives when they are supported from their top management (Dai et al., 2015). Achieving superior performance through the use of IT capabilities is contingent with top management support (Islam, Cenfetelli, & Benbasat, 2020). Top management support was also asserted as a main factor in playing a significant role in firms' adoption of IT (Alshamaila, Papagiannidis, & Li, 2013). Managers are responsible for leading the identification of new techniques, technologies and information to effectively foster sustainability in their companies (He et al., 2019; Hsu, Liu, Tsou, & Chen, 2019). However, there are uncertainties and less commitment toward human responsibilities (Busse, Schleper, Niu, & Wagner, 2016). In general, companies gain optimal benefits from investments in IT when leaders have commitment to seize the opportunities to exploit new IT innovations and continue to improve how organizations use IT to achieve growth and asset utilization (Dong, Neufeld, & Higgins, 2009; Quaadgras et al., 2014).

Furthermore, senior managers can create a positive atmosphere to inspire their employees to take part in the implementation of IT plans and by acquisition of the requisite training and motivation to affect firm performance positively (Byrd & Davidson, 2003). Lloyd-Walker and Walker (2011) stated that leaders in the project-oriented organizations can easily solve complex problems by developing a new product or service for the success of their projects. In fact, Garrett Jr and Neubaum (2013) emphasized that, regardless of

which IT capabilities are being implemented, managers must envision the firm's existing technologies to sustain current customers and products in order to survive in highly competitive markets. In the context of innovation, Kanwal, Zafar, and Bashir (2017) proposed that top management support moderates the relationship between outcome control and the performance of IS projects. This proposition is consistent with the work of Maletič et al. (2014), who argued that using and developing existing capabilities, endorsing improvements in existing products/processes, and building on existing technological elements are all dependent on top management decisions. They discovered that managers must modify their actions in order for the desired outcomes to be achieved. This is because such success always requires a change of organizational context (Henningsson, Yetton, & Wynne, 2018).

Additionally, higher levels of top management can overcome organizational changes. This is the only way to ensure the success of an improved information system process (Ahmed, Mohamad, & Ahmad, 2016). When top management has a strong commitment, service quality improves (Al-Arafati, Abdul Kadir, & Al-Haderi, 2019; García-Sánchez, García-Morales, & Bolívar-Ramos, 2017). Employees exhibit high levels of organizational commitment as a result of a company's positive treatment and affective emotions (Li & Liu, 2018). As a result, when an organization's IT capabilities efforts are undertaken, employees are expected to admit greater loyalty to organizational commitment and service quality if they perceive top management's support for the efforts. It has also been discovered that top management activities in managing IT and committing capabilities are strongly

related to organizational performance (Ray et al., 2005). Based on this review of the literature, management support is expected as act as a moderator between IT capabilities and organizational performance and to achieve organizational performance in the relationship with IT capabilities and service quality. The study therefore proposes:

H8: Top management support moderates the relationship between and organizational performance, with the relationship being stronger when top management support is at a high level

H9: Top management support moderates the relationship between service quality and organizational performance, with the relationship being stronger when top management support is at a high level

H10: Top management support mediates the moderating effect of service quality on the relationship between IT capabilities and organizational performance, with the mediating effect being stronger when TMS is at a high level

2.3 Research Model

Research on the hospitality sector and its performance tends to focus on IT capabilities without paying attention to other factors affecting the organizational performance, such as sustainability practices and service quality. In addition, top management support has played a critical role in IT capabilities deployment and service quality improvement.

IT capabilities were built on two main critical IT-based resources: IT

infrastructure and IT human resources. These resources are heterogeneously distributed across firms, and their presence or absence may explain the differential scope of IT capabilities and outcomes. The majority of study investigates the effects of IT capability characteristics on organizational performance has taken place in developed countries (Akram et al., 2018). IT capabilities, in contrast, are a major concern in the hospitality sector in growing countries, particularly in countries like the UAE, where tourism is one of the most significant industries (Michael et al., 2019). According to prior studies, research in developing nations is insufficient, and that differences in environments and cultures between developed and developing countries may result in different outcomes (Lyver & Ta-Jung, 2018; Martinho et al., 2016). As a result, a research on this topic in a developing country will offer new insights on the challenges.

Sustainability-related activities typically refer to three traditional pillars: the environment, society, and economic performance (Elkington, 2001) based on the triple bottom line approach. Recent research emphasizes the importance of information technology – sustainability-related activities in contributing to a more sustainable future (Akram et al., 2018; Gokarn & Kuthambalayan, 2019). Although IT represents a potential source of environmental sustainability via reduction of energy consumption, release of waste, pollutants and environmental incidents (Callaway et al., 2009), advanced IT capabilities have the potential to improve resource efficiency at firm level for profitability (Ramón-Jerónimo & Herrero, 2017) and social advantage (Thöni & Tjoa, 2017). Much prior Information Systems (IS) and sustainability literature aims

to understand how IT triggers the firm's sustainability practices management (Saunila et al., 2019) but research on the role of IT in enabling sustainability practices management is very limited.

Sustainability is a new, broad, and systematic subject for mass economies and companies, specifically in the hospitality sector. It is not only a concept, but also an ideology that exhibits continuity in economic, societal, and ecological issues (Wijethilake, 2017). Among the capabilities of IT, sustainability is also a means used by firms to gain a better performance. Firms achieve sustainability by appropriately implementing IT capabilities with innovation-based business models.

Despite a paucity of theoretical and empirical studies recognizing the impact of sustainability practices on organizational performance with the support of IT capabilities (Howard & Lubbe, 2012; Hsu et al., 2018), it cannot be ignored that the efficiency and sustainability approaches are not always aligned, and additional investigation might be required to simultaneously pursue economic, environmental and social success and, hence, achieve optimal performance (Dao et al., 2011; Debnath, 2018). It is also favorable for businesses in the hospitality industry to comply with service standards that are in line with sustainability practices (Chen & Barrows, 2015; Suhaeni & Sosianika, 2018).

However, businesses in the hospitality settings have challenges to balance between service quality and sustainability standards (Chan & Hsu, 2016). The first reason is that sustainability aims at reducing the consumption protection while service quality requires excessive use in materials and

resources (Prud'homme & Raymond, 2016b; Whelan & Fink, 2016). Consequently, service quality has a detrimental impact on sustainability practices, which must be addressed in order for a company to remain competitive in the market (Vetráková et al., 2019). The second reason is related to the difficulty of defining service quality because of the absence of a universal benchmark that service performance can be compared with because of varying levels of customer expectations (Chahal & Bakshi, 2016). Although it may be a reasonable assumption that service quality depends on similar dimensions around the world, research has shown that other aspects, like culture, for example, may influence the evaluations of service quality (Wattanakamolchai, Singal, & Murrmann, 2016). Across industries and settings, results indicated consistent and long-term benefits for sustainability activities while also delivering on customer demand.

Services industries, such as hospitality and tourism, are important parts of any economy, and they are becoming increasingly important as part of a country's economy (The UAE's Government Portal, 2019). When it comes to assessing organizational performance, we should evaluate the service-profit link, which appears to make sense given the sensitive nature of hospitality services (Wattanakamolchai et al., 2016). The company's service quality can be improved by developing new services and upgrading existing ones. There will be a greater influence on organizational performance when organizations achieve consumer expectations for service levels while also adhering to sustainable business practices (Vetráková et al., 2019). In general, companies can successfully accomplish their performance goals when service quality is

compatible with growing sustainability practices that maximize the utilization of IT capabilities. Additionally, effective responses to rising customer expectations and needs include not only keeping low prices while maintaining a high level of service quality, but also developing product or process solutions that meet sustainability standards. This is particularly visible among hospitality organizations, where many lags behind in terms of sustainability practices due to a lack of IT capabilities (Russo & Fouts, 1997) and have failed to extract value on their IT investments (Leal-Millán et al., 2016).

To close these research gaps, this study attempts to examine the extent to which IT capabilities strengthen pursuit of sustainability activities and service quality, which, in turn, might represent an important precursor of superior firm performance. Also, this study aims to explore the role of top management support in the IT capabilities - organizational performance relationship. This study filled a knowledge gap about the relationships between IT capabilities, sustainability practices, service quality, organizational performance, and top management support in the hospitality sector. It was thus intended to be one of the first studies to combine all the above variables in a single study in the context of the Middle Eastern hospitality sector.

An integrated model was built based on the evidence from the previous studies. Despite the importance of relationships between IT capabilities, sustainability practices and service quality, there is a call to conduct a research to empirically examine about the direct and indirect relationships between IT capabilities and sustainability practices from one side and service quality from the other. Furthermore, a robust research framework for this study is proposed

based on the association between theory and the study variables. Figure 2-2 below illustrates the conceptual framework that serves the purpose of the current study. This framework consists of the factors that influence the organizational performance by using new ideas and dimensions to fill the gap in the literature, including IT capabilities, sustainability practice, service quality and top management support. These factors were clearly identified via critically reviewing the literature in addition to being derived based on the confirmatory study. Hence, the gap between variables in the research framework can be fully understood and addressed to enhance awareness of the importance of independent factor of IT capabilities in affecting organizational performance. This integrated model includes these relationships by combining the results of ten hypotheses. These hypotheses were proposed after completing a review of a broad range of literature. A comprehensive and customized framework was developed based on an extensive critical review of the prior research to fit the hospitality industry. Yet, these hypotheses are required to be empirical examined to better comprehend the model.

Figure 2.2 further illustrates the overall relationships that were examined in this study. As discussed in further detail in Chapter 3, relationships among the IT capabilities, sustainability practices, service quality and organizational performance were evaluated using structural equation modeling. The primary nature of this study was observational, quantitative, and relational, though differences between facilities regarding the relationship between the dimensions of IT capabilities, sustainability practices, service quality and organizational performance were compared. The structural, cognitive, and relational dimensions

of independent and dependent variables as well as mediators were measured using a validated survey instrument, with no experimental manipulation.

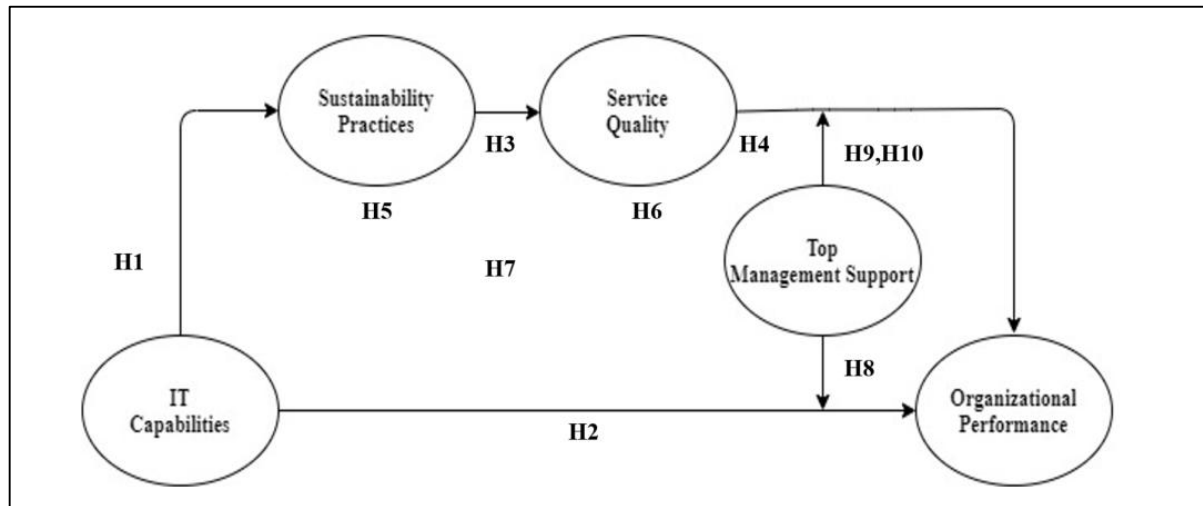


Figure 2.2: Research framework

2.4 Conclusion

A review of the relevant literature has been conducted in this chapter pertaining to the subject areas of IT capabilities, sustainability practices, service quality, top management support and organizational performance. This chapter also discusses theories and models related to the variables of the study framework: the RBV, dynamic capabilities, contingency theory, and the TBL. Having reviewed the relevant literature, the various relationships between the studies' constructs are described: the associations between ITC, SP, SQ, and OP, the indirect impact of SP and SQ on the ITC-OP relationship, and the relationships of ITC, SQ and OP with TMS as a moderator.

The next chapter, research methodology, discusses methods for collecting and analyzing the data to address the objectives of this study and test

the proposed hypotheses in this chapter. In addition, the methodology, approach, design and strategy, sampling techniques, and data analysis techniques that were employed in this study are described, along with relevant justifications.

CHAPTER 3: RESEARCH METHODOLOGY

This chapter presents the basic methodological approach in constructing the research sample, the measures, and the analytical methods used in this study. The study employs the quantitative approach as it quantifies the problem by creating numeric data or data that can be transferred into usable statistics. Moreover, it is used to generalize results from a larger sample population. Specifically, this study mainly uses a quantitative approach to examine the contributions of IT capabilities through sustainability practices and service quality to achieve organizational performance and the role of top management support between the IT capabilities and organizational performance.

This chapter introduces the research methodology and provides a detailed discussion of the reasoning behind the selection of the adopted research design and the data analysis methods of the study. Regarding data collection, there is the presentation of instrumentation, population, sample, and sampling procedure as well as the data collection process. Furthermore, there is a discussion of validity, reliability, and ethical considerations.

3.3 Research Process

The research process for this study is depicted in Figure 3.2, which serves as the investigation's design plan. The preliminary test results aided in the refinement of the research framework and the improvement of the study

questionnaire (Sekaran & Bougie, 2010; Zikmund, Babin, Carr, & Griffin, 2010). This model was helpful in establishing a framework for the study development, research planning, and data gathering, as well as ensuring that the research was conducted in a systematic and efficient way.

The collection of the preliminary data indicated the interest of research according to the gaps and the research problem found in the literature review. The preliminary study was conducted to identify the plan and structure of the data collection, measurement, and analysis. Results from preliminary tests helped to obtain initial insights about the proposed research framework and revise the instruments deemed worth pursuing for the major study.

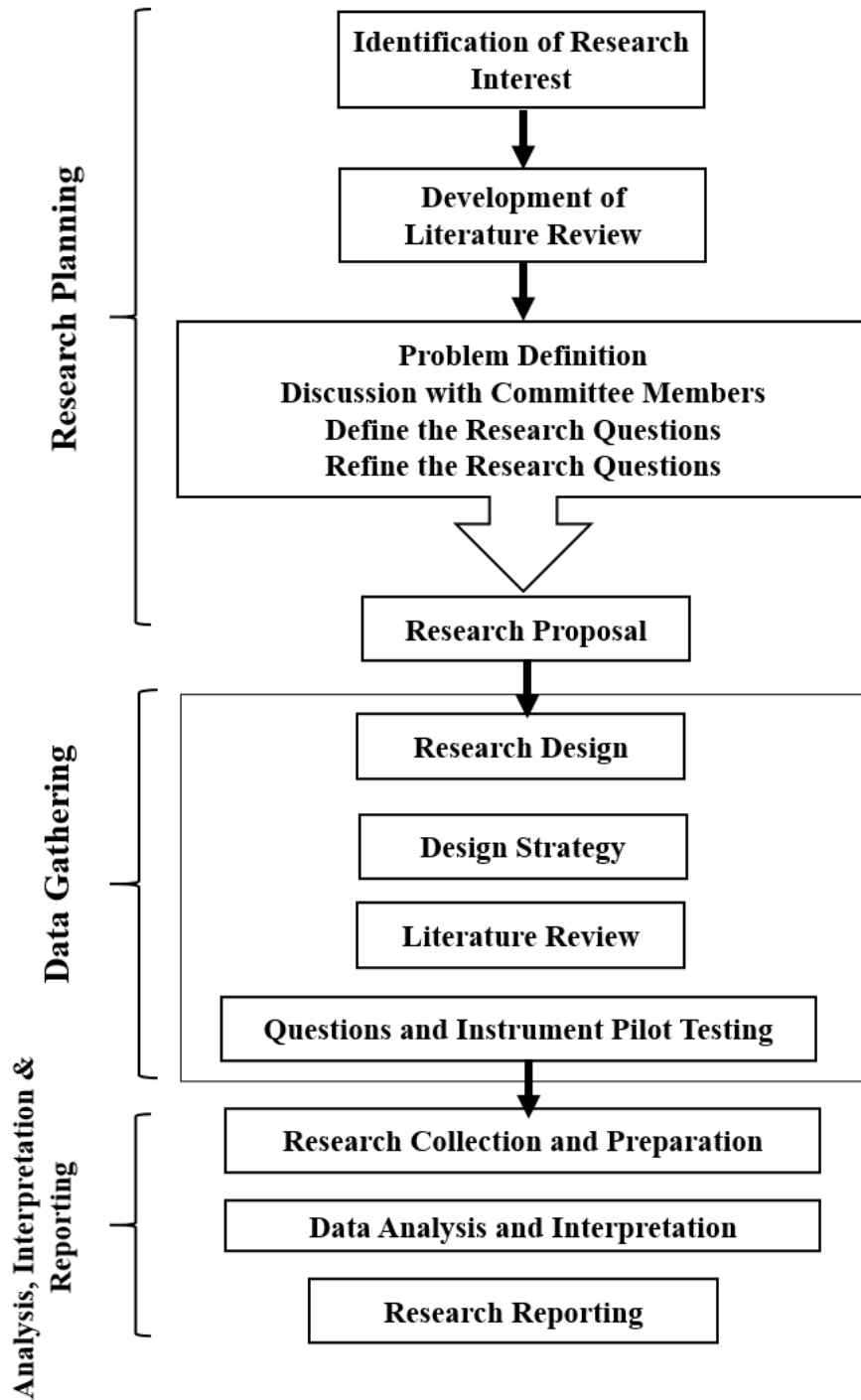


Figure 3.1 Research Process

3.4 Research Design

The methods and procedures utilized to collect and analyze research data were discussed from the perspective of research design (Zikmund et al., 2010). This guarantees that the correct data are used in the analysis to answer the research questions and find reasonable answers (Sekaran & Bougie, 2010).

3.4.1 Population and Sampling

The meaning of sampling is “the methods that researchers use to select the groups, objects, or phenomena that they actually observe (Thyer, 2001, p. 41), while population refers to “the universe of units from which the sample is to be selected” (Bryman & Bell, 2003, p.93). The sampling technique is considered to be completely random 600 target hotels that were selected from the United Arab Emirates’ (UAE) First Smart Online Business Portal.

Among the main reasons to choose the hospitality industry, hotels in specific, is the recent alterations in the industry due to the highly dynamic and competitive environments that leads to changing customer demand, bringing higher levels of process uncertainty. These require firms to be highly flexible and to adapt their business models and processes continuously (Krstić, Kahrović, & Stanišić, 2015). In the hotel industry, its management plays a key role to contribute to sustainability according to the UAE's vision, and the importance of sustainability is likely appeared to pursue in the years ahead (Michael et al., 2019). There is a growth estimation of 16 percent annually in the UAE hotel industry which is to be

worth at US\$14.6 billion (EmiratesGBC, 2016). The amount is expected to rise by an estimated 5.1 percent per annum from 2017-2027 to AED 116.1 billion (USD 31.6 billion), a total of 5.4 percent of the country's GDP by 2027. The hotels have been selected as a research sample for this study as the UAE has been a front-runner in the transition of sustainability by making efforts to become a successful model, for example, in being a low-carbon green economy. It is reported that UAE hotels rank among the top energy-consuming hotels worldwide in comparison to worldwide benchmarks given that they account for over 70 percent of energy consumption in the UAE (EmiratesGBC, 2016).

In order to better understand how IT capabilities are used in practice to support sustainability practices and service quality to improve organizational performance, an online survey was employed to a sample of hotels where the data were collected from these hotels, which are located in the north-west region of the UAE. Each region of the UAE has its own characteristics and elegance that is considered as a tourist destination which suits the aspirations and desires of Arab and foreign visitors. For this study, 600 legally licensed hotels were included in the study. The unit of analysis is hotels registered in the tourism authorities in the region (Ismail & M., 2018). However, the sample can provide a good representation of the population under consideration. Ultimately, the findings of the current study can be generalized to a wider population (hotels worldwide) because only 17 percent of hotels investigated in the current study are independent hotels, while the majority of hotels (83%) are operated by international chains. Many of international

chain hotels are based in the UAE including American hotels (U.S.-U.A.E. Business Council, 2019), which are supposed to have similar policies and headquarter management.

The current study target population is 600 hotel managers in all the UAE hotel categories. Several precautionary procedures were taken to increase the response rate of the current study questionnaire as discussed below using the data collection technique (self-administered questionnaire).

First, the questionnaire was directed mainly to hotel managers who are knowledgeable and have experience in their field and required information in IT capabilities, sustainability practices and service quality in their organization. Additionally, Phillips (1981) and Miller and Roth (1994) assert that higher-ranking informants are more trustworthy than their lower-ranking counterparts. Second, the questionnaire was provided through email to allow the respondent time to consider the questions and recall the needed answers. This is consistent with Cooper and Schindler's (2008) assertion that one of the benefits of the mail-administered questionnaire is that it allows respondents time to consider questions. Third, the questionnaire questions were constructed as multiple-choice questions to keep them basic and straightforward, and detailed explanations of any complex ideas were included to avoid any difficulties with articulating specific types of responses. Fourth, the questionnaire's initial line clearly stated the confidentiality and anonymity of the obtained data, encouraging respondents to respond and avoiding any sensitive concerns. Additionally, sensitive questions such as those requesting

personal information (hotel names, respondent names, and hotel addresses) are omitted from the beginning of the questionnaire in favor of optional questions at the conclusion. This is congruent with Sapsford and Jupp (2006) who argued that including sensitive items too early in the measurement instrument may compromise receiving the necessary information or even completing the questionnaire.

Three waves of data collection were conducted at three-week intervals to eliminate the possibility of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). A survey was distributed to 600 managers in the first wave (T1). A total of 580 completed surveys were received, representing a 97 percent response rate. Managers were asked with filling out demographic information and answering questions about their organization's IT capability and top management support. Three weeks later, in the second wave of the survey (T2), 580 participants were asked to report on their sustainability practices and service quality. In total, 550 valid replies were returned from 580 respondents who completed the T2 survey, representing a response rate of 94 percent. The third wave (T3) poll asked managers to respond to questions about organizational performance and top management support. Finally, only 507 legitimate responses were obtained, resulting in a response rate of 92 percent. This study's sample is composed of 69.6 percent males and 30.4 percent females. The average age of respondents was 31 years, over 50 percent of managers held a bachelor's degree, and respondents had an average tenure with their organization of six years. In terms of enterprise scale, Table 3.1 contains further information about the respondents and firms.

3.4.2 Research Approach

As noted by Zikmund et al. (2010), research methods should be appropriate for solving research problem, achieving the study purpose, the availability of data sources, making accurate and fast decisions and the expense of data acquisition. This study employed a deductive research approach that allows for data measurement and analysis. This type of research allows to study about associations and causality of the study variables. The findings that are collected from quantitative research are more objective (Zikmund et al., 2010). Thus, in quantitative research, hypotheses are tested using statistics to measure data (Roscoe, 1975) where data is normalized to provide the interpretation of empirical results.

As a result, this study involved a quantitative method in order to explore the impact of IT capabilities elements on organizational performance in the hospitality industry via sustainability practices and service quality. This was thought to be effectively addressed by quantitative data that could still be generalized to the target population. In both the pilot test and the main study, quantitative approaches were employed for data gathering and analysis.

The researcher preferred to use a quantitative approach to investigate the correlations between the study's variables. This method was chosen over qualitative or mixed-methods for the study because it involved scientific protocols, and quantitative researchers employ samples that are typical of a defined population to

draw conclusions. In comparison, qualitative approaches enable researchers to investigate complicated phenomena in their natural environment which is not the aim of this study. Moreover, the quantitative technique enables researchers to utilize surveys to minimize participants' and interviewees' feelings, to translate research data to numerical data and statistical values, and to readily assess the reliability and validity of the results, while the qualitative technique enables researchers to obtain data through interviews and other flexible data collection tools (Gäre & Melin, 2011).

The research methodology used in this study is derived from the soft-positivism paradigm (Seddon & Scheepers, 2006). Thus, this study used a quantitative survey to capture and evaluate the impact of IT capabilities, sustainability practices, and service quality on organizational performance by examining a sample of a wider population. This independent variable, the mediators, the dependent variable, as well as top management support as a moderator, may be evaluated using a survey design (see Table 3.1 for measurement items with sources). Through statistical analysis of measured or gathered data, hypotheses may be tested, resulting in the identification of the causal relationship between independent and dependent variables (Neuman, 2006). Although each participant was approached three times over a short period of time, the survey was nevertheless classified longitudinal (Creswell, 2009).

3.4.3 Data Collection Method

There were two stages of collecting data in this study for the pilot testing;

and the main study.

Pilot testing was conducted in order to purify, identify and minimize any potential problems of the data collection instrument (Sekaran & Bougie, 2010) and determine the appropriateness of the data collection plan (Zikmund et al., 2010) allowing improvement for the main study. It is important to implement in advance testing manipulations and measures because the original measurement items were used in previous studies with different contexts (Brandt et al., 2014).

The proposed structure of the questionnaire included 56 items to measure the study constructs. Then, the content validity was examined by a panel comprising of experts, namely four professors and four doctoral students in Business School, Abu Dhabi University, who were requested to complete the questionnaire and, at the same time, comment on its content. The collected comments resulted in some amendments in content and length of the questions to make it clear and relevant to the hospitality industry. Then measures were revised and modified based on the panel feedbacks to ensure that it met the standards (Wright & Marsden, 2010) and the consistency.

Similarly, to previous studies, a pilot test is essential and was conducted to purify, identify and eliminate any potential problems of the current study questionnaire. It was then conducted with 20 valid respondents randomly selected from the hotel industry.

The pilot study aims mainly at ensuring the phrasing is clear, the language

is used correctly, it is free of vague questions, questions are consistent, and the overall presentation is appropriate for the UAE setting. The respondents completed the recommended questionnaire and were then invited to participate in a one-on-one interview. The researcher then had the option to acquire further relevant questions to extract further information with minimal uncertainty. After the comments were collected, some adjustments were made to the questionnaire's structure and length in order to remove certain items that were duplicated in the original. It also gives the chance to probe for and retrieve the information that is necessary (Wright & Marsden, 2010). Overall, the original format of the proposed questionnaire was adjusted so that the final format became more friendly reading. The responses obtained from the pilot study are analyzed in Chapter 4.

The pilot study was used to duplicate the main study. This required collecting and analyzing data on a set of variables in a systematic and organized manner. This procedure allowed the researcher to respond to the research questions and assess the study's results. Because data is properly defined and precise, a structured data gathering method is required to verify that judgments based on the findings are valid (Cooper & Schindler, 2008) for a baseline in which to measure and indicate areas of improvement. It is also essential to maintain the integrity of research by collecting accurate data (Zikmund et al., 2010). To limit the risk of errors, this entails the selection of the right data collection techniques and instruments, as well as explaining instructions for their usage (Sekaran & Bougie, 2010).

3.4.4 Comparison between Primary and Secondary Data

Primary data have been employed in this study due to a lack of sufficient secondary data. Primary data collection approaches include personal, phone call, or technology-based interviews, questionnaires (mailed, online, or administered in person), observation, focus groups, and experimentation (Sekaran & Bougie, 2010). An online survey was used to collect data for this study. Primary data from online surveys are considered reliable for replication of procedures and verification of results due to the popularity of the data collection strategy and processing methodologies (Cooper & Schindler, 2008). The data was expected to have up-to-date information that directly addressed the research topics.

3.4.5 Survey Questionnaire

While online questionnaires are a well known technique of collecting data, they may have a lower response rate than traditional surveys based on papers (Kwak & Radler, 2002). To mitigate non-response bias, the researcher had double the number of online questionnaires to assure the collection of a substantial sample (Dolnicar, Grün, & Leisch, 2016). To decrease the non-response rate, respondents were assured anonymity, secrecy, and sufficient time to react. According to Frohlich (2002), a response rate of between 30 and 35 percent is regarded adequate for generalization. For generalizability, a minimum returned sample size of 119 was recommended by Bartlett, Kotrlich, and Higgins (2001). The online questionnaire was approved by Abu Dhabi University's Institutional Review Board for Human Subjects Research (IRB) (Appendix A).

3.4.6 Questionnaire Design and Instrument Development

The questionnaire in Appendix B consisted of two main sections. Section A includes information about the respondents and their characteristics as well as the organization information. Section B is divided into five subsections which represent the study factors. Section one consists of twenty-seven questions, which are used to collect data for measurement items of ITC. Section two consists of twelve questions, which are used to collect the measurement items for sustainability practices. The third section consists of seven questions, which are used to collect the measurement items for service quality. Followed by five questions for measurement items of organizational performance in section four and another five questions in section five to collect the measurement items for the top management support. There are fifty six measurement items in total which are measured on a five-point Likert scale; where value “1” represents a very low degree of agreement, and value “5” represents a very high degree of agreement. Lastly, in section six, the demographic data are collected.

The aforementioned hypotheses/models were investigated in this study utilizing a dataset derived from a questionnaire survey (see Table 3.1). This section discusses the process of developing measurement items for the model constructs as well as the design of the questionnaire. Along with the demographic data, the model constructs are referred to as IT capabilities (ITC), sustainability practices (SP), service quality (SQ), top management support (TMS), and organizational performance (OP). A survey was created using research constructs modified from prior studies to act as

the primary data gathering instrument in the investigation. These questionnaires, which included closed-ended questions with demonstrated validity and reliability, were delivered to hotels in the United Arab Emirates. The original questionnaire was written in English and then meticulously translated into Arabic. As a result, a back translation was undertaken, a method that two bilingual specialists used extensively to confirm the accuracy of the translation in a cross-cultural survey (Brislin, 1980).

3.4.6.1 IT capabilities (ITC)

The 27-item scale utilized for ITC in this study was developed from the work of Byrd and Turner (2001), and it was later modified and applied by Fink (2011). The items invited managers to respond regarding the capabilities of IT infrastructure and IT human resources in their hotel. Sample items are “The IT unit provides a wide range of security and risk management services (security policies, disaster planning, firewalls),” and “The IT personnel are self-directed and proactive.”

3.4.6.2 Sustainability practices (SP)

The 12-items scale utilized for SP in this study was designed by Bansal (2005). The items invited managers to respond regarding knowledge of sustainability practices that are initiated on their hotels including environmental, social and economic aspects. Sample items for SP include the following sample items: “Our hotel minimizes the environmental consequences of products and services,” and “Our hotel is ensuring the health and safety of employees.”

3.4.6.3 Service quality (SQ)

The SQ was measured using a seven-item scale developed by Tang (2016) which has been extensively explained in the literature on hospitality (Majid, Yasir, Yousaf, & Qudratullah, 2019). The sample item includes the following: “Our hotel usually generates new service ideas,” and “Our hotel usually creates better service procedures.”

3.4.6.4 Top management support (TMS)

TMS was measured using the five items from Byrd and Davidson (2003). Sample items for TMS includes the following: the management team “cultivates information technology project champions” and “facilitates technology transfer throughout my hotel.”

3.4.6.5 Organizational performance (OP)

To measure the OP, this study used five items scale from Moorman and Rust (1999) which referred to market share, sales growth, revenue, profitability, and overall performance. It consists of five items to measure this dependent variable. This scale was adapted recently by several studies (e.g., Queiroz et al. 2018) which was measured through self-reported questions based on the managers’ perceptions of performance relative to competitors since the business unit is analyzed in this study.

The validity of a questionnaire is determined by its content validity and reliability (Li, Rao, Ragu-Nathan, & Ragu-Nathan, 2005). The term "content validity" refers to the examination of the relationship between the measurement items to be included in a construct and the construct's conceptual description (Li et

al., 2005). The term "reliability" relates to the degree to which measuring items are error-free, allowing for reliable findings (Li et al., 2005). To increase the validity of the questionnaire, we employ the following two steps: 1) a pilot study; and 2) translation and reversal. The questionnaire was available in both English and Arabic languages. The questionnaire was translated into Arabic for non-English speakers in order to target the broadest population of hotel employees in the UAE. Back-translation was used to guarantee the translation's correctness. Appendix C contains the final questionnaire.

Table 3.1 Measurement items with sources

IT capabilities = 27 items			
No	Abbreviation	Item	Sources
		Relative to other hotels in your industry, please evaluate your hotel's IT capabilities in the following area on a scale of 1–5 (1: Strongly disagree; 5: Strongly agree)	
1.	ITC1	The IT unit provides a wide range of channel management services (electronic channel to the customer or partner to support multiple applications, such as point of sale, Web sites, call centers, mobile computing)	Byrd and Turner (2001); Fink (2011); Fink and Neumann (2007); and Weill, Subramani, and Broadbent (2002)
2.	ITC2	The IT unit provides a wide range of security and risk management services (security policies, disaster planning, firewalls)	
3.	ITC3	The IT unit provides a wide range of communication services (network services, broadband services, Intranet capabilities, Extranet capabilities, groupware)	
4.	ITC4	The IT unit provides a wide range of data management services (key data independent of applications, centralized data warehouse, data management consultancy, storage area networks, knowledge management)	
5.	ITC5	The IT unit provides a wide range of application infrastructure services (centralized management of applications, middleware, mobile and wireless applications, ASP, workflow applications, payment transaction processing)	
6.	ITC6	The IT unit provides a wide range of IT facilities management services (large-scale processing/mainframe, server farms,	

		common systems development environment)	
7.	ITC7	The IT unit provides a wide range of IT management services (IS planning, investment and monitoring, IS project management, negotiations with suppliers and outsourcees, service level agreements)	
8.	ITC8	The IT unit provides a wide range of IT architecture and standards services (specify and enforce architectures and standards for: technologies, communications, data, applications, and work)	
9.	ITC9	The IT unit provides a wide range of IT education services (training in the use of IT, management education for generating value from IT use)	
10.	ITC10	The IT unit provides a wide range of IT research and development (R&D) services (identify and test new technologies for business purposes, evaluate proposals for new IS applications)	
11.	ITC11	The IT personnel are skilled in multiple structured programming, CASE methods, or tools	
12.	ITC12	The IT personnel are skilled in distributed processing or distributed computing	
13.	ITC13	The IT personnel are skilled in network management and maintenance	
14.	ITC14	The IT personnel are skilled in developing Web-based applications	
15.	ITC15	The IT personnel are skilled in data warehousing, mining, or marts	
16.	ITC16	The IT personnel are self-directed and proactive	
17.	ITC17	The IT personnel have the ability to plan, organize, and lead	

		projects	
18.	ITC18	The IT personnel have the ability to plan and execute work in a collective environment	Service Quality - Service Innovation and Improvement = 7 items
19.	ITC19	The IT personnel work well in cross-functional teams addressing business problems	
20.	ITC20	The IT personnel are cross-trained to support other IT services outside their primary knowledge domain	
21.	ITC21	The IT personnel are knowledgeable about the key success factors that must go right if the company is to succeed.	
22.	ITC22	The IT personnel are encouraged to learn new information technologies	
23.	ITC23	The IT personnel closely follow the trends in current information technologies	
24.	ITC24	The strategies of the IT unit and the company's strategies are well aligned	
25.	ITC25	The IT personnel understand the company's policies and plans	
26.	ITC26	The IT personnel are able to interpret business problems and develop appropriate technical solutions	
27.	ITC27	The IT personnel are knowledgeable about business functions	
Service Quality - Service Innovation and Improvement = 7 items			
No	Abbreviation	Item	Source
		Relative to other hotels in your industry, please evaluate your hotel's service quality in responding to the following on a 1–5 scale (1: Strongly disagree; 5: Strongly agree)	
28.	SQ1	Our hotel usually generates new service ideas.	Tang (2016)

29.	SQ2	Our hotel usually implements new service ideas.	
30.	SQ3	Our hotel usually finds new ways to better serve our customers.	
31.	SQ4	Our hotel usually creates better service procedures.	
32.	SQ5	We are always working to improve the service we give to customers.	
33.	SQ6	We have specific ideas about how to improve the service we give to customers.	
34.	SQ7	We often make suggestions about how to improve customer service in our hotel.	
Sustainability Practices = 12 items			
No	Abbreviation	Item	Sources
		Relative to major competitors in hotel industry, please evaluate your hotel's sustainability practices in which of these are improved/developed during the past three years in responding to the following on a 1–5 scale (1: Strongly disagree; 5: Strongly agree)	
35.	SP1	Our hotel is promoting sustainable resources management (e.g. renewable energy)	Bansal (2005); Steurer et al. (2005); Torugsa et al. (2013); and Wijethilake (2017)
36.	SP2	Our hotel is reducing emissions into the air, water and ground	
37.	SP3	Our hotel is promoting and preserving biodiversity	
38.	SP4	Our hotel is minimizing the environmental consequences of products and services	

39.	SP5	Our hotel is handling or storing toxic waste responsibly	
40.	SP6	Our hotel is ensuring the health and safety of employees	
41.	SP7	Our hotel is investing in human capital development	
42.	SP8	Our hotel is promoting ethical behavior and protecting human rights	
43.	SP9	Our hotel is avoiding controversial, corrupt, or cartel activities	
44.	SP10	Our hotel is promoting sustainability innovations	
45.	SP11	Our hotel is developing sustainability business processes	
46.	SP12	Our hotel engages in sustainability learning and knowledge management	
Organizational Performance = 5 items			
No	Abbreviation	Item	Sources
		For the past 3 years, to what extent do the following statements reflect the current situation in your hotel by following a 1–5 scale (1: Strongly disagree; 5: Strongly agree)?	Lee and Choi (2003); Moorman and Rust's (1999); and Queiroz et al. (2018)
47.	OP1	Increase market share.	
48.	OP2	Increase customer satisfaction.	
49.	OP3	Increase profit.	

50.	OP4	Enhance business brand and image.	
51.	OP5	Enhance customer loyalty.	
Top management support = 5 items			
No	Abbreviation	Item	Sources
		The top management in our hotel in the past three years in responding to the following on a 1–5 scale (1: Not supportive; 5: Very supportive)	
52.	TMS1	show public and unwavering support for sustainability	Fairfield et al. (2011); Lechler, Canzaniello, and Hartmann (2019); Maletič et al. (2014); and Meqdadi, Johnsen, and Johnsen (2019)
53.	TMS2	launch initiatives to improve sustainability	
54.	TMS3	ensure the implementation of sustainability aspects	
55.	TMS4	integrate the sustainability with the company vision and strategy	
56.	TMS5	establish a sustainability-centered culture	

3.4.8 Data Analysis Technique

The reliability and validity of the study's constructs were assessed in the measurement model. Then, direct and indirect relationships among the variables were examined in the structural model. This study uses Statistical Package for Social Sciences (SPSS) Statistics 24.0 to analyze the data and test the hypotheses. The SEM technique is used in this study to test and validate the proposed research model and its hypotheses due to its suitability as a statistical analysis technique that has been a widely accepted paradigm to address several problems of regression models, and its capabilities in measurement error and correction for attenuation (Jaccard & Wan, 1996).

First, the measurement model was conducted through confirming the internal reliability of items, the convergent validity and discriminant validity of the indicators, which is a measurement of the latent variables. Then, following the study of Real, Leal, and Roldán (2006), the structural model was validated in order to confirm the point up to which the causal relationships are consistent with the available data.

With regard to the measurement model, all the indicators should meet the individual reliability criterion of exceeding the threshold of 0.707 as per suggested by Hair Jr, Hult, Ringle, and Sarstedt (2014). Hence, the individual item reliability is adequate (Carmines & Zeller, 1979). Similarly, all the constructs are considered as reliable if their values for composite reliability (qc) are higher than, or very close to, 0.8 (Nunnally, 1978). Moreover, all constructs should satisfy the condition of

having an AVE above 0.5 (Fornell & Larcker, 1981). The discriminant validity can be guaranteed when the square root of the AVE of each construct is greater than the correlation of each construct with the other constructs. STD should be less than half than the mean: to judge that the respondent understands the question (each factor, reliability).

3.5 Pilot Testing

A pilot test was conducted to test the reliability and validity as well as strength of the instrumentation before the main study. As such, the pilot test subjects must include subjects from the intended sample population (Kennedy et al., 2011). A pilot test was employed in this study to eliminate any potential faults or flaws in the questionnaire to be used for the main study. For the pilot test in this research, the pilot test was conducted in a sample size of 10 percent of that planned for the main study, as suggested by Connelly (2008), which were then excluded from the main study sample (Albers & Lakens, 2018). The pilot sample size, on the other hand, does not have a straightforward solution (Anderson, Kelley, & Maxwell, 2017). It is determined by a number of criteria, covering the type of study (Viglia & Dolnicar, 2020). Ultimately, researchers propose that the sample size for a pilot study may consist of 10 to 30 responses (Hill, 1998; Julious, 2005). Therefore, a minimum of 10 responses was required for a valid pilot test; 20 valid responses were received during the pilot test.

In general, regression analysis cannot be used on small samples. Cronbach's alpha coefficients for each concept were determined through reliability testing.

According to Field (2013), variables in social research should have a Cronbach's alpha score of between 0.7 and 0.8. The reliability test is not enough though as all items for each variable should be tested for inter-item correlation. The correlation matrix of the measured variables was proposed by Tabachnick and Fidell (2013) due to the weakness of inter-item correlations in social research. The preferred strength is the threshold of 0.3 (absolute value) or higher based on the scale of Cohen (1992) and Field (2013). This ensures that each item contributes to the matrix's relationship and potential factor solution. This study is necessary to identify key dimensions that might jeopardize further studies of the structure and criteria variables. Additionally, it permits the comprehension of the variable structure and the establishment of connections between them (Field, 2013). This approach confirms the validity and reliability of the constructs to apply replication in any research project (Brandt et al., 2014; Maniadis, Tufano, & List, 2017). Cronbach's alpha and inter-item correlation scores were good in the pilot study.

This study applied the Exploratory Factor Analysis (EFA) method to determine the measurement models. EFA is widely known as a collection of multivariate statistical approaches for data reduction and also for gaining a more concise knowledge of measured variables by determining the number and kind of common factors required to account for observed correlation patterns (Fabrigar et al., 1999). There are several methods for determining the underlying variables, but the most often utilized is principal component analysis. This study employs EFA through the use of SPSS 24.0 software and principal component analysis. Finally,

EFA (using the Varimax rotation) was conducted to determine if the measurement items represented the intended constructs.

3.6 Data Examination and Preparation

The survey responses were reviewed and modified, which supported the reduction of making errors and omissions and achieve a minimum standard of data quality (Cooper & Schindler, 2008). The responses that are incomplete were detected, discarded, and removed from the analysis. Non-response bias may cause to exclude important data.

3.7 Model Specification

A measurement model that demonstrates the link between the latent variables and their indicators is a key component of SEM. A psychometric theory, according to Hagel (2014), requires unidimensionality, and Ziegler and Hagemann (2015) claim that this methodology is equivalent to evaluating item dimensionality. Hence CFA was used to choose the scale items that reflect a common, latent construct. By extracting factors, specifications as per the sequence of first and second model were measured to discriminate between the initial variables (Russell, 2002) so that inter-correlations of factors are considered. This causes a decrease in the number of items used and allows latent variables to be built with fewer factors. This analysis is necessary in order to discover significant dimensions that could jeopardize the structure and criteria variables in the following investigations. The analytical framework of CFA provides an appropriate means of assessing the

soundness of measurement models for the theoretical constructs (Chin & Todd, 1995). Upon estimating a measurement model, the CFA method provides the fullest evidence of measurement efficacy (Bentler, 1989). The CFA consists of two stages of analysis: item purification and assessment of measurement models. The measurement model was built using confirmatory factor analysis (CFA) with convergent and discriminant validity.

3.8 Convergent Validity

Convergent validity refers to the utilization of a collection of items to examine a single construct (Kline, 2010). Additionally, it analyses item dimensionality to represent a common latent variable (Ziegler & Hagemann, 2015) that accounts for a significant amount of the variation in latent factors (Wang et al., 2015). In refer to Fornell and Larcker (1981), the order constructs' convergent validity must be checked using the extracted average variance (AVE). This statistic compares the amount of variation holded by a concept to the degree of variation produced by error levels in measurement. Convergence is achieved at the construct level when the AVE of each latent construct exceeds 0.50 ($AVE > 0.50$). Hair et al. (2010) asserted to calculate factor loading to ensure construct-level convergent validity. Increased factor loadings or factor loadings more than 0.50 ($\lambda > 0.50$) imply good convergent validity.

It is critical to assess the instrument to confirm that the construct's convergent validity and model fit are appropriate. To evaluate the instrument, validity tests on first, second, third, fourth and fifth order models were undertaken

(Cooper & Schindler, 2008). Validity refers to an instrument's ability to accurately assess conceptual and operational terms (Guion, 1980). Cooper and Schindler (2008) recommended that the instrument tool should be responsive to changing conditions and timeframes in order to guarantee that tool is meaningful.

3.9 Tests for Model Fit

An assessment of model fit was used to further measure and validate the measurement adequacy of first, second, third, fourth and fifth order models. Several fit indices can be used to evaluate the model fit such as the chi-square (χ^2) index and degree of freedom (df) (Bollen, 1990; Byrne, 2010). It is generally agreed that testing any structural equation models require four common fit indices as minimum (Byrne, 2010; Hooper, Coughlan, & Mullen, 2008). Some of these recommended indices can be Normed-fit Index (NFI), Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA) (Byrne, 2010). In this study, the fit indices (χ^2/df), $\Delta\chi^2$ (Δdf), GFI, NFI, TLI CFI, and RMSEA were used to assess the model, due to their lower sensitivity to sample size (Bollen, 1990; Kline, 2010). These indices of fit jointly measure the level to which the data match the theoretical model (Weston & Gore, 2006). These fit indices provide a range of approaches to the assessment of the fit of the measurement model (Hair, et al., 2010). Table 3.2 provides a description and the rationale for the use of these fit indices.

Dawes, Faulkner, and Sharp (1998) and Greenspoon and Saklofske (1998) found that 0.8 is an appropriate GFI cut-off level for complicated models with high

sample sizes. According to Blunch (2008), only CFIs less than 0.8 should be carefully evaluated for model change. A GFI, CFI, and IFI closer to 1 offers a better fit of the model to the data. The closer χ^2/df , SRMR, and RMSEA are to zero, the better (Hooper, et al., 2008). Finally, it is not recommended to remove additional elements in order to improve model fit at the price of theoretical integrity (Hair et al., 2010). Table 3.3, describes the required cutoff levels for the indices along with the sources.

Large sample sizes and the number of items in theoretical models have an effect on the model fit indices. It is questionable when it comes to the fit indices' criteria, which can be used as a broad guideline rather than a confirmation of the model fit (Barrett, 2007; Byrne, 2010; Hair et al., 2010; Kline, 2010). Hair et al. (2010) reported that it is not feasible to apply a single set of cutoff rules to all SEM models regardless of their complexity or sample size. In particular, simple models and smaller sample sizes should apply stricter model indices cut-offs than larger and more complex models. This condition should be considered when the sample size is greater than 250 responses and measurement items higher than 30 (Hair et al., 2010). Overall, this is a fundamental step in SEM modeling that lays the groundwork for selecting one model over another. The model fit indices for the model in this study are calculated and presented in Chapter 4.

Table 3.2 Summary of the measurement fit indices

Fit Indices	Description	Rationale for Using Measure
CMIN (minimum discrepancy) or Chi-Square (χ^2)	A basic measure in SEM to quantify the discrepancies of the observed covariance matrices in comparison to the estimated ones of the posited model to where the difference is the ratio of χ^2 to the degrees of freedom (Byrne, 2010; Hair, et al., 2010).	Relative χ^2 (χ^2/df)(Normed χ^2) reduces the effect of sample size on the analysis (Wheaton, Muthen, Alwin, & Summers, 1977) to lower χ^2 inflation in large sample sizes. Relative χ^2 (χ^2/df), namely normed χ^2 , reduces the effect of sample size in the analysis (Wheaton et al., 1977).
Goodness-of-fit (GFI) and adjusted goodness of fit (AGFI)	An index can replace the measure of χ^2 which has range between 0 and 1. AGFI is the updated version of GFI in accordance with the degrees of freedom. Both indices, however, cannot be utilized independently due to their sensitivity to sample size (Hooper, Coughlan, & Mullen, 2008).	Commonly used to compare the findings of this study to those of previous investigations (Gefen et al., 2011; Hooper et al., 2008). Both indices have a long history and are frequently utilized in information systems and other fields.
Normed Fit Index (NFI)	An assessment to compare the model by differentiating the χ^2 of the null model by Bentler and Bonnet (1980). It confirms that all measured variables are uncorrelated.	Widely used in complicated models (Bentler, 1990; Kline, 2010; Tabachnick & Fidell, 2007).
Tucker–Lewis Index (TLI)	An incremental fit index (Non-Normed Fit Index (NNFI)) to overcome the drawbacks of the Normed Fit Index (NFI) (Anderson & Gerbing, 1988).	Good to use because it is not linked to sample size (Byrne, 2010; Hu & Bentler, 1999).
Comparative Fit Index (CFI)	A second version of the NFI (Byrne, 2010) was developed by Bentler (1990) which	Commonly index used in SEM software and has widely known because it is not easily

	solves the issues occur with smaller sample size (Bentler, 1990; Tabachnick & Fidell, 2007). This fit removes the correlation between all variables and calculate the difference of the target model index with an independent model index (Bentler, 1990; Kline, 2010).	affected by sample sizes (Tabachnick & Fidell (2007).
Root Mean Square Error of Approximation (RMSEA)	An estimation of the error that occurs when the model fails to fit a degree of freedom in the population (Gefen et al., 2011). It is a critical criterion in covariance structure modeling (Byrne, 2010) since it helps assess how well population covariance fits into models with unknown parameter values.	This indicator is useful due to its sensitivity to the number of factors used in the model (Gefen et al., 2011; Hooper et al., 2008). When maximum likelihood (ML) is used as the estimation method, it can be consistent. It has the ability to detect model misspecifications and provide feedback on the model's quality (Byrne, 2010).

**Table 3.3 Summary of the observed model fit indices and
acceptable threshold value for this study**

Fit Indices	Recommended Threshold Value	Sources
χ^2 (used when sample size is 100 to 200)	< 0.50 Acceptable < 0.30 Good	Kline (2005); Tabachnick and Fidell (2007); Ullman (2001)
Relative χ^2 ($\chi^2/\text{d.f.}$) (used when sample size is more than 200)	< 2.0 Superior < 3.0 Good < 5.0 Acceptable	Kline (2005); Tabachnick and Fidell (2007); Ullman (2001) Bentler (1990); Marsh et al. (2004); Schumacker and Lomax (2004); Wheaton et al. (1977)
GFI	< 2.0 Superior < 3.0 Good < 5.0 Acceptable	Kline (2005); Marsh et al. (2004); Tabachnick and Fidell (2007); Ullman (2001) Bentler (1990); Schumacker and Lomax (2004); Wheaton et al. (1977)
CFI	> 0.80 Good	Bentler (1990); Forza and

	> 0.90 Tolerable	Filippini (1998); Hatcher (1994)
	> 0.90 Good	Hu and Bentler (1999)
	> 0.95 Superior	
NFI	> 0.80 Good	Bentler and Bonnet (1980);
	> 0.80 Good	Forza and Filippini (1998);
	> 0.90 Superior	Greenspoon and Saklofske (1998)
TLI	> 0.80 Good	Bentler (1990); Hair et al.
	> 0.90 Tolerable	(2010); Byrne (2010)
	> 0.95 Superior	Hu and Bentler (1999);
		Tabachnick and Fidell (2007)
Root Mean Square	< 0.08 Good	Browne and Cudeck (1993);
Error of Approximation	< 0.06 Tolerable	Byrne (2010); Hu and Bentler
(RMSEA)	< 0.05 Superior	(1999); MacCallum et al.
		(1996); Steiger (1998)

Note: GFI=goodness of fit index; CFI=comparative fit index; NFI=Normed-fit Index; TLI=Tucker–Lewis Index (TLI); RMSEA=root mean square error approximation.

3.10 Discriminant Validity

Discriminant validity is used to evaluate the connections between latent variables in a measurement model. It refers to the degree to which the constructs included inside a single instrument are truly unique. Several studies (Hagell, 2014; Ziegler & Hagemann, 2015) recommended that unidimensionality of a construct must be determined prior to performing a set of multidimensionality model tests. The construct's unidimensionality is critical since findings must be acquired and preferably reproduced for the structural model before the nomological items can be defined and understood. Additionally, it provides a comprehension of the variables' structure and the assessment of their relationships (Field, 2013). As a result, correlations between dimensions were examined in this model and dataset. All constructs in this study were subjected to a validity test. CFA was used to determine the instrument's validity, or the degree of one factor is genuinely different from other factors. Fornell and Larcker (1981) contended that discriminant validity requires that the AVEs of two latent variables or manifest variables be larger than the square of their correlations (r^2).

3.11 Test of Normality and Outliers

Kurtosis and skew method is commonly used to determine normality (Hair et al., 2010). According to Arbuckle (2003), a crucial requirement for SEM studies of AMOS in particular is that the data must be multivariate normal. Kurtosis refers to the distribution's "peakiness" or "flatness" in comparison to a normal distribution, whereas skew refers to the distribution's balance. A distribution that is

lopsided is said to be skewed. Positive skew occurs when a distribution is moved to the left, whereas negative skew occurs when a distribution is shifted to the right. Kurtosis and skewness values of ± 1 are considered adequate for normalcy (Marcoulides & Hershberger, 1997) and may be accepted at the 0.05 level of significance with a z-statistic is below 5.0 (Bentler & Satorra, 2010). At the 0.05 level of significance, this study utilized SEM-AMOS and kurtosis which are equal to ± 7 (Byrne, 2010) and skew equal to ± 2 (Gravetter & Wallnau, 2014) were deemed normal. This is similar with the findings of Bentler and Satorra (2010), who concluded these results, with a z-statistic equal to 3.476, were strongly indicative of sample normality.

3.12 Structural Equation Model (SEM)

SEM is increasingly being used in the research context of social science, as it established itself as a prominent multivariate approach (Hair et al., 2010). Three distinct techniques are frequently employed in the implementation: confirmatory calculations, competitive modeling, and model creation. These enable investigators to make inferences about a large number of complicated interactions.

SEM was employed to investigate the causal relationship across the factors defined in the study framework model. According to Hardy (2004, p.35):

“When the phenomena of interest are complex and multidimensional, SEM is the only analysis that allows complete and simultaneous tests of all relationships.”

SEM was accepted to be suitable for this study because it evaluates the strength of overall predicted connections among factors in the theoretical model (Byrne, 2010; Schreiber, Nora, Stage, Barlow, & King, 2006; Tomarken & Waller, 2005). This enables investigators to construct more complicated hypotheses (Williams, Gavin, & Hartman, 2004).

The proposed model was validated using a confirmatory modeling technique. According to Kline (2010), a confirmatory modeling method requires the investigator to provide a model and then utilize SEM to assess the possibility of data to suit the model. According to Byrne (2010) and Hair et al. (2010), A good fit to the data does not mean that the suggested model is true, but simply that it is one of several feasible options to accept the model.

The structural model depicts the expected relationships between the variables (Byrne, 2010). The structural model may be used to show the interrelationships between these variables (Hair et al., 2010). The interrelationships (double-edged arrows) between the variables represent the covariance or correlation between them (Byrne, 2010; Kline, 2010). One of the major goals of model evaluation is to determine the goodness-of-fit of the proposed overall structural model to the sample data. Appropriate goodness-of-fit improves the reliability of the suggested study model (Byrne, 2010). However, a perfect fit of the data to the structural model is relatively uncommon in research and almost impossible to achieve (Kline, 2010). As a result, the SEM model-fitting approach includes the word "residual," which refers to the difference between the model's

estimated parameters and the observed data (Byrne, 2010; Hair et al., 2010). Hair et al. (2010) provided a complete "six steps in structural equation modeling" that was used in this work to examine each measurement model theory (how constructs are expressed) and structural model theory (how constructs linked to each other), as seen in Figure 3.3.

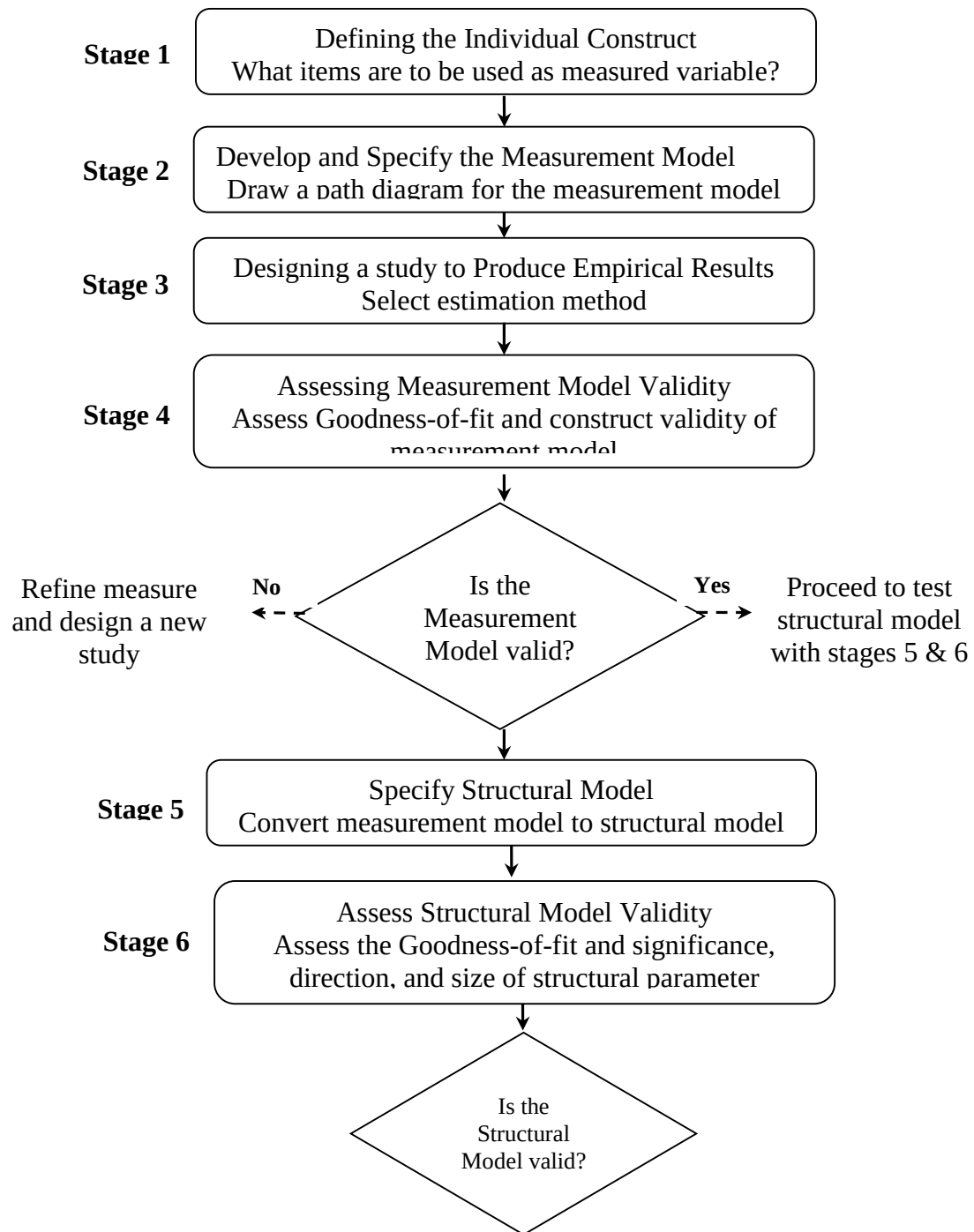


Figure 3.2 Structural equation modeling Stages (Source: Hair et al., 2010)

3.13 Strategies of Measurement Invariance

In order to investigate measurement invariance, multi-group confirmatory factor analysis is one of the most commonly used techniques (Kline, 2010). Conferring with the hypothesized measurement model is examined using confirmatory factor analysis, instead factor analysis based on multi-group confirmatory can be followed to extremely precisely test the measurement model across groups. There are different steps to the calculation of progressive analytic in multi-group CFA. These steps are equivalent to the three stages of invariance requirements that are present: configural, metric, and scalar invariance (Kline, 2010; Vandenberg & Lance, 2000).

CFA may be used to investigate configural invariance by examining the same measurement model individually for each group in order to examine the same measurement model across all groups. By applying the typical criteria suggested by Hu and Bentler (1999), it is possible to assess the fit of the models: robust χ^2 , CFA is lower than 0.90, and RMSEA lower than 0.08. Invariance is supported when the exact measurement model fits the data well between groups, which seems to be the case in most cases.

The second step in the invariance investigation process is to investigate metric invariance by comparing between two nested models, for example, a baseline model and an invariance model, to see whether there is any difference. The baseline model enables for the estimation of factor loadings across different groups to be done with complete freedom. The invariance model requires that the factor

loadings be comparable across all groups in order to be valid. There are two main tests to calculate the differences between the two nested models, the χ^2 difference test (Muthén, 1989) and the Δ CFI (Cheung & Rensvold, 2002; Meade & Lautenschlager, 2004). Particularly, Muthén (1989) observed that a non-significant result of the χ^2 difference test makes the invariance model has more suitable data in comparison with the baseline model because it fits the data equally well and has greater parsimony. However, a significant result of the χ^2 difference test would show that the baseline model is representing the data better than an invariance model, implying that the psychological meanings of the latent components change between groups.

The χ^2 difference test is affecting by a sample size more than the Δ CFI, although it is less susceptible to a lack of invariance than the latter test (Cheung & Rensvold, 2002; Meade & Lautenschlager, 2004). The researchers recommended to use Δ CFI in the simulation studies by evaluating several goodness-of-fit indices (e.g., χ^2 , AIC, RMSEA, and CFI) because it does not depend on model complexity and sample size, and a Δ CFI of less than 0.01 implies invariance in the model's parameters. Any differences between groups are likely to be minor when Δ CFI reveals invariance and the sample size has more than 200 responses, thus further analyses can be performed even if the χ^2 difference test is significant.

In applied settings, full metric invariance, in which the definitions of all latent constructs are similar in groups, is unusual, although it does exist. The presence of partial metric invariance, in which many of the latent constructs have

the similar meanings among groups, may indicate that scalar invariance on those latent constructs should be investigated further.

The final stage in invariance testing is to look for scalar invariance by comparing the latent constructs' means. A similar nested-model comparison method can be used for this phase. The baseline model in this scenario would allow the means to be calculated flexibly across several groups. The invariance paradigm would require that the means of several groups be equivalent.

3.14 Bootstrapping

There is an increasing body of research arguing to apply bootstrapping for analyzing indirect impacts (Bollen & Stine, 1990; Lockwood & MacKinnon, 1998; Preacher & Hayes, 2004). Bootstrapping is a famous technique for estimating and hypothesis testing that includes resampling. The sample is conceived in bootstrapping as a pseudo-population that reflects the larger population from which the sample was taken, and the calculation of sampling distribution of any statistic is equal to the statistic of interest in many resamples of the data set. When running inferential tests using bootstrapping, there is no need to make assumptions regarding the shape of the statistic's sample distribution. Through bootstrapping, the sampling distribution of an indirect impact is calculated by sampling N units with replacement from the initial sample of N units. Nevertheless, bootstrapping has a few disadvantages. First, generating the confidence bounds takes longer than it does with single-sample techniques. However, as computer processing speeds increase, speed is no longer a significant constraint, and several statistical analysis

tools incorporate bootstrapping techniques. Most tools which could not be programmed in the past, are now easy to be programmed (e.g., Lockwood & MacKinnon, 1998; Preacher & Hayes, 2004). As a result, bootstrapping is more possible to apply now than it was previously. Second, bootstrapping produces somewhat different confidence intervals for the same data each time the procedure is done. Although various sets of k bootstrap resamples will produce different estimates, the variance due to random resampling decreases as k rises.

3.15 Conclusion

The research design and data collection strategy are discussed in this chapter. It also discusses data analysis techniques and how the development and pilot testing of an instrument improves data collection efficiency. The research framework is then described in the chapter. The following chapter describes the data collection methods and the procedures to analyze the collected data to answer the research questions and address the objective of the study, as well as the findings are developed.

CHAPTER 4: RESULTS

The data collected in this study include descriptive statistics of both the characteristics of the hotels and the managers as well as information for determining the level of sustainability practices and service quality for the hotels investigated. This chapter describes the results of validation of the measurement models, and the test of the proposed models based on the hypotheses developed in this study. In addition, this study provides findings from quantitative statistical analysis. In this study, measurement models were identified by using exploratory factor analysis (EFA), and then we validated the measurement models using confirmatory factor analysis (CFA). This chapter consists of four main sections, as follows: pilot test results, respondents' profile and descriptive statistics, validation of measurement models and structural model which is developed to test and prove the hypotheses in the research framework.

4.1 Pilot Test

4.2.1 Data Examination

An instrument of fifty-six questions was developed with a five-point Likert scale. The proposed measurement items were examined by a panel comprising of eight people as clarified in the methodology chapter. Item wordings were revised after considering their feedback to check the scrutiny, the appropriateness and

language of the research constructs in the hotel context. Based on their feedback, we then incorporated their comments so that our questionnaire could be improved for readability and clarity. We also altered the original format of our proposed questionnaire so that the final format was more friendly reading. The questionnaire was then ready to be sent for a pilot study.

Conducting a pilot study provided the preliminary information about the reliability and validity of the measurement scales. This instrument was administered via email over three weeks, and 20 responses were received from managers working in the hotel sector across the UAE. Out of 20 participants, 12 were males (60%) and eight females (40%). The age of participants age ranged from 30 to 37 years, and all respondents were managers with average five years of working experience. The data were found normal since skewness and kurtosis were met the acceptable limits of ± 2.0 (Gravetter & Wallnau, 2014). The skewness and kurtosis values of the scale were examined, and the skewness values were between -1.021 to -0.701 while the kurtosis values lay between 1.647 to 0.887. Hence, these results showed that the data set is normally distributed.

4.1.2 Exploratory Factor Analysis (EFA)

An exploratory factor analysis was performed using the SPSS Statistics 24.0 to evaluate if the data had loaded well (Hair et al., 2010).

Factor analysis refers to a set of statistical techniques that can be used to explore or confirm the underlying structure among a set of measurement items so

as to determine those measurement items which tap onto a latent construct (Dyer, Hanges, & Hall, 2005; Hair et al., 2010). Table 4.1 presents those five factor retention criteria that we apply for verifying our model constructs. In Table 4.1, column 2 refers to the minimal requirement for each of our selected criterion.

Table 4.1 Factor Retention Criteria in EFA

Criteria	Requirement	Reference
Significant factor loading	Based on Sample Size	Hair et al. 2010
No cross-loading	Significant factor loading on only one construct	Hair et al. 2010
Item-total correlation	≥ 0.40	Hair et al. 2010

An exploratory factor analysis (EFA) in the SEM analysis was used to confirm the validity of the five constructs. The factor and cross loadings were obtained using the EFA as shown in Table 4.2. As an interdependent technique, EFA is primarily used to define the structure that underlies the variables used in an analysis (Hair et al., 2010). The intent was to discover the structure of the factors for each construct in the model so that its reliability could be examined. The results for the factor loadings were generated using SPSS Statistics 24.0 with the principal component analysis selection supported by a combination of Varimax rotation and Kaiser normalization. All the factor loadings were above 0.60 and significant at $p < 0.001$.

Table 4.2 Summary of pilot test

Variables	λ	Item-total correlation	α
IT capabilities	0.656 – 0.882	0.653 – 0.750	0.863
Sustainability practices	0.726 – 0.796	0.533 – 0.764	0.918
Service quality	0.613 – 0.912	0.642 – 0.721	0.853
Top management support	0.825 – 0.869	0.592 – 0.706	0.758
Organizational performance	0.718 – 0.791	0.706 – 0.792	0.926

Note: All factor loadings (λ) are significant at ($p < 0.01$)

The pilot findings indicated that the validity of the questionnaire and factors possessed adequate based on convergent and discriminant. Construct inter-correlations confirmed that there were no issues of discriminant validity. These analyses corroborated the measure's reliability and suggested that the instrument was consistent and reliable enough to be used in the next stage. As a result, the pilot test indicated that the measurement items and questionnaire instrument would be appropriate for use in the main study.

4.2 Main Study

The confirmatory factor analysis (CFA) was performed using SPSS Statistics 24.0 to confirm the extent to which the hypothesized factor structure was fit to the observed data (Gallagher, Ryan, Byrne, Kennedy, & O Mahony, 2008; Hair et al., 2010). Once the data were tested for validity and reliability using

Cronbach's alpha and CFA, the data were tested for normal distribution using both univariate and multivariate techniques consistent with SEM requirements.

The results of the construct descriptive statistics for the five latent constructs are listed in Table 4.3. The results show mean scores that range between slightly above average ($M = 3.82$, $SD = 0.68$) to considerably above average ($M = 3.97$, $SD = 0.85$). The results show that respondents had the highest impact on the service quality trait ($M = 3.97$, $SD = 0.85$). The results also show that respondents with the organizational performance trait had the next highest mean score ($M = 3.95$, $SD = 0.71$). These results are closely followed by respondents self-reporting as having the sustainability practices trait ($M = 3.89$, $SD = 0.75$) and top management support ($M = 3.84$, $SD = 0.85$). The results of respondents with IT capabilities shows above average mean score with the lowest standard deviation ($M = 3.82$, $SD = 0.68$). Overall, the results show that all of the respondents related to IT capabilities, sustainability practices, service quality, top management support and organizational performance as having mean scores that were above average ($M = 3.82$).

Table 4.3 presents the correlations between all the study's constructs by calculating the measurements of internal reliabilities of the predictor and dependent variables, means, and standard deviations. The data for outliers, multicollinearity, normality, and homoscedasticity are analyzed. As shown in Table 4.1, the ITC is positively correlated with SP ($r = 0.43$, $p < 0.001$), SQ ($r = 0.56$, $p < 0.001$), TMS ($r = 0.39$, $p < 0.001$) and OP ($r = 0.44$, $p < 0.001$), respectively, and are compatible. Hence, we can further analyze our hypotheses as these correlations are supported. As suggested

by Hair et al. (2010), the value of the sample adequacy indicator (KMO: Kaiser-Meyer-Olkin) was 0.85 which was much more from the minimum threshold of 0.5 and this approved the adequacy of the sample size.

Table 4.3 Descriptive statistics, reliabilities and correlation matrix

	Mean	SD	AVE	CR	1	2	3	4	5	6	7	8	9	10
1. Gender	1.3	0.46												
2. Age	2.24	0.77			-0.04									
3. Education	2.15	0.68			-0.01	0.19**								
4. Tenure	1.99	0.75			0.22**	0.41**	0.13**							
5. Firm size	2.06	0.90			0.07	0.01	0.02	0.03						
6. ITC	3.82	0.68	0.501	0.933	0.02	0.03	0.04	0.08	0.05	(0.93)				
7. SP	3.89	0.75	0.560	0.910	0.03	0.08	0.03	0.13**	0.06	0.43**	(0.91)			
8. SQ	3.97	0.71	0.564	0.886	0.07	0.06	0.01	0.21**	0.01	0.56**	0.53**	(0.88)		
9. TMS	3.84	0.85	0.645	0.901	0.02	0.15**	0.03	0.22**	0.08	0.39**	0.52**	0.47**	(0.90)	
10. OP	3.95	0.71	0.538	.853	0.11**	0.13**	0.01	0.26**	0.02	0.44**	0.46**	0.61**	0.52**	(0.85)

Note: N= 507; p < 0.05; *p < 0.01; ** p < 0.001; AVE= average variance extracted; CR= composite reliability

Cronbach's α values appear in parentheses on the diagonal

4.2.1 Data Analysis

4.2.2 Analysis of Construct Validity and Reliability

Figure 4.1 depicts the measurement model that represents the basis that was used to evaluate the relationships of the five variables. The measurement model was used as the basis on which to assess the validity and reliability of the constructs before the hypotheses were tested. It also serves as the foundation for the structural model as it exhibits the relationships between the unobserved variables that are also known as the latent variables (Hair et al., 2010).

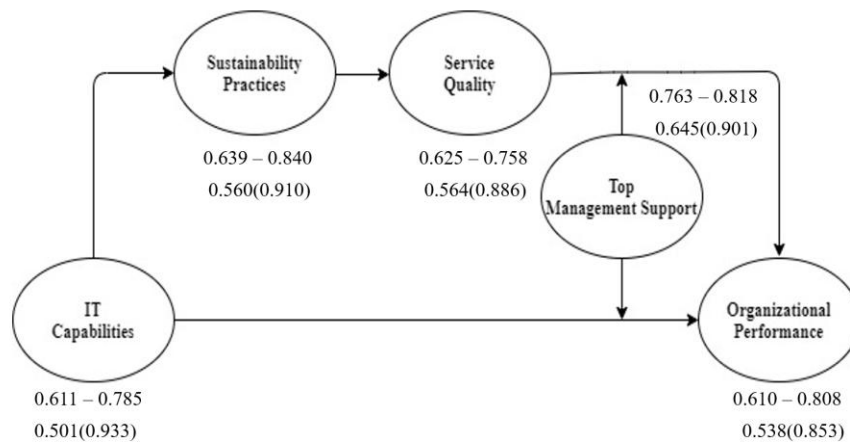


Figure 4.1 Measurement model

The construct reliability of the non-observable/latent constructs was evaluated using Cronbach's alpha based on the questions used for each construct. The Cronbach's alpha was generated using the SPSS Statistics 24.0 software application. As shown in Table 4.5, all constructs had 0.8 and above values suggesting that strong construct reliability existed for the research model.

According to Hair et al. (2010), Cronbach's alpha values that are within the range of 0.7 and above are considered reliable within the social science research arena. Consistent with that standard, the construct reliability for this model was considered as having acceptable reliability to support the study.

4.2.3 Measurement Model

The threshold matrix reported by Hu and Bentler (1999) was used to test the measurement model through convergent and discriminant validity. Following the guidelines of Joreskog and Sorbom (1993), structural equation modeling (SEM) was applied through SPSS 24.0 software to examine constructs' reliability and validity through confirmatory factor analysis (CFAs) and confirm the findings (Hair Jr et al., 2014). Additionally, the mediating and moderating impact were tested. The five constructs were tested by comparing the baseline model with four alternative models using CFAs, which included ITC, SP, SQ, TMS and OP. The fit indices can be classified from overall, comparative, and parsimony perspectives (Hair et al., 2010). Hair et al. (2010) recommended the use of multiple fit indices that represented normed chi-square (calculated using χ^2/df), absolute fit, incremental fit, goodness of fit, and badness of fit. Bowen and Guo (2011) also supported the use of multiple fit indices but cautioned that the model fit should be interpreted as confirming the model consistency with the collected data. Consistent with that recommendation, normed chi-square, comparative fit index (CFI), goodness of fit index (GFI), adjusted goodness of fit index (AGF1), normed fit index (NFI), and root mean square error of approximation (RMSEA) were used to

evaluate the goodness of fit of the structural model for the study.

As indicated in Table 4.4, we developed five models associated with different hypothesized factors and represented the constructs as latent variables with items as indicators of each latent variables. Only the output of the five-factor model resulted to confirm a good fit to the data (see Table 4.4) as $\chi^2/df=973.399/620=1.570$, (threshold matrix: below 2), $p < 0.001$; GFI=0.909 (threshold matrix: higher than 0.90); NFI=0.918 (threshold matrix: higher than 0.90); CFI=0.968 (threshold matrix: higher than 0.90); TLI=0.964 (threshold matrix: higher than 0.90); and RMSEA=0.034 (threshold matrix: below 0.05). The one-factor, two-factor, three-factor and four-factor models had not acceptable indices and reflected discriminant validity (Table 4.4).

The factor loadings depicted in Table 4.5 were in a measurement model that was used as a basis for evaluating how the data fit the research model. According to Hair et al. (2010), the evaluation of the model fit is an important step in structural equation modeling (SEM) as it allows a researcher to test how the theory being developed can fit reality that is represented by the data in the sample. While SEM does not have a single method of testing statistics to best describe the predictive power of a model, different measures have been developed to assess the fitness of a model (Bowen & Guo, 2012; Gallagher et al., 2008; Hair et al., 2010).

As a theory-driven technique, CFA is widely used in SEM applications to confirm the extent to which the hypothesized factor structure is a fit to the observed data (Hair et al., 2010). Bowen and Guo (2012) later supported the validity of the

CFA but cautioned that researchers should limit its application to test the adequacy of the defined model. The factor loadings for the five constructs are listed in Table 4.5 and all factor loadings round up to a minimum of 0.5 and above. All factor loadings (λ) were statistically significant and higher than 0.840 (threshold matrix: higher than 0.70), and all observed question items had significant factor loadings ($p < 0.01$) on their related variable, as indicated in Table 4.5. Furthermore, the average variance was calculated (threshold matrix AVE: higher than 0.50) and composite reliability (threshold CR: higher than 0.80), combined with relatively high loadings to provide an acceptable convergent validity (Table 4.5). Convergent validity affirms that the scale used for the model is correlated with other similar scales (Bowen & Guo, 2012; Hair et al., 2010). The results confirmed that the construct reliability and validity were acceptable, and that the measurement model was adequate for the study (Hair et al., 2010). The confirmatory assessment paved the way for the analysis of the descriptive statistics for the non-observed/latent constructs. Hence, the proposed model showed acceptable internal and external qualities, suitable for path analysis.

Table 4.4 Scores of confirmatory factor analyses (CFAs) for the measures of the factors.

Models	χ^2	df	χ^2/df	$\Delta\chi^2 (\Delta df)$	GFI	NFI	TLI	CFI	RMSEA
Five-Factor Model	973.399	620	1.570		0.909	0.918	0.964	0.968	0.034
Four-Factor Model: combining SP and SQ	2164.543	630	3.407	1191.144 (10)	0.804	0.818	0.848	0.864	0.069
Three-Factor Model: combining SP, TMS and SQ	2627.936	630	4.171	1654.537 (10)	0.761	0.778	0.799	0.820	0.079
Two-Factor Model: combining ITC, SP, TMS and SQ	3626.999	630	5.757	2653.60 (10)	0.647	0.693	0.699	0.730	0.097
Single-Factor Model	3789.746	631	6.015	2816.347 (11)	0.630	0.679	0.683	0.716	0.100

Note: **p < 0.001. N=507, GFI= goodness of fit index; CFI= comparative fit index; TLI= Tucker-Lewis coefficient;

NFI= normed fit index; RMSEA= root-mean-square error of approximation; ITC= IT capabilities; SP= Sustainability

practices; SQ= Service quality; TMS= Top management support; OP= Organizational performance

Table 4.5 Construct evaluation.

Constructs	Factor Loading (λ)^a	AVE	CR
IT capabilities	0.611 – 0.785	0.501	0.933
Sustainability practices	0.639 – 0.840	0.560	0.910
Service quality	0.625 – 0.758	0.564	0.886
Top management support	0.763 – 0.818	0.645	0.901
Organizational performance	0.610 – 0.808	0.538	0.853

Note: ^aAll factor loadings (λ) are significant at ($p < 0.01$)

AVE= average variance extracted; CR= composite reliability

4.2.4 Hypotheses Results

The ten hypotheses were tested by estimating the research model outlined in Figure 4.1. First, the relationships between IT capabilities, sustainability practices, service quality and organizational performance were examined and then the mediating and moderating relationships were investigated. The results of the analysis appear in Table 4.6. The hypothesized model was tested following the recommendations described by the Hayes (2013) PROCESS macro based on the analytical conceptualization of Preacher, Rucker, and Hayes (2007), including a bootstrapping procedure. The bootstrap method was generated using SPSS 24.0 to evaluate the statistical significance of the research model.

The following procedures were taken to examine the hypotheses. In first stage, hierarchical multiple regression models (direct and mediated associations) were run using the control variables (age, gender, education, and tenure), independent variable (ITC), mediators (SP and SQ), moderator (TMS), and interaction on different stages representing the hypotheses (H1, H2, H3, H4, H5, H6 & H7) (Models 1–13 in Table 4.6). Then, as indicated in Table 4.7, the Model 13 of PROCESS macro was utilized to analyze the whole mediated moderation model stated in Hypotheses 8, 9, and 10.

Hypothesis 1 was to examine the analyses of direct effect from ITC to SP. The results in table 4.6 for Hypothesis 1 find a positive and significant effect of ITC on SP as per managers' perceptions (Model 2: $\beta = 0.46$, $p < 0.001$). Hence, Hypothesis 1 is supported.

The interaction impact is considered between ITC and OP to examine

Hypothesis 2. As expected, the structural links from IT capabilities to organizational performance is positive and significant, as represented in Table 4.6, (Model 8: $\beta = 0.45$, $p < 0.001$). This finding provides empirical support for Hypothesis 2.

Hypothesis 3 was to examine the direct correlation between SP and SQ. The results for Hypothesis 3 show that there is a significant direct link between sustainability practices and service quality, as shown in Table 4.6, (Model 5: $\beta = 0.33$, $p < 0.001$). Therefore, Hypothesis 3 is supported.

In support of Hypothesis 4, the direct correlation was examined between SQ and OP. The results imply the positive impact of service quality on organizational performance, as displayed in Table 4.6 (Model 11: $\beta = 0.58$, $p < 0.001$). Thus, Hypothesis 4 is supported.

Regarding the test of the study's mediation models (H5, H6, H7), the findings help confirm the predictions. Hypothesis 5 suggested that SP mediates the positive relationship between ITC and OP. As indicated in Table 4.6, ITC was positively correlated with OP (Model 8: $\beta = 0.45$, $p < 0.001$). When the SP factor was inserted as an exclusive mediator between ITC and OP, the relationship between ITC and OP was remained significant, but the strength of the relationship reduced (Model 9: $\beta = 0.30$, $p < 0.001$). However, SP was positively connected with OP (Model 7: $\beta = 0.41$, $p < 0.001$), representing that SP plays as a mediator in the relationship between ITC and OP. Moreover, the indirect effect is significant (see Table 4.7), as confirmed by the bias-corrected bootstraps at a 95 percent confidence interval ($a*b = 0.146$; lower bound = 0.0825, upper bound = 0.2284), thus supporting Hypothesis 5.

Hypothesis 6 suggested that SQ is the mediator in the positive relationship between ITC and OP. As indicated in Table 4.6, ITC was positively associated with OP (Model 8: $\beta = 0.45$, $p < 0.001$). When the SQ factor was inserted and where SP is absent, the relationship between ITC and OP was significant, the strength of the association even increased (Model 10: $\beta = 0.49$, $p < 0.001$). In contrast, SQ was positively connected with OP (Model 12: $\beta = 0.44$, $p < 0.001$), confirming that SQ mediates the relationship between ITC and OP. In addition, the indirect effect is also significant ($a*b = 0.304$; lower bound = 0.2199, upper bound = 0.4007) to confirm Hypothesis 6.

When both mediators are included in the model, the indirect effect between ITC and OP via SP is significant ($c'=0.314$), as was the case via SQ ($c'=0.156$). The total effect (c) of ITC on OP is positive and significant ($c= 0.461$, $p<0.01$), thus giving support to Hypothesis 7.

Table 4.6 Calculations of hierarchical regression analysis models.

Dependent variables														
Variable	SP			SQ			OP							
	M1	M2		M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13
	β (SE)	β (SE)		β (SE)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)
Constant	3.59*** (0.19)	1.19*** (0.24)		3.719*** (0.18)	1.637*** (0.2)	1.312*** (0.12)	3.655*** (0.18)	2.179*** (0.2)	2.02 (0.21)	1.514*** (0.2)	1.052 (0.21)	1.508*** (0.19)	1.188 (0.19)	1.05 (0.47)
Gender	0.01 (0.07)	0.02 (0.06)		0.04 (0.07)	0.03 (0.06)	0.03 (0.05)	0.09 (0.07)	0.06 (0.06)	0.09 (0.06)	0.11 (0.05)	0.08 (0.05)	0.07 (0.05)	0.09 (0.05)	0.05 (0.05)
Age	0.04 (0.04)	0.06 (0.04)		0.02 (0.05)	0.01 (0.03)	0.02 (0.03)	0.03 (0.04)	0.02 (0.04)	0.05 (0.03)	0.01 (0.03)	0.01 (0.03)	0.04 (0.04)	0.01 (0.03)	0.02 (0.03)
Education	0.07 (0.05)	0.07 (0.05)		0.03 (0.04)	0.02 (0.03)	0.04 (0.04)	0.04 (0.04)	0.01 (0.05)	0.04 (0.04)	0.02 (0.03)	0.02 (0.03)	0.02 (0.04)	0.02 (0.04)	0.03 (0.04)
Tenure	0.13* (0.05)	0.08 (0.06)		0.21*** (0.05)	0.16*** (0.04)	0.13 (0.04)	0.23*** (0.05)	0.17*** (0.04)	0.18*** (0.04)	0.13*** (0.04)	0.13*** (0.04)	0.11** (0.03)	0.08* (0.04)	0.09* (0.03)
Firm size	0.06 (0.03)	0.04 (0.04)		0.01 (0.03)	0.02 (0.03)	0.04 (0.02)	0.01 (0.03)	0.03 (0.02)	0.03 (0.03)	0.02 (0.02)	0.03 (0.02)	0.01 (0.02)	0.01 (0.02)	0.02 (0.02)
ITC		0.46*** (0.05)			0.57*** (0.04)	0.42*** (0.04)			0.45*** (0.04)	0.30*** (0.04)	0.49*** (0.07)			
TMS										0.32*** (0.03)	0.53*** (0.08)		0.24** (0.03)	0.67*** (0.09)
IT*TMS											0.13*** (0.04)			
SP						0.33*** (0.03)		0.41*** (0.03)						
SQ												0.58*** (0.03)	0.44*** (0.03)	0.72*** (0.07)
SQ*TMS														0.18*** (0.03)
R ²	0.027	0.200		0.048	0.345	0.442	0.074	0.256	0.309	0.36	0.415	0.388	0.452	0.579
ΔR ²		0.173			0.297	0.097		0.182	0.053	0.051	0.055	0.314	0.064	0.127
F	2.73*	108.10***		5.084***	226.333***	87.119***	8.022***	122.375**	120.690**	91.921**	12.279***	256.657**	57.762***	25.590**

Notes: N= 507; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. β =unstandardized coefficients; SE=standard error; ITC=IT capabilities; SP=sustainability practices; SQ=service quality;

TMS=top management support; OP=organizational performance.

Table 4.7 Regression results of mediation through bootstrapping method.

IV	MV	DV	Effect of IV on M (a)	Effect of IV on DV (b)	Indirect effect (a*b)	Total effects (c')	Total effects (c)	95 % CI	Supported
ITC	SP	OP	0.469	0.312	0.146	0.314	0.461	[0.0825, 0.2284]	Yes
ITC	SQ	OP	0.581	0.523	0.304	0.156	0.461	[0.2199, 0.4007]	Yes

Notes: IV=ITC; DV=OP; MV=SP, SQ; ITC=IT capabilities; SP=sustainability practices; SQ=service quality; TMS=top management support; OP=organizational performance; IV=independent variable; MV=mediating variable; DV=dependent variable.

Hypothesis 8 proposed that TMS is the moderator in the relationship between ITC and OP, and their relationship becomes stronger when TMS is at a greater level. The interaction between IT capabilities and top management support was positively connected to OP (Model 10: $\beta = 0.13$, $p < 0.001$), as indicated in Table 4.6. The pattern of the moderating effect was visually interpreted using the approach proposed by Aiken and West (1991) to depict the interaction between the variables. Figure 4.2 displays the association between IT capabilities and organizational performance becomes stronger at higher levels of top management support. This result supports Hypothesis 8.

Hypothesis 9 anticipated that TMS moderates the association between SQ and OP. As a result, the moderating effect is stronger when TMS at a higher level. The interaction between service quality and organizational performance was positively related to top management support (Table 4.6, Model 13: $\beta=0.18$, $p<0.001$). Once again, using the same approach of Aiken and West (1991) to plot the interaction in order to determine the pattern of the moderating effect, the interactions between IT capabilities and organizational performance at two levels of top management support (one SD lower and one SD higher than the mean) are displayed in Figure 4.3. Further, Table 4.8 shows a stronger positive effect of service quality and top management support on organizational performance when it is high ($\beta=0.27$, $p<0.05$) compared to when it is low ($\beta =0.08$, n.s.). In summary, as proposed by Hypothesis 9, the overall findings confirm that top management support plays as a moderator on the relationship between service quality and organizational performance.

Hypothesis 10 posited that TMS moderates the indirect relationship between ITC and OP through SQ. The moderated path model was developed to analyze Hypothesis 10 by following the Edwards and Lambert (2007) Method. Table 4.8 and Figure 4.3 indicate that, when top management support is at high levels, the indirect effect of IT capabilities on organizational performance by service quality is significant (0.27*, 95% CI, LL=0.0502, UL=0.2231); however, when top management

support is at low levels, the indirect effect on organizational performance by service quality is not significant (0.08, n.s.). In addition, the index of moderated mediation (Index: 0.0748, Boost SE=0.025, 95% CI 0.0253, 0.1253) did not contain zero; nevertheless, the influence of top management support on the indirect effect was significant. As a result, top management support moderates the indirect relationship between IT capabilities and organizational performance through service quality, as predicted in Hypothesis 10.

Table 4.9 shows the summary of tests for hypotheses 1, 2, 3, 4, 5, 6, 8, 9 and 10. .

Table 4.8 Results for conditional indirect effect at value of top management support (Hypothesis 9 and Hypothesis 10)

	Coeff.	S.E	95% CI	
			LL	UL
Direct effect of ITC on OP	0.45*	0.039	0.0277	0.1832
Indirect effect of ITC on OP through SQ	0.30*	0.046	0.2199	0.4007
Conditional indirect effect of ITC on OP at values of TMS (Hypothesis 10)				
Low TMS (-1 SD)	0.08	0.039	-0.0147	0.3607
High TMS (+1 SD)	0.27*	0.043	0.0502	0.2231

Notes: CI=confidence interval; LL=lower limit CI; UL=upper limit CI; ITC=IT capabilities; SP=sustainability practices;

SQ=service quality; TMS=top management support; OP=organizational performance. *N*=507; * *p*<0.05.

Table 4.9 Confirmation of Hypotheses 1, 2, 3, 4, 5,6, 8, 9, and 10

Hypothesis	Path	β	P	Supported (Yes/No)
H1	ITC $\rightarrow$ SP	0.46	0.05	Yes
H2	ITC $\rightarrow$ OP	0.45	0.04	Yes
H3	SP $\rightarrow$ SQ	0.33	0.03	Yes
H4	SQ $\rightarrow$ OP	0.58	0.03	Yes
H5	ITC $\rightarrow$ SP $\rightarrow$ OP	0.30	0.04	Yes
H6	ITC $\rightarrow$ SQ $\rightarrow$ OP	0.49	0.07	Yes
H8	ITC $\rightarrow$ TMS $\rightarrow$ OP	0.13	0.04	Yes
H9	SQ $\rightarrow$ TMS $\rightarrow$ OP	0.18	0.03	Yes
H10	ITC $\rightarrow$ SQ, TMS $\rightarrow$ OP	0.27	0.05	Yes

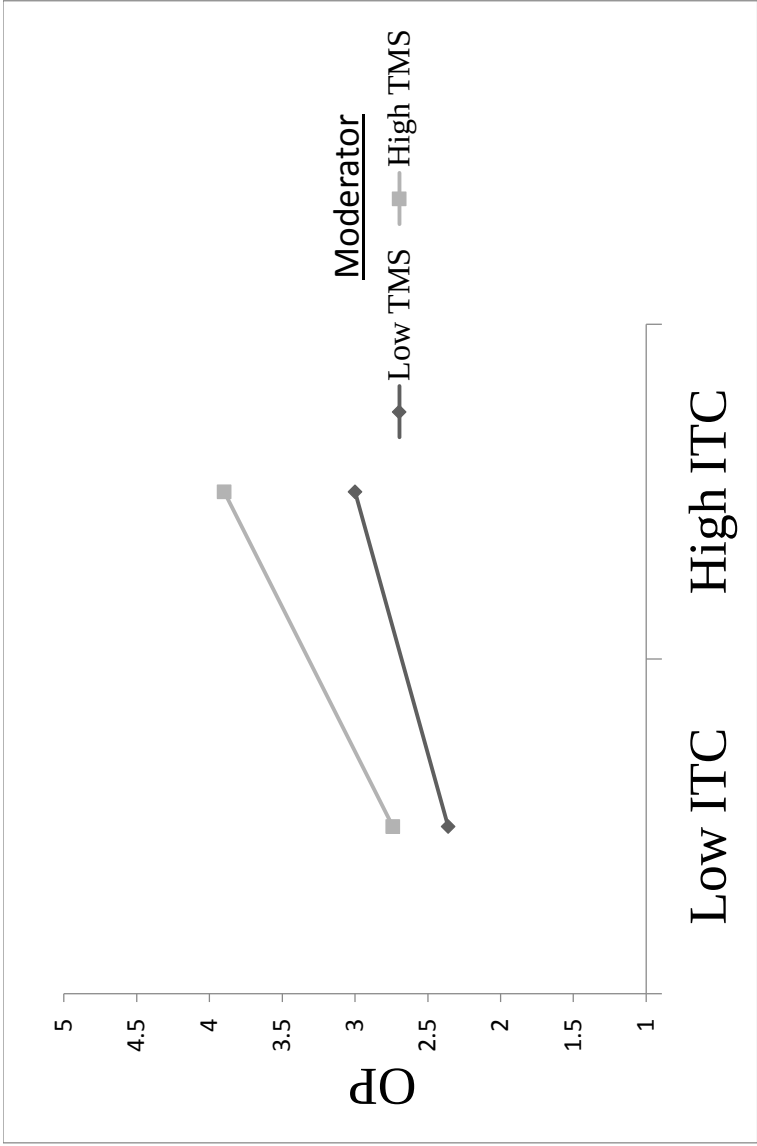


Figure 4.2 Interactive effects of IT capabilities (ITC) and top management support (TMS) on organizational performance (OP).

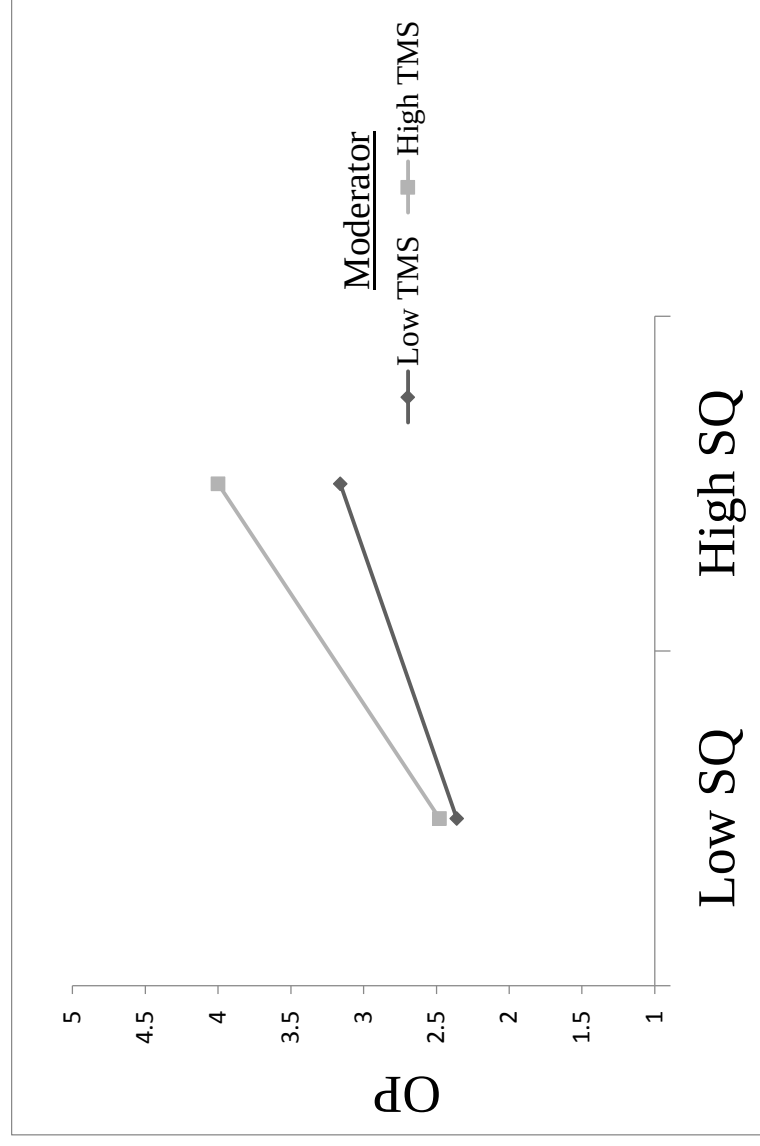


Figure 4.3 Interactive effects of service quality (SQ) and top management support (TMS) on organizational performance (OP)

4.3 Conclusion

This chapter summarizes the findings of 507 hotel managers. SPSS 24.0 was used to evaluate the data, which included a variety of tests and techniques. To increase the likelihood of generating a normal distribution of data, normality tests were utilized. The findings revealed that non-response bias had no effect on responses. Kurtosis and skewness were both normal, and no multivariate outliers were found.

The major studies' demographic descriptive data, pilot test, and measurement models were examined using SPSS 24.0. The measurement model was interpreted using confirmatory factor analysis. All constructs displayed adequate convergent and discriminant validity for the model. Multicollinearity was not a problem, too.

The final structural model included an acceptable goodness-of-fit, and findings confirmed the hypotheses related to the relationships among IT capabilities (ITC), sustainability practices (SP), service quality (SQ), organizational performance (OP), and top management support (TMS). Results showed that all ten hypothesized relationships are supported, suggesting that ITC can improve OP to achieve business success through the development SP and SQ. The empirical results also revealed that SP and SQ mediates the relationship between ITC and OP. Moreover, TMS strengthens the relationship between ITC and OP. Furthermore,

TMS is moderating the mediating impact of SQ in the relationship between ITC and OP, with the mediating effect apparent both in upper and low levels of TMS.

In the following chapter, discussion of findings is provided and connects the results with previous studies.

CHAPTER 5: **DISCUSSION**

This chapter provides a thorough analysis of the findings and places them in the context of previous works to ensure that the findings and conclusions are accurate and valid. It is organized around the core research goal, with three major objectives and ten hypotheses.

5.1 Discussion of Research Findings

The study is mainly aim to determine the impact of IT capabilities on organizational performance in the hospitality sector. This study extended the current research on IS and sustainable development by investigating the effect of IT capabilities via sustainability practices and service quality on organizational performance in the hotel industry in the United Arab Emirates (UAE). The role of top management support is also included in this study. Ten hypotheses and their corresponding sub-topics were developed using structural equation modeling, and empirical tests of the proposed model provided evidence that IT capabilities affect organizational performance through sustainability practices and service quality.

There has been an increased awareness of the importance of IT capabilities' components in improving the performance of organizations in recent years (Davis-Sramek et al., 2016). To achieve consistent performance in the context of sustainability and service quality, it is important to improve IT competence and

infrastructure (Nik Abdullah, 2019). Significant evidence of a positive association between IT capabilities and organizational performance has been discovered by researchers (Akram et al., 2018). However, little was recognized about the limit to which IT capabilities influence organizational performance including non-financial information such as sustainability and service quality (Nik Abdullah, 2019). Clearly, there is a need for further review and investigation of the value of IT capabilities for companies in hospitality industries from a resource-based perspective. Through this research, the significant role of IT capabilities was explored as a driver of sustainability practices and service quality to improve organizational performance. The study also investigated the role of top management support in an organization's performance. In the UAE, especially in the Emirates of Abu Dhabi and Dubai, the hospitality and tourism sector have played a crucial key in affecting the sustainability factors, contributing to 5.2 percent of the country's overall gross domestic product (GDP) (The UAE's Government Portal, 2019). Thus, the role of IT capabilities in enhancing business performance has become the focus of many studies; unfortunately, companies in this sector are struggling to understand that sustainability can support service quality. Government authorities have enacted several programs to adopt sustainability plans by organizations. When the organization exploits its IT, this will affect positively in improving the culture to comply with sustainability

practices. One of the programs that was led by Dubai Tourism is a training conducted for 528 hotels on the implementation of these sustainability standards. Furthermore, hospitality leaders can take decisions in implementation of sustainability programs by integrating them into their business goals and strategies. The National Committee on Sustainable Development Goals has developed their agenda to implement the sustainability development in all sectors, including hospitality and tourism. Therefore, this sector must ensure to incorporate sustainability practices with their strategies. Also, leadership and management are requested to comply with sustainability as they are important for making this happen without contradicting the performance and service quality.

The variables used in this study were IT capabilities, sustainability practices, service quality, top management support and organizational performance. To improve the generalizability of the findings, a quantitative technique was adopted. An anonymous online survey was used to collect data, and the 507 complete responses were analyzed using the Statistical Package for Social Sciences (SPSS) version 24.0. (SPSS Inc., 2009) by analyzing the data following the structural equation modeling (SEM). The response rate of 92 percent has met the acceptable standard for generalization of the study as recommended by Frohlich (2002). A confirmatory test analysis (CFA) was first performed, with the CFA

model refined based on model fit statistics. The model fit statistics (χ^2/df , GFI, CFI, NFI, TLI, RMSEA) were within the suggested range.

The results of this study found that IT capabilities are positively associated with the sustainability practices and organizational performance. Sustainability practices, including environmental, social, and economic, significantly influenced service quality. Service quality positively affected organizational performance. The mediating analysis of sustainability practices and service quality was developed, and the results specify that the sustainability practices mediate the relationship between IT capabilities and organizational performance and, similarly, service quality mediates the relationship between IT capabilities and organizational performance. Also, both sustainability practices and service quality sequentially mediate the correlation between IT capabilities and organizational performance. Finally, it empirically shows the moderating role of top management support between the IT capabilities and organizational performance from one side and between service quality and organizational performance from the other for both being stronger when top management support is at higher levels. In addition, the findings confirm that the top management support mediates the moderating effect of service quality on the relationship between IT capabilities and organizational performance, with the mediating effect being stronger.

5.2 Findings Related to Research Questions and Hypotheses

5.2.1 Research question 1: To what extent do IT capabilities affect the sustainability practices, service quality and organizational performance in the UAE hospitality sector?

H1: IT capabilities have a positive relationship with sustainability practices.

H2: IT capabilities have a positive relationship with organizational performance

H3: Sustainability practices have a positive with service quality

H4: Service quality has a positive relationship with organizational performance

This study contributes to the understanding on how IT capabilities affect sustainability practices, service quality and organizational performance. The findings of the proposed models were discussed. Initially H1, H2, H3 and H4 as mentioned above were proposed.

Investments in IT capabilities have long been assumed to be critical to a company's survival and competitive performance (Bilgihan et al., 2011). In fact, more than 80 percent of business leaders believe IT capabilities to be fundamental to their organization's success. Furthermore, scholars in the field of information systems have focused their efforts on comprehending this relationship. They have, however, paid far less attention to the relationship between IT capabilities and organizational performance via sustainability practices and service quality. While

a large number of IS studies indicate that ITC is an important feature of a successful information system, it is intriguing that researchers have yet to explain the complex association between the value of IT capabilities and organizational performance (Fink, 2011).

The research model shows that IT capabilities directly affect SP, SQ and OP. This finding confirms previous conceptualizations that drew on the RBV to argue that ITC is capable of achieving superior performance (Bharadwaj, 2000; Donkor et al., 2017). The majority of researchers who have attempted to link IT capabilities to firm performance have attempted to rely on RBV theory, i.e., higher performing in IT capabilities coordinates to affect the firms in creating value and responding to environmental changes which thereby enables the firm to possess competitive advantages (Jacks et al., 2011). This stream of literature suggests that firms that are better able to leverage IT capabilities to reconfigure assets adeptly and uniquely can have a better competitive edge over their peers (Ketokivi & Schroeder, 2004), which results in performance improvement. Similarly, in the information systems literature, it has been suggested that IT capabilities are organizational routines related to the use of IT and are critical to firms (Arenas, Goh, & Urueña, 2019). Therefore, the literature recommended to continue working into how IT capabilities facilitate the implementation and development of sustainability practices, (e.g., Aktin & Gergin, 2016; Fuisz-Kehrbach, 2015;

Machado et al., 2017; van de Wetering et al., 2017; Yang & Ha-Brookshire, 2019), and service quality (Lyver & Ta-Jung, 2018; Raymond et al., 2018) to improve performance especially in the hospitality sector.

The result of this study is consistent with the theory proposed by Barney(1991) which mentions that IT capabilities, in this case IT infrastructure and IT human resources, drive the organization to improve its performance. In this study it was shown that, with flexible IT capabilities, the organization needs to have the ability to sense and respond to opportunities in the market with IT-driven business innovation and this ability has to be accompanied by the ability to implement change quickly and effectively.

The results of the empirical study highlight the importance of ITC in supporting sustainability practices that has also been discussed in the IS literature (Callaway & Jagani, 2015; Fink, 2011; Khatri, 2006) to be an important component in playing a dominant role in sustainability development. The results regarding IT-SP partnership also emphasize the importance of ITC and sustainability alignment which is in line with Callaway et al. (2009) and Ramón-Jerónimo and Herrero (2017). The study results confirm that IT-SP partnership has led to incorporate sustainability practices (Ajamieh et al., 2016) using more intensive knowledge sharing and exchange provided by IT infrastructure capabilities which is in line with Saunila et al. (2019). This finding highlights the critical importance of

bridging the gap between IT and SP in the organizations. Structural alignment that is aimed fill the gap in the organization can help companies to increase benefits realization from improvement and flexibility of IT capabilities. Sustainability can still be seen as a liability for some firms (Russo & Fouts, 1997); however, this concept has been changed as it was found that there is a positive connection between environmental performance and economic performance (Bansal & Clelland, 2004). When organizations make efforts to apply sustainability practices, their operation and innovation are improved. They can also obtain strategic growth, gain a high performance, and deliver sustainable values to the broader society (Colbert & Kurucz, 2007; Hart & Milstein, 2003; Porter & Kramer, 2006). Recent research has utilized the resource-based-view (RBV) of the firm as the theoretical foundation to argue for the benefits of adopting TBL for firms' growth.

This study found that ITC, including IT infrastructure and IT human resources, significantly influenced the OP. This result is in line with the framework of IT proposed by Bilgihan et al. (2011) which highlights the importance to adapt the IT capabilities to help companies achieve competitive advantage by expecting a positive impact on firm performance. This study also found an empirical support to stress the importance of ITC to support organizational performance. This capability is considered critical considering the short life cycle of IT and software-related products. For this, it is necessary for organizations to benefit from intensive

knowledge sharing and exchange between decision-makers and IT managers (Govindaraju et al., 2018). That is, IT capabilities are more relevant to firm value, which represent growth opportunities, intangible assets, and innovation (Ong & Chen, 2013). The company's innovation performance is one of the most important parts of a company's competitive advantage. This process will improve any project deployment in the company which will support company's performance (Ong & Po-Yen, 2014).

Services sectors, like hospitality and tourism, are a major sector of any economy, and also they are increasingly gaining importance even as part of the product offering (The UAE's Government Portal, 2019). Given the high-touch nature of hospitality services, it seems natural to consider the service-profit link when attempting to assess organizational performance (Wattanakamolchai et al., 2016). The findings of previous studies support the proposition that SP can support SQ in the company by innovating new services and improving current ones. This positive relationship will have a higher impact on organizational performance when companies maintain to meet customers' expectations regarding service levels and sustainability practices at the same time (Vetráková et al., 2019). The same findings may be observed in the works of Chen and Barrows (2015) and Suhaeni and Sosianika (2018). Hence, the service quality is consistent with the emerging sustainability practices in which the IT capabilities – the interaction between

employees and technology – are theorized to play a central role in ensuring the achievement of the organizational performance. Moreover, good responses to increasing customers' expectations and needs include not only low costs with high service quality by upgrading existing products/services and develop new additional ones, but also establishing product or process solutions that address ecological constraints.

5.2.2 What is the impact of sustainability practices and service quality on the association between IT capabilities and organizational performance in the UAE hospitality sector?

H5: Sustainability practices is mediating the correlation between IT capabilities and organizational performance

H6: Service quality is mediating the correlation between IT capabilities and organizational performance

H7: Sustainability practices and service quality are sequentially mediating the correlation between IT capabilities and organizational

Regarding the test of the study's mediation model (H5, H6, H7), the findings help confirm the predictions. These hypotheses aimed to understand the relationships between IT capabilities, sustainability practices, service quality and organizational performance. Although there were a few studies that researched the mentioned relationships (Fudo et al., 2014; Kassinis & Soteriou, 2015; Metaxas et

al., 2019; Njoroge et al., 2019), research remains scant in hospitality and tourism, especially in hotels. Furthermore, the potential mediating role of sustainability practices and service quality in hospitality and tourism on the mentioned relationship is still not sufficiently presented in the literature (Aktin & Gergin, 2016; Calero et al., 2019; Pye & Rai, 2014). The topic is relevant because there exists little to no research on the importance of sustainability practices (planet, people and profit) and hospitality service quality (innovate new products/services and enhance existing products/services) in the hospitality and tourism sector (Whelan & Fink, 2016). Similarly, Müller and Pfleger (2014) asserted that, although there is considerable research on sustainability in the hospitality and tourism sector (e.g., Alegre & Berbegal-Mirabent, 2016; Chan & Hsu, 2016; Prud'homme & Raymond, 2016), studies that integrate the role of IT capabilities with sustainability in this sector are scarce. This situation is even more glaring in such contexts as the Arabian Gulf business (Pillai & Al-Malkawi, 2018), where very hot weather and water scarcity are further challenges to sustainable tourism.

In general, IT capabilities for supporting SP and SQ appear to enable similar activities and processes involved in achieving organizational performance, but through different means. Thus, we posit the following specific propositions: IT capabilities are an essential component for sustainability practices and service quality that can lead to improve organizational performance (Day, 1994). They can

also support organizations to reconfigure and adjust available IT to achieve long-term competitive advantage (Zhang & Hu, 2018). Despite extensive studies on IT-related topics with organizational performance, there is no consensus as to how IT resources and capabilities interact with organizational processes to create value and enhance performance, which leads to misleading and causes confusion in the literature. In this study, we examined how information technology in the hospitality sector creates value in improving the organizational performance by embedding fundamental elements of sustainability practices and service quality. Our findings suggest that IT capabilities of the hospitality sector are especially salient in enabling better sustainability practices for designing high standards of service quality (see Fig. 6).

The mediation model shows that SP and SQ do indeed play a value in connection the IT capabilities with organizational performance. In other words, the mediation model shows that IT capabilities affect OP through their effects on SP and SQ. When either the direct model or the mediation model is tested alone, the resulting conclusion may be that SP and SQ components are statistically significant mediators of the cause-effect relationship between IT capabilities and overall organizational performance. When the two mediators are sequentially tested together, the resulting conclusion is that both SP and SQ mediate the relationship between ITC and OP.

As discussed in the literature review, the results of these hypotheses (H5, H6, H7) are consistent with previous research. Once again, it is confirmed that the sustainability practices and quality of hospitality services play a very important role in how managers evaluate the overall organizational performance by exploiting the IT capabilities (Leal-Millán et al., 2016). Earlier research has confirmed the current finding and revealed that information systems and capabilities contribute to customer satisfaction by constantly improving service quality and forecasting resources effectively (Chahal & Bakshi, 2016; Maletič et al., 2014). That is, hotels' managers acknowledged the IS/IT capability of staff as the most significant factor importance of IT capabilities (van de Wetering et al., 2017) for improving service quality (Howard & Lubbe, 2012) in promoting an organization's sustainability capabilities.

Sustainability has become a critical issue for hotel organizations due to their large consumption of resources. According to Calero et al. (2019), the majority of hotels are unable to control the unlimited and diffused consumption of nondurable resources such as water, food, energy, paper, and other goods, followed by pollutants and unfriendly material emissions (e.g., non-disposable or non-recyclable items) to the local environment. Hotels are also under pressure to apply environmental, social and economic approaches from a diverse range of local and international stakeholders (Whelan & Fink, 2016). Managers, for example, are

struggling to satisfy a growing segment of their customers who want to pay for green hotels while at the same time trying to control hotel operating costs (Huang & Li, 2017). This study verifies that corporate sustainability can have an impact on the IT capabilities-organizational performance relationship. This outcome has captured the various aspects of corporate sustainability. The findings of this research were substantiated with conclusions from Fudo et al. (2014) that the potential gains for tourism organizations who choose to adopt IT applications may be considered to include improvements in services by which it is expected to promote the use of low CO₂. Additionally, the findings of this research were further substantiated with conclusions from Kassinis and Soteriou (2015) that synergies exist between service excellence through customer satisfaction and environmental practices in the hotel industry by effectively utilizing video technology. The study by Metaxas et al. (2019) further substantiated these research findings that IT capabilities have advantages for improving the activities of hotels' service quality, which are expensive in most cases. Even where service excellence has been achieved, there may be a compromise by the behavior of individuals to positively affect sustainability, which is a fundamental element for survival in a dynamic world. In a careful review of the results discussed above, the findings reflected similarities to the results of Njoroge et al. (2019) for the adoption and governance of technology with innovation strategy to standardize the service quality

framework. This study's findings concluded that innovation strategy seems to have a productive correlation with economic sustainability performance. The strategy specifically promotes hotels' long-term profitability, resource management, customer satisfaction, and value chain management.

5.2.3 *How high or low levels of top management support in the UAE hospitality sector influence the IT capabilities, service quality and organizational performance?*

H8: Top management support is moderating the relationship between IT capabilities and organizational performance, with the relationship being stronger top management support is at a high level

H9: Top management support is moderating the relationship between service quality and organizational performance, with the relationship being stronger when top management support is at a high level

H10: Top management support mediates the moderating effect of service quality on the relationship between IT capabilities and organizational performance, with the mediating effect being stronger when TMS is at a high level

Although IT capabilities have been studied from organizational and technological perspectives (Hsu et al., 2019), some organizations still fail to recognize and take advantages of opportunities of IT assets (Garrett Jr & Neubaum, 2013). This may be because the impact of top management support on IT

capabilities has remained largely unexamined. Examining this relationship is, however, appropriate because management support remains important for all industry to provide the strategic rationale and can legitimize assimilation of a technology (Islam et al., 2020). Furthermore, prior research has often pointed to the positive influence of top management support on achieving superior performance (Liang et al., 2007). This is particularly crucial as managers reflect companies' willingness to invest in and support IT, as well as top management's expressed commitment to its success. The literature on IT capabilities, however, is less certain regarding the strength of the relationships between top management support and service quality and organizational performance, or how the relationships may vary across different organizational contexts (Byrd & Davidson, 2003). Research has also examined the relationship between IT capabilities and service quality and showed that organizational performance increases because organization's management is involved (Lloyd-Walker & Walker, 2011). The hotel manager is expected to reinforce common values among his employees as a way of enhancing service quality (Li & Liu, 2018). Therefore, it is important to know whether managerial control is a determinant of IT capabilities to improve service quality and organizational performance. However, limited studies have elucidated the relationships among these constructs (García-Sánchez et al., 2017; Henningsson et al., 2018) especially within the hospitality context (Li & Liu, 2018). The purpose

of this study is to help fill this gap in research and provide a better understanding of IT success by examining the impact of IT capabilities on organizational performance through top management support, in the presence of hospitality sector environments. Also, to test the moderating effects of top management support in the relationships between IT capabilities, service quality and organizational performance, since the literature suggests that top management support is important for strengthening this relationship.

Three hypotheses (H8, H9, H10) regarding the moderating role of top management support in the relationship between IT capabilities, service quality and organizational performance were supported as top management support should have strengthened these relationships. The results of this study suggest that IT capabilities studied in this study significantly impact success of organizational performance. Results also indicate that the moderating effect of top management support is significant for IT capabilities and service quality. In the most general sense, the IT capabilities are undeniably critical for organizational performance; however, top management support is recognized as a critical ingredient in IT capabilities' success in an organization.

Managers must be well-aware of the fact that mitigating IT investments based on the instant effects of IT capabilities on a firm's performance has some obstacles (Liang et al., 2007). For example, staff may not be well-trained to fully

benefit from IT in service. Instead, they must realize the importance of the interrelationships among IT capabilities and the organizational performance that needs their support. The effects of IT on organizational performance have been found to be highly emphasized by managers, which is consistent with the findings of previous studies. For example, Quaadgras et al. (2014) highlighted the importance of top management support in the success of organizational IT projects. García-Sánchez et al. (2017) stated that the effective use of information systems in any organization must begin with the chief executive officer, who should connect between IT and business success, while Al-Arafati et al. (2019) concluded that whenever management is not involved in IT system developments, the system of quality and service in the organization fail and result in poor performance. During the era of information systems, García-Sánchez et al. (2017) asserted that top management support benefits from information available in these systems to capture customer preferences continuously and to apply this knowledge to create value for the organization, while empirical evidence has concluded that top management support or senior involvement in information systems adoption and implementation projects is necessary to achieve better organizational performance (Garrett Jr & Neubaum, 2013). Since the results of this study found a stronger correlation between IT capabilities and organizational performance through the top management support, it is vital that senior managers must provide all support to IT

projects.

5.3 Conclusion

This study's findings confirm the hypotheses related to the relationships among IT capabilities, sustainability practices, service quality, organizational performance, and top management support. Results showed that all ten hypothesized relationships are supported, suggesting that IT capabilities can improve organizational performance to achieve business success through the development sustainability practices and service quality. The empirical results also revealed that sustainability practices and service quality mediate the relationship between IT capabilities and organizational performance. Moreover, top management support strengthens the relationship between IT capabilities and organizational performance. Furthermore, top management support moderates the mediating effect of service quality on the IT capabilities–organizational performance relationship, with the mediating effect apparent both in upper and low levels of top management support. These findings are consistent with previous studies. The following chapter explains the study's theoretical and practical implications, and some limitations, which point to the potential for future research.

CHAPTER 6: CONCLUSION

This chapter covers the research's theoretical and practical contributions, as well as its limitations and recommendations for further research.

6.1 Implications

6.1.1 Theoretical Implications

There are several noteworthy implications for theory based on the results of the study. The primary theoretical contribution of this work expands the existing hospitality industry literature by developing a framework that elucidates the pathways from IT capabilities to organizational performance and delineates in between the sustainability practices necessary for a hotel sector to establish a service quality. First, in particular, this study reveals that IT capabilities can be used to leverage organizational performance, which generalizes the correlation between these two factors in the hospitality sector. Second, the overall model suggests a more robust nomological framework that can account for the impacts of sustainability practices and service quality as mediators in the IT capabilities–organizational performance relationship. To date, little research has been conducted on the use of IT capabilities in conjunction with sustainability practices and service quality (Birkel et al., 2019). This study also adds new insights to sustainability research and service quality studies because of scholarly interest in studying

sustainability practices in the hospitality sector which are significantly influenced by pressure of government and stakeholders (Metz et al., 2016) as well as better solutions to foster long-term profitability without compromising service quality (Müller & Pfleger, 2014). According to resource-based view theory, organizational capabilities in IT reside in tacit knowledge that is hard for opponents to imitate. Developing sustainability and service quality can, therefore, be seen as a specific unique strategy to maintaining competitive advantage in order to increase performance. The findings extend the literature as the hypotheses were developed based on the assumption that IT capabilities affect organizational performance (Ajamieh et al., 2016) and employing sustainability practices and service quality can help create new benefits within the hospitality industry (Benavides-Velasco et al., 2014). In general, this study's findings contribute to the hospitality and tourism literature (given the unique features of this industry) through the provision of segmentation research outcomes. Finally, few studies have investigated IT capabilities, service quality and organizational performance concurrently in the context of the hospitality industry; this paper, therefore, fills an important research gap and adds to the literature by demonstrating the crucial role of top management in IT capabilities, not only in improving service quality but also in achieving organizational performance. A strong management commitment to IT capabilities fosters good practices in service quality (enhance existing services and developing

new ones) (Dai et al., 2015), with the chances of improved performance being relatively high (Kanwal et al., 2017). This approach contributes to the literature by proposing that top management support ensures continuous performance through IT capabilities and service quality. The findings can be used to formulate guidelines for managers and organizations to focus their attention on IT capabilities to improve service quality and, hence, achieve better performance in service industries.

6.1.2 Practical Contributions

The study provides significant insights for practitioners and managers in the hospitality industry, as well as government officials who are involved in policy decisions. First, the study finds that the growth of hotels' IT capabilities is critical in a digital business setting. The results of this study confirm IT capabilities as a major predictor to improve the performance of firms. Thus, organizations can manage and leverage technologies to achieve their objectives and create profits. the concept of IT capabilities should address the importance of communication in firms, which can lead to innovative ideas for facilitating efficient decisions for the advantage of organization's productivity and performance. In particular, IT capabilities enable managers, staff, and clients to interact and communicate effectively with each other, thereby leading to better superior performance. Hence, by demonstrating basic IT capabilities, managers are more likely to create a work environment that stimulates the development of new products, processes, and

procedures. As a result, the findings imply that hotel management should take advantage of IT capabilities to improve sustainability and service quality by educating the IT team on the required knowledge about business functions and any new technologies available in the market.

Second, the findings of the study indicate a significant positive relationship between IT capabilities and sustainability practices from one hand, as well as sustainability practices emerged as a significant internal determinant of service quality, from the other hand. Hence, hospitality organizations must uphold their standards by complying with government regulations related to sustainability practices and implementing IT capabilities into all service development and innovation. In order to foster better working relationships and achieve progress in sustainability responsibility, companies should make use of innovative technology and platforms that enable employees to discuss and exchange information without undermining service development and innovation. When choosing and designing ways that meet customers' wishes and needs, it is important to ensure that these techniques give adequate support for IT capabilities to aid service delivery improvement and personalization without counteracting the practices of sustainability and thus achieve superior performance.

Third, based on the outcomes of this study, it is projected that sustainability practices and service quality will enhance hotels' organizational performance. The

hotels seek to improve their financial and non-financial performance by investing in IT capabilities to stay competitive. The study highlights the importance of IT capabilities and their role in improving sustainability practices and service quality. Hotels can take advantage of IT capabilities to collect important information about their clients and, as a result, gain a deeper grasp of their sustainability requirements and desires, avoiding problematic, corrupt, or cartel behaviors. Further, hotel marketers will be able to tailor their efforts to meet the recognized needs of their customers, leading to higher service quality by promoting new ideas and enhancing service procedures.

Fourth, the mediation analysis results support the intervening role of sustainability practices and service quality in the relationship between IT capabilities and organizational performance. Therefore, the current study is important for adapting sustainability practices in the hotel business since it identifies the areas that are controlled by managers. These aspects are connected to building strong IT capabilities and supporting service quality to serve the sustainability practices, which contradicts the belief that sustainability practices cannot help to improve the service quality. It is recommended that the hospitality business concentrates on intermediate activities such as sustainability practices and service quality that influence firm performance. The genuine image of organizational performance emerges when using sustainability practices and

service quality indicators. This is beneficial in devising plans to meet stakeholders' requests and to identify business opportunities.

Fifth, the study looked into the proposed conceptual model in the setting of hotels in the United Arab Emirates. The findings highlight the importance of IT capabilities in improving service quality and evaluating organizational profit, market share, sales, and revenues. As a result of these findings, UAE hotels should enhance their IT capabilities to improve service quality and organizational performance. In addition, hotel managers should keep an eye on their personnel's learning orientation by monitoring their progress via regular internal questionnaires on (Matsuo, 2017). Hotels could reduce workplace unlearning by employing and upgrading workers with a strong learning focus. Finally, managers should allow employees to reflect on their work processes while also allowing them to benefit from previous experience. This can be accomplished through various strategies, such as review meetings and workshops. Frontline personnel can use these reflective techniques incorporated in management systems to review, assess, and choose between essential and superfluous knowledge and skillsets.

Finally, top management support has been proposed as a moderator between the IT capabilities and organizational performance. It was found that top management support plays a critical role in the connection between the IT capabilities / service quality and organizational performance. Managers should be

aware of this relationship and be encouraged to foster IT capabilities by being more involved in enhancing service quality. Because top management support levels are higher, developing a long-term strategy is a relatively simple task, but there is a greater possibility of achieving optimal performance. By enlisting the help of senior management, hotels with improved IT capabilities may be able to contribute to destination competitiveness. For this reason, the findings of the study may serve as a catalyst for executives to promote their strategy and focus on leveraging IT resources to strengthen collaborative relationships with key players and local partners, as well as for government policymakers to exploit and use the technology to the hospitality industry (not just hotels) and other key players in the related industries.

6.2 Limitations of the Research

There are some limitations to this work that should be taken into consideration when selecting future research routes, despite the complicated model, adequate sample size, and major implications. The first thing to consider is the fact that the data were collected from hotels, which is considered to be a more than suitable environment for the hospitality industry when it comes to analyzing sustainability and service quality. In addition, we collected the data for this study from hotel managers in only one research setting. In this study, we investigated only the hospitality business; therefore, it could not be considered representative of

other service-related industries or other industries. Second, utilizing data from the United Arab Emirates, this study examined the relationships between the factors in the model by collecting data from hotel managers, which adds a subjective element to the research. Also, due to the subjective character of the data utilized to explain the theoretical construct, it is critical to understand that the problems may be associated with cross-cultural and cross-regional concerns (Bhalla & Lin, 1987). Therefore, this may limit the results' ability to generalize because they could be different in other cultural settings. Another limitation of this study is that organizational performance was assessed based on the hotel manager's judgment of their hotel's performance compared to competitors. Because hotel performance metrics are often considered highly confidential in the UAE, respondents may not be authorized to offer precise financial data, and the subjective assessment was used to gauge organizational performance. Prior research has also shown that objective and subjective measures produce similar results (Jaakkola et al., 2009). Furthermore, although a pertinent model has been tested with direct and indirect effects, only three intervening variables were included: sustainability practices, service quality, and top management support.

To conclude, service quality was seen from a single perspective, which in this research environment is a notion that is translated by the management level. Although, increasing client experience and retention is a result of improving service

quality, the study findings may not be valid in all industry contexts; other elements, such as the hotel's rates, customer religiosity and perception of interest, and geographical convenience, may influence the hotel's organizational success. Also, according to the study's findings, top-level executives played significant roles in fostering IT capabilities and service quality in their respective firms. In order to maintain excellent performance through information technology skills and service quality, senior management must assume responsibilities.

6.3 Future Research Directions

The above limitations of this study can serve as opportunities for future research. Given the potential heterogeneity of sustainability practices and service quality in this study, future researchers may wish to confirm the significance of these aspects by examining their impacts and linkages in other, more homogenous situations. Future research may broaden this focus to conduct studies in contexts outside the United Arab Emirates (UAE) such as different geographical areas, cultures, and time periods in order to increase the generalizability of the results. In addition, future research could look at the linkages and impacts of the model's five components in different industries. Consequently, the impact of cultural differences on sustainability practices and service quality will be better recognized in the future.

Further research might be conducted to determine whether service quality is more effective at the individual or organizational level than at the managerial level, and whether its effect is different among these levels.

Additional research may compare hotels with multiple rating system to assess IT capabilities and their impact on organizational performance from multiple stakeholders in order to identify any discrepancies in results. It would be interesting to examine the conceptual model in different countries and compare the findings in order to overcome economic and cultural gaps. Future research should look at the proposed research model in the context of other hospitality and tourism sectors in developing nations, which could provide additional insight into the difficulties raised in this study. There are other variables that could potentially affect the findings, particularly the size of the hotel, the hotel star rank, hotel location and other factors that should be incorporated in future studies.

It is recommended that a qualitative method can be triangulated in conjunction with the research findings, such as focus groups and/or interviews, to gain a deeper knowledge of the different dimensions included in the research model in the hospitality and tourism sector. It is also recommended to utilize mixed-methods research to test the proposed model. Future research may combine our theoretical framework with additional models such as the technology acceptance

model, capability-based perspective theory, and resource dependence theory to better explain hotels' IT capabilities.

6.4 Conclusion

The overall objective of this research is to ascertain the impact of IT capabilities on organizational performance in the hospitality and tourism business. Results explain how sustainability affects service quality. The findings emphasize the importance of IT capabilities in realizing the aim of sustainability and improving service quality to achieve better performance. It is also explored how IT capabilities, service quality, and organizational performance interact by the function of top management support.

A quantitative technique was employed to aid in generalizing the study's findings from hotels in the UAE as a sample to the UAE's hospitality sector at larger scale. An anonymous online survey was used to collect data. The findings reveal that all ten hypotheses are supported, implying that IT capabilities can help organizations achieve commercial success through fostering sustainable practices and service quality. Additionally, the empirical findings indicate that sustainability practices and service quality components act as mediators, in isolation and sequential, in the relationship between IT capabilities and organizational performance. Additionally, top management support as a moderator increases the link between IT capabilities and organizational performance. Additionally, top

management support mediates the moderating effect of service quality on the connection between IT capabilities and organizational performance, with the mediating effect being evident at both high and low levels of top management support. These findings corroborate earlier research as it has made valuable contributions to the field both theoretically and practically, as well as presenting some essential ideas for future research that will further broaden the topic.

REFERENCES

- Ahmad, S. Z., Ahmad, N., & Papastathopoulos, A. (2019). Measuring service quality and customer satisfaction of the small- and medium-sized hotels (SMSHs) industry: lessons from United Arab Emirates (UAE). *Tourism Review*, 74(3), 349-370. doi:10.1108/TR-10-2017-0160
- Ahmed, R., Mohamad, N. A. B., & Ahmad, M. S. (2016). Effect of multidimensional top management support on project success: an empirical investigation. *Quality & Quantity*, 50(1), 151-176.
- Ajamieh, A., Benitez, J., Braojos, J., & Gelhard, C. (2016). IT infrastructure and competitive aggressiveness in explaining and predicting performance. *Journal of Business Research*, 69(10), 4667-4674. doi:10.1016/j.jbusres.2016.03.056
- Akram, M. S., Goraya, M. A. S., Malik, A., & Aljarallah, A. M. (2018). Organizational performance and sustainability: Exploring the roles of IT capabilities and knowledge management capabilities. *Sustainability (Switzerland)*, 10(10), 3816. doi:10.3390/su10103816
- Akter, S., Wamba, S. F., Gunasekaran, A., Dubey, R., & Childe, S. J. (2016). How to improve firm performance using big data analytics capability and business strategy alignment? *International Journal of Production Economics*, 182, 113-131. doi:10.1016/j.ijpe.2016.08.018
- Aktin, T., & Gergin, Z. (2016). Mathematical modelling of sustainable procurement strategies: three case studies. *Journal of Cleaner Production*, 113, 767-780. doi:10.1016/j.jclepro.2015.11.057
- Al-Arafati, A., Abdul Kadir, K., & Al-Haderi, S. M. S. (2019). The mediating effect of output quality on the relationship between top management support and customer satisfaction on the implementation of customer relationship management system in public sector. *Academy of Strategic Management Journal*, 18(2), 18-12.
- Albers, C., & Lakens, D. (2018). When power analyses based on pilot data are biased: Inaccurate effect size estimators and follow-up bias. *Journal of Experimental Social Psychology*, 74, 187-195.
- Alegre, I., & Berbegal-Mirabent, J. (2016). Social innovation success factors: hospitality and tourism social enterprises. *International Journal of Contemporary Hospitality Management*.
- Ali, A. (2018). Travel and tourism: growth potentials and contribution to the GDP of Saudi Arabia. *Problems and Perspectives in Management*, 16(1), 417-

- Alshamaila, Y., Papagiannidis, S., & Li, F. (2013). Cloud computing adoption by SMEs in the north east of England: A multi-perspective framework. *Journal of Enterprise Information Management*, 26(3), 250-275.
- Amit, R., & Schoemaker, P. J. (1993). Strategic assets and organizational rent. *Strategic management journal*, 14(1), 33-46.
- Anderson, S. F., Kelley, K., & Maxwell, S. E. (2017). Sample-size planning for more accurate statistical power: A method adjusting sample effect sizes for publication bias and uncertainty. *Psychological science*, 28(11), 1547-1562.
- Andrews, G. E. (1998). *The theory of partitions* (No. 2).
- Anthony Jnr, B., Abdul Majid, M., & Romli, A. (2019). Green information technology adoption towards a sustainability policy agenda for government-based institutions. *Journal of Science and Technology Policy Management*, 10(2), 274-300. doi:10.1108/JSTPM-11-2017-0056
- Anthony Jr, B., Abdul Majid, M., & Romli, A. (2018). A collaborative agent based green IS practice assessment tool for environmental sustainability attainment in enterprise data centers. *Journal of Enterprise Information Management*, 31(5), 771-795. doi:10.1108/JEIM-10-2017-0147
- Aquilani, B., Silvestri, C., Ruggieri, A., & Gatti, C. (2017). A systematic literature review on total quality management critical success factors and the identification of new avenues of research. *The TQM Journal*.
- Aragón-Correa, J. A. (1998). Strategic proactivity and firm approach to the natural environment. *Academy of management Journal*, 41(5), 556-567.
- Aragón-Correa, J. A., & Sharma, S. (2003). A contingent resource-based view of proactive corporate environmental strategy. *Academy of management review*, 28(1), 71-88.
- Arbuckle, J. L. (2003). Amos 5.0 Update to the Amos. *Chicago: Small Water Corporation*.
- Arenas, A. E., Goh, J. M., & Urueña, A. (2019). How does IT affect design centricity approaches: Evidence from Spain's smart tourism ecosystem. *International Journal of Information Management*, 45, 149-162.
- Asadi, S., Pourhashemi, S. O., Nilashi, M., Abdullah, R., Samad, S., Yadegaridehkordi, E., ... & Razali, N. S. (2020). *Investigating influence of green innovation on sustainability performance: A case on Malaysian hotel industry*. *Journal of cleaner production*, 258, 120-860.
- Ashrafi, R., & Mueller, J. (2015). Delineating IT Resources and Capabilities to Obtain Competitive Advantage and Improve Firm Performance. *Information Systems Management*, 32(1), 15-38. doi:10.1080/10580530.2015.983016
- Assefa, G., & Frostell, B. (2007). Social sustainability and social acceptance in technology assessment: A case study of energy technologies. *Technology in society*, 29(1), 63-78.
- Augustyn, M. M., & Seakhwa-King, A. (2005). IS THE SERVQUAL SCALE AN ADEQUATE MEASURE OF QUALITY IN LEISURE, TOURISM AND

- HOSPITALITY?', *Advances in Hospitality and Leisure* (Advances in Hospitality and Leisure, Volume 1). In: Emerald Group Publishing Limited.
- Awwad, M. S., & Agti, D. A. M. (2011). The impact of internal marketing on commercial banks' market orientation. *International Journal of Bank Marketing*.
- Ayuso, S. (2006). Adoption of voluntary environmental tools for sustainable tourism: analysing the experience of Spanish hotels. *Corporate Social Responsibility and Environmental Management*, 13(4), 207-220. doi:10.1002/csr.103
- Babu, D. E., Kaur, A., & Rajendran, C. (2018). Sustainability practices in tourism supply chain: Importance performance analysis. *Benchmarking: An International Journal*. 25(4), 1148-1170. doi.org/10.1108/BIJ-06-2016-0084
- Bai, B., Yoo, B., Deng, X., Kim, I., & Gao, D. (2016). Linking routines to the evolution of IT capability on agent-based modeling and simulation: a dynamic perspective. *Computational and Mathematical Organization Theory*, 22(2), 184-211. doi:http://dx.doi.org/10.1007/s10588-015-9202-0
- Bhalla, G., & Lin, L. Y. (1987). Crops-cultural marketing research: A discussion of equivalence issues and measurement strategies. *Psychology & Marketing* (1986-1998), 4(4), 275.
- Bansal, P. (2005). Evolving sustainably: a longitudinal study of corporate sustainable development. *Strategic management journal*, 26(3), 197-218. doi:https://doi.org/10.1002/smj.441
- Bansal, P., & Clelland, I. (2004). Talking trash: Legitimacy, impression management, and unsystematic risk in the context of the natural environment. *Academy of management Journal*, 47(1), 93-103.
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120. doi:10.1177/014920639101700108
- Barrett, P. (2007). Structural equation modelling: Adjudging model fit. *Personality and Individual differences*, 42(5), 815-824.
- Batista, L., Bourlakis, M., Smart, P., & Maull, R. (2018). In search of a circular supply chain archetype - a content-analysis-based literature review. *Production Planning & Control*, 29(6), 438-451. doi:10.1080/09537287.2017.1343502
- Benavides-Velasco, C. A., Quintana-García, C., & Marchante-Lara, M. (2014). Total quality management, corporate social responsibility and performance in the hotel industry. *International Journal of Hospitality Management*, 41, 77-87.
- Bentler, P. M., & Satorra, A. (2010). Testing model nesting and equivalence. *Psychological Methods*, 15(2), 111-123.
- Bhalla, G., & Lin, L. Y. (1987). Crops-cultural marketing research: A discussion of equivalence issues and measurement strategies. *Psychology & Marketing* (1986-1998), 4(4), 275.
- Bharadwaj, A. S. (2000). A Resource-Based Perspective on Information

- Technology Capability and Firm Performance: An Empirical Investigation. *MIS Quarterly*, 24(1), 169-196. doi:10.2307/3250983
- Bhatt, G. D., & Grover, V. (2005). Types of information technology capabilities and their role in competitive advantage: An empirical study. *Journal of management information systems*, 22(2), 253-277.
- Bi, R., Davison, R. M., & Smyrnios, K. X. (2017). E-business and fast growth SMEs. *Small Business Economics*, 48(3), 559-576.
- Bilgihan, A., Okumus, F., Khal" Nusair, K., & Joon-Wuk Kwun, D. (2011). Information technology applications and competitive advantage in hotel companies. *Journal of Hospitality and Tourism Technology*, 2(2), 139-153. doi:10.1108/17579881111154245
- Bilgihan, A., Okumus, F., Khaldoun "Khal, N., & Kwun, D. J.-W. (2011). Information technology applications and competitive advantage in hotel companies. *Journal of Hospitality and Tourism Technology*, 2(2), 139-153. doi:http://dx.doi.org/10.1108/17579881111154245
- Birkel, H. S., Veile, J. W., Müller, J. M., Hartmann, E., & Voigt, K.-I. (2019). Development of a risk framework for Industry 4.0 in the context of sustainability for established manufacturers. *Sustainability*, 11(2), 384.
- Bollen, K. A. (1990). Overall fit in covariance structure models: Two types of sample size effects. *Psychological bulletin*, 107(2), 256.
- Bollen, K. A., & Stine, R. (1990). Direct and indirect effects: Classical and bootstrap estimates of variability. *Sociological methodology*, 115-140.
- Bowen, N. K., & Guo, S. (2011). *Structural equation modeling*: Oxford University Press.
- Brandt, M. J., IJzerman, H., Dijksterhuis, A., Farach, F. J., Geller, J., Giner-Sorolla, R., . . . Van't Veer, A. (2014). The replication recipe: What makes for a convincing replication? *Journal of Experimental Social Psychology*, 50, 217-224.
- Brockhaus, S., Fawcett, A. M., Fawcett, S. E., & Knemeyer, A. M. (2017). Motivations for environmental and social consciousness: Reevaluating the sustainability-based view. *Journal of Cleaner Production*, 143, 933-947. doi:10.1016/j.jclepro.2016.12.027
- Brockhaus, S., Kersten, W., & Knemeyer, A. M. (2013). Where do we go from here? Progressing sustainability implementation efforts across supply chains. *Journal of Business Logistics*, 34(2), 167-182.
- Bruntland, G. (1987). Report on reports: Our common future: The world commission on environment and development. *Environment: Science and Policy for Sustainable Development*, 29(5), 25-29.
- Bryman, A., & Bell, E. (2003). *Business Research Methods*.
- Busse, C., Schleper, M. C., Niu, M., & Wagner, S. M. (2016). Supplier development for sustainability: contextual barriers in global supply chains. *International Journal of Physical Distribution & Logistics Management*, 46(5), 442-468. doi:10.1108/IJPDLM-12-2015-0300
- Byrd, T. A., & Davidson, N. W. (2003). Examining possible antecedents of IT

- impact on the supply chain and its effect on firm performance. *Information & Management*, 41(2), 243-255.
- Byrne, B. M. (2010). Structural equation modeling with AMOS: basic concepts, applications, and programming (multivariate applications series). New York: Taylor & Francis Group, 396(1), 7384.
- Cabral, C., & Chiappetta Jabbour, C. J. (2019). Understanding the human side of green hospitality management. *International Journal of Hospitality Management*. doi:10.1016/j.ijhm.2019.102389
- Calero, C., García-Rodríguez De Guzmán, I., Moraga, M. A., & García, F. (2019). Is software sustainability considered in the CSR of software industry? *International Journal of Sustainable Development & World Ecology*, 26(5), 439-459. doi:10.1080/13504509.2019.1590746
- Callaway, S. K., Celuch, K., & Murphy, G. B. (2009). Strategic Flexibility and SMEs: The Role of Information Technology for Managing Internal and External Relations. *New England Journal of Entrepreneurship*, 12(1), 9-17.
- Callaway, S. K., & Jagani, S. B. (2015). Strategic Context for Internet Banking: How Traditional Banks Manage e-Commerce to Build IT Capabilities and Improve Performance. *Journal of Internet Banking and Commerce*, 20(1), 0_1,1-21.
- Cao, G., Duan, Y., Cadden, T., & Minocha, S. (2016). Systemic capabilities: the source of IT business value. *Information Technology & People*, 29(3), 556-579. doi:10.1108/ITP-05-2014-0090
- Carmines, E. G., & Zeller, R. A. (1979). *Reliability and validity assessment* (Vol. 17): Sage publications.
- Cha, J., Newman, M., & Winch, G. (2015). Owner dynamic capabilities and benefits management in public information systems projects: A qualitative content analysis.
- Chahal, H., & Bakshi, P. (2016). Measurement of intellectual capital in the Indian banking sector. *Vikalpa*, 41(1), 61-73.
- Chan, E. S., & Hsu, C. H. (2016). Environmental management research in hospitality. *International Journal of Contemporary Hospitality Management*.
- Chan, R. Y., & Ma, K. H. (2017) *Impact of executive compensation on the execution of IT-based environmental strategies under competition*, *European Journal of Information Systems*. 26(5), 489-508. doi: 10.1057/s41303-017-0052-3
- Chen, C., Lim, J.-H., & Stratopoulos, T. C. (2011). IT capability and a firm's ability to recover from losses:Evidence from the economic downturn of the early 2000s. *Journal of Information Systems*, 25(2), 117-144. doi:10.2308/isys-10108
- Chen, R. J., & Barrows, C. W. (2015). Developing a mystery shopping measure to operate a sustainable restaurant business: The power of integrating with corporate executive members' feedback. *Sustainability*, 7(9), 12279-12294.
- Cheng, J. S., & Lin, Y. C. (2014). Effects of service quality on organizational performance. *Pakistan journal of statistics*, 30(6). 30, 1131-1140.

- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural equation modeling*, 9(2), 233-255.
- Choi, H.-M., Kim, Y. J., Kim, W. G., & Agmapisarn, C. (2019). Hotel environmental management initiative (HEMI) scale development. *International Journal of Hospitality Management*, 77, 562-572. doi:10.1016/j.ijhm.2018.08.020
- Choo, P. W., Tan, C. L., & Yeo, S. F. (2018). A review of customer experience quality measurement in Malaysian heritage hotels. *Global Business and Management Research*, 10(1), 379-395.
- Choy, K. L., Gunasekaran, A., Lam, H. Y., Chow, K. H., Tsim, Y. C., Ng, T. W., . . . Lu, X. A. (2014). Impact of information technology on the performance of logistics industry: the case of Hong Kong and Pearl Delta region. *The Journal of the Operational Research Society*, 65(6), 904-916. doi:http://dx.doi.org/10.1057/jors.2013.121
- Clem, M., Theresa, N., & Ravichandran, M. (2013). Understanding golf country club members' loyalty: Factors affecting membership renewal decisions. *Hospitality Review*, 31(1), 4.
- Clemons, E. K., & Row, M. C. (1991). Sustaining IT advantage: The role of structural differences. *MIS quarterly*, 275-292.
- Cohen, J. (1992). A power primer. *Psychological bulletin*, 112(1), 155.
- Colbert, B. A., & Kurucz, E. C. (2007). Three conceptions of triple bottom line business sustainability and the role for HRM. *People and Strategy*, 30(1), 21.
- Connelly, L. M. (2008). Pilot studies. *Medsurg nursing*, 17(6), 411.
- Cooper, D. R., & Schindler, P. S. (2008). *Business Research Methods* (Vol. 6). New York: McGraw-Hill.
- Correia, E., Carvalho, H., Azevedo, S. G., & Govindan, K. (2017). Maturity models in supply chain sustainability: A systematic literature review. *Sustainability (Switzerland)*, 9(1), 64. doi:10.3390/su9010064
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (Vol. 3). Thousand Oaks, CA: Sage publications.
- Cruz, J. M., & Wakolbinger, T. (2008). Multiperiod effects of corporate social responsibility on supply chain networks, transaction costs, emissions, and risk. *International journal of production economics*, 116(1), 61-74.
- Cvelbar, L. K., & Dwyer, L. (2013). An importance-performance analysis of sustainability factors for long-term strategy planning in Slovenian hotels. *Journal of Sustainable Tourism*, 21(3), 487-504.
- Daellenbach, U., Sharma, S., & Vredenburg, H. (1998). A dynamic theory of corporate reputation formation and stability. *Halifax, Nova Scotia: St. Mary's University*.
- Dai, W. D., Mao, Z. E., Zhao, X. R., & Mattila, A. S. (2015). How does social capital influence the hospitality firm's financial performance? The moderating role of entrepreneurial activities. *International Journal of*

- Hospitality Management*, 51, 42-55.
- Dao, V., Langella, I., & Carbo, J. (2011). From green to sustainability: Information Technology and an integrated sustainability framework. *Journal of Strategic Information Systems*, 20(1), 63-79. doi:10.1016/j.jsis.2011.01.002
- Darnall, N., & Edwards Jr, D. (2006). Predicting the cost of environmental management system adoption: the role of capabilities, resources and ownership structure. *Strategic management journal*, 27(4), 301-320.
- Davis-Sramek, B., Krotov, K., & Germain, R. (2016). Predicting technology integration and performance in transition economies: insights from Russia. *International Journal of Physical Distribution & Logistics Management*, 46(2), 128-152. doi:http://dx.doi.org/10.1108/IJPDLM-10-2014-0252
- Day, G. S. (1994). The capabilities of market-driven organizations. *Journal of marketing*, 58(4), 37-52.
- Debnath, S. (2018). Green IS–information system framework to support environmental sustainability of firms. *International Journal of Business Information Systems*.
- DeFranco, A., & Schmidgall, R. S. (2014). Management practices of club financial executives. *Journal of Human Resources in Hospitality & Tourism*, 13(3), 277-296.
- Dess, G. G., & Beard, D. W. (1984). Dimensions of Organizational Task Environments. *Administrative Science Quarterly*, 29(1), 52-73. doi:10.2307/2393080
- Dhir, A., Talwar, S., Kaur, P., & Malibari, A. (2020). Food waste in hospitality and food services: A systematic literature review and framework development approach. *Journal of Cleaner Production*, 270, 122-861.
- Dong, L., Neufeld, D., & Higgins, C. (2009). Top management support of enterprise systems implementations. *Journal of Information Technology*, 24(1), 55-80.
- Donkor, J., Donkor, G. N. A., & Kankam-Kwarteng, C. (2017). STRATEGIC PLANNING AND FAMILY BUSINESS PERFORMANCE IN GHANA: MODERATING ROLE OF IT CAPABILITY. *Academy of Entrepreneurship Journal*, 23(2), 1-12.
- Dyer, N. G., Hanges, P. J., & Hall, R. J. (2005). Applying multilevel confirmatory factor analysis techniques to the study of leadership. *The leadership quarterly*, 16(1), 149-167.
- El-Borsaly, A., & Hassan, S. (2020). The impact of service quality on organizational performance in the mobile telecommunications sector in Egypt. *Proceedings on Engineering*, 2(1), 93-104.
- Elkington, J. (1994). Towards the sustainable corporation: Win-win-win business strategies for sustainable development. *California management review*, 36(2), 90-100.
- Elkington, J. (1998). *Cannibals with forks: the triple bottom line of 21st century business*. Stony Creek, CT; Gabriola Island, BC;: New Society Publishers.
- Elkington, J. (2001). The triple bottom line for 21st century business. *The*

- Earthscan reader in business and sustainable development*, 20-43.
- Ethiraj, S. K., Kale, P., Krishnan, M. S., & Singh, J. V. (2005). Where do capabilities come from and how do they matter? A study in the software services industry. *Strategic management journal*, 26(1), 25-45.
- Fairfield, K. D., Harmon, J., & Behson, S. J. (2011). Influences on the organizational implementation of sustainability: an integrative model. *Organization Management Journal*, 8(1), 4-20. doi:10.1057/omj.2011.3
- Ferraris, A., Monge, F., & Mueller, J. (2018). Ambidextrous IT capabilities and business process performance: an empirical analysis. *Business Process Management Journal*, 24(5), 1077-1090. doi:http://dx.doi.org/10.1108/BPMJ-07-2017-0201
- Feather, J., McGillis Hall, L., Trbovich, P., & Baker, G. R. (2018). An integrative review of nurses' prosocial behaviours contributing to work environment optimization, organizational performance and quality of care. *Journal of nursing management*, 26(7), 769-781.
- Fiedler, F. E. (1967). *A theory of leadership effectiveness*: McGraw-Hill.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics*: sage.
- Fink, L. (2011). How do IT capabilities create strategic value? Toward greater integration of insights from reductionistic and holistic approaches. *European Journal of Information Systems*, 20(1), 16-33. doi:http://dx.doi.org/10.1057/ejis.2010.53
- Fink, L., & Neumann, S. (2007). Gaining Agility through IT Personnel Capabilities: The Mediating Role of IT Infrastructure Capabilities *. *Journal of the Association for Information Systems*, 8(8), 440-448,451-452,454-460,462.
- Foerstl, K., Meinlschmidt, J., & Busse, C. (2018). It's a match! Choosing information processing mechanisms to address sustainability-related uncertainty in sustainable supply management. *Journal of Purchasing and Supply Management*, 24(3), 204-217. doi:10.1016/j.pursup.2018.02.002
- Font, X., & Lynes, J. (2018). Corporate social responsibility in tourism and hospitality. *Journal of Sustainable Tourism*, 26(7), 1027-1042. doi:10.1080/09669582.2018.1488856
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. In: SAGE Publications Sage CA: Los Angeles, CA.
- Frohlich, M. T. (2002). Techniques for improving response rates in OM survey research. *Journal of operations management*, 20(1), 53-62.
- Fudo, Y., Matsumoto, S., Kashima, T., & Akiyoshi, M. (2014). *A study on sightseeing promotion with ICT from the viewpoint of sustainability*. Paper presented at the 2014 IEEE 7th International Workshop on Computational Intelligence and Applications (IWCIA).
- Fuisz-Kehrbach, S.-K. (2015). A three-dimensional framework to explore corporate sustainability activities in the mining industry: Current status and challenges ahead. *Resources Policy*, 46, 101-115.

doi:10.1016/j.resourpol.2014.10.009

- Gallagher, P., Ryan, C., Byrne, S., Kennedy, J., & O Mahony, D. (2008). STOPP (screening tool of older person's prescriptions) and START (screening tool to alert doctors to right treatment). Consensus validation. *International journal of clinical pharmacology and therapeutics*, 46(2), 72.
- García-Sánchez, E., García-Morales, V. J., & Bolívar-Ramos, M. T. (2017). The influence of top management support for ICTs on organisational performance through knowledge acquisition, transfer, and utilisation. *Review of Managerial Science*, 11(1), 19-51.
- Gäre, K., & Melin, U. (2011). SMEs need formative infrastructure for business transformation. *Journal of Enterprise Information Management*.
- Garrett Jr, R. P., & Neubaum, D. O. (2013). Top management support and Initial strategic assets: A dependency model for internal corporate venture performance. *Journal of Product Innovation Management*, 30(5), 896-915.
- Gartner, F. (2018). Enterprise IT spending statistics for 2018. Retrieved from <https://www.ironpaper.com/webintel/articles/enterprise-it-spending-statistics-for-2018/>
- Garvare, R., & Johansson, P. (2010). Management for sustainability—a stakeholder theory. *Total quality management*, 21(7), 737-744.
- Ghobakhloo, M., Azar, A., Fathi, M., Institutionen för, i., Forskningscentrum för Virtuella, s., & Högskolan i, S. (2018). Lean-green manufacturing: the enabling role of information technology resource. *Kybernetes*, 47(9), 1752-1777. doi:10.1108/K-09-2017-0343
- Gladwin, T. N., Kennelly, J. J., & Krause, T.-S. (1995). Shifting Paradigms for Sustainable Development: Implications for Management Theory and Research. *The Academy of Management Review*, 20(4), 874-907. doi:10.2307/258959
- Goh, M., Prakash, S., & Yeo, R. (2007). Resource-based approach to IT shared services in a manufacturing firm. *Industrial Management & Data Systems*, 107(2), 251. doi:http://dx.doi.org/10.1108/02635570710723831
- Gokarn, S., & Kuthambalayan, T. S. (2019). Creating sustainable fresh produce supply chains by managing uncertainties. *Journal of Cleaner Production*, 207, 908-919.
- González-Rodríguez, M. R., Díaz-Fernández, M. C., & Font, X. (2020). Factors influencing willingness of customers of environmentally friendly hotels to pay a price premium. *International Journal of Contemporary Hospitality Management*.
- Gounaris, S. P., Stathakopoulos, V., & Athanassopoulos, A. D. (2003). Antecedents to perceived service quality: an exploratory study in the banking industry. *International journal of bank marketing*, 21(4), 168-190. doi:https://doi.org/10.1108/02652320310479178
- Govindaraju, R., Akbar, R., & Suryadi, K. (2018). IT Infrastructure Transformation and its Impact on IT Capabilities in the Cloud Computing Context. *International Journal on Electrical Engineering and Informatics*, 10(2),

- 395-405. doi:<http://dx.doi.org/10.15676/ijeei.2018.10.2.14>
- Grant, R. M. (1991). The Resource-Based Theory of Competitive Advantage: Implications for Strategy Formulation. *California Management Review*, 33(3), 114-135. doi:10.2307/41166664
- Gravetter, F., & Wallnau, L. (2014). Essentials of statistics for the behavioral sciences. Belmont, CA (8. Baski), USA.
- Gravetter, J., & Wallnau, B. (2014). Introduction to the t statistic. *Essentials of statistics for the behavioral sciences*, 8, 252.
- Griffin, A., & Hauser, J. R. (1992). Patterns of communication among marketing, engineering and manufacturing—A comparison between two new product teams. *Management Science*, 38(3), 360-373.
- Gundry, L. K., Kickul, J. R., Iakovleva, T., & Carsrud, A. L. (2014). Women-owned family businesses in transitional economies: key influences on firm innovativeness and sustainability. *Journal of Innovation and Entrepreneurship*, 3(1), 8. doi:10.1186/2192-5372-3-8
- Gupta, A., Singh, R. K., & Suri, P. K. (2018). Sustainable Service Quality Management by Logistics Service Providers: An Indian Perspective. *Global Business Review*, 19(3_suppl), S130-S150. doi:10.1177/0972150918758098
- Hagell, P. (2014). Testing rating scale unidimensionality using the principal component analysis (PCA)/t-test protocol with the Rasch model: the primacy of theory over statistics. *Open Journal of Statistics*, 4(6), 456-465.
- Haigh, N., & Hoffman, A. J. (2012). Hybrid organizations. The next chapter of sustainable business. *Organizational Dynamics*, 41(2), 126-134. doi:10.1016/j.orgdyn.2012.01.006
- Hair, J., Black, W., Babin, B., & Anderson, R. (2010). Multivariate data analysis (pp. 708-709). In: New Jersey: Pearson.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*: Sage publications.
- Hall, J. K., Daneke, G. A., & Lenox, M. J. (2010). Sustainable development and entrepreneurship: Past contributions and future directions. *Journal of business venturing*, 25(5), 439-448.
- Hardy, M. A. (2004). Handbook of data analysis.
- Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of management review*, 20(4), 986-1014.
- Hart, S. L., & Ahuja, G. (1996). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business strategy and the Environment*, 5(1), 30-37.
- Hart, S. L., & Milstein, M. B. (2003). Creating sustainable value. *Academy of Management Perspectives*, 17(2), 56-67.
- Hayes, A. F. (2013). Mediation, moderation, and conditional process analysis. introduction to mediation, moderation, and conditional process analysis: a regression-based approach. New York: Guilford Publications, 1-20.

- He, Q., Gallear, D., Ghobadian, A., & Ramanathan, R. (2019). Managing knowledge in supply chains: a catalyst to triple bottom line sustainability. *Production Planning & Control*, 30(5-6), 448-463. doi:10.1080/09537287.2018.1501814
- Henningsson, S., Yetton, P. W., & Wynne, P. J. (2018). A review of information system integration in mergers and acquisitions. *Journal of Information Technology*, 33(4), 255-303. doi:10.1057/s41265-017-0051-9
- Heroux, L. (2017). Comparative marketing strategies of fitness clubs in the United States and Canada. *Economics World*, 5(6), 529-538.
- Heskett, J. L., Jones, T. O., Loveman, G. W., Sasser, W. E., & Schlesinger, L. A. (1994). Putting the service-profit chain to work. *Harvard business review*, 72(2), 164-174.
- Hill, R. (1998). What sample size is "enough" in internet survey research. *Interpersonal Computing and Technology: An electronic journal for the 21st century*, 6(3-4), 1-12.
- Hofer, C. W., & Schendel, D. (1978). *Strategy Formulation, Analytical Concepts*, West, St Paul, MN.
- Hooper, D., Coughlan, J., & Mullen, M. (2008). *Evaluating model fit: a synthesis of the structural equation modelling literature*. Paper presented at the 7th European Conference on research methodology for business and management studies.
- Hopwood, B., Mellor, M., & O'Brien, G. (2005). Sustainable development: mapping different approaches. *Sustainable Development*, 13(1), 38-52. doi:10.1002/sd.244
- Howard, G., & Lubbe, S. (2012, 2012). *Synthesis of green IS frameworks for achieving strong environmental sustainability in organisations*.
- Howard, G. R., & Lubbe, S. (2012). *Synthesis of green is frameworks for achieving strong environmental sustainability in organisations*. Paper presented at the Proceedings of the South African Institute for computer scientists and information technologists conference.
- Hsieh, C.-M., Park, S. H., & Hitchcock, M. (2015). Examining the relationships among motivation, service quality and loyalty: The case of the National Museum of Natural Science. *Asia Pacific Journal of Tourism Research*, 20(sup1), 1505-1526.
- Hsu, C.-C., Tsaih, R.-H., & Yen, D. (2018). The Evolving Role of IT Departments in Digital Transformation. *Sustainability*, 10(10), 3706.
- Hsu, H.-Y., Liu, F.-H., Tsou, H.-T., & Chen, L.-J. (2019). Openness of technology adoption, top management support and service innovation: a social innovation perspective. *Journal of Business & Industrial Marketing*.
- Hu, L. t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*, 6(1), 1-55.
- Huang, J.-W., & Li, Y.-H. (2017). Green Innovation and Performance: The View of Organizational Capability and Social Reciprocity. *Journal of Business*

- Ethics*, 145(2), 309-324. doi:10.1007/s10551-015-2903-y
- Islam, A. N., Cenfetelli, R., & Benbasat, I. (2020). Organizational buyers' assimilation of B2B platforms: effects of IT-enabled service functionality. *The Journal of Strategic Information Systems*, 29(1), 101597.
- Ismail, E., & M., A. (2018). UAE is one of the world's top tourism destinations: Report. *Emirates New Agency*. Retrieved from <http://wam.ae/en/details/1395302728423>
- Jaakkola, S., Rautava, P., Alanen, P., Aromaa, M., Pienihäkkinen, K., Räihä, H., ... & Sillanpää, M. (2009). Dental fear: one single clinical question for measurement. *The open dentistry journal*, 3, 161.
- Jacks, T., Palvia, P., Schilhavy, R., & Wang, L. (2011). A framework for the impact of IT on organizational performance. *Business Process Management Journal*, 17(5), 846-870. doi:<http://dx.doi.org/10.1108/14637151111166213>
- Jarvie, M. E. (2016). Brundtland Report. Retrieved from <https://www.britannica.com/topic/Brundtland-Report>
- Jennings, P. D., & Zandbergen, P. A. (1995). Ecologically sustainable organizations: An institutional approach. *Academy of management review*, 20(4), 1015-1052.
- Jones, P., Hillier, D., & Comfort, D. (2016). Sustainability in the hospitality industry. *International Journal of Contemporary Hospitality Management*, 28(1), 36-67.
- Joreskog, K., & Sorbom, D. (1993). Structural Equation Modelling: Guidelines for Determining Model Fit. NY: *University Press of America*.
- Julious, S. A. (2005). Sample size of 12 per group rule of thumb for a pilot study. *Pharmaceutical Statistics: The Journal of Applied Statistics in the Pharmaceutical Industry*, 4(4), 287-291.
- Jurisch, M. C., Palka, W., Wolf, P., & Krcmar, H. (2014). Which capabilities matter for successful business process change? *Business Process Management Journal*, 20(1), 47-67. doi:<http://dx.doi.org/10.1108/BPMJ-11-2012-0125>
- Kamasak, R. (2017). The contribution of tangible and intangible resources, and capabilities to a firm's profitability and market performance. *European Journal of Management and Business Economics*.
- Kanwal, N., Zafar, M. S., & Bashir, S. (2017). The combined effects of managerial control, resource commitment, and top management support on the successful delivery of information systems projects. *International Journal of Project Management*, 35(8), 1459-1465.
- Kassinis, G. I., & Soteriou, A. C. (2015). Environmental and quality practices: using a video method to explore their relationship with customer satisfaction in the hotel industry. *Operations Management Research*, 8(3-4), 142-156.
- Kennedy, H. P., Farrell, T., Paden, R., Hill, S., Jolivet, R. R., Cooper, B. A., & Schindler Rising, S. (2011). A randomized clinical trial of group prenatal care in two military settings. *Military medicine*, 176(10), 1169-1177.

- Ketokivi, M., & Schroeder, R. (2004). Manufacturing practices, strategic fit and performance. *International Journal of Operations & Production Management*.
- Khatri, N. (2006). Building IT capability in health-care organizations. *Health Services Management Research*, 19(2), 73-79.
- Kirk, D. (1995). Environmental management in hotels. *International Journal of Contemporary Hospitality Management*, 7(6), 3-8. doi:10.1108/09596119510095325
- Kline, R. B. (2010). *Principles and practice of structural equation modeling* (Vol. 3): New York: Guilford Press.
- Knowles, T., Macmillan, S., Palmer, J., Grabowski, P., & Hashimoto, A. (1999). The development of environmental initiatives in tourism: responses from the London hotel sector. *International Journal of Tourism Research*, 1(4), 255-265. doi:10.1002/(SICI)1522-1970(199907/08)1:4<255::AID-JTR170>3.0.CO;2-8
- Ko, T. G. (2005). Development of a tourism sustainability assessment procedure: a conceptual approach. *Tourism Management*, 26(3), 431-445.
- Koch, J. V., & Cebula, R. J. (2002). Price, quality, and service on the internet: Sense and nonsense. *Contemporary Economic Policy*, 20(1), 25-37.
- Kraaijenbrink, J., Spender, J.-C., & Groen, A. J. (2010). The resource-based view: A review and assessment of its critiques. *Journal of Management*, 36(1), 349-372.
- Krstić, B., Kahrović, E., & Stanišić, T. (2015). Business process Management in Hotel Industry: A proposed framework for operating processes. *Ekonomika*, 61(4), 21-34.
- Kumar, V., & Christodouloupoulou, A. (2014). Sustainability and branding: An integrated perspective. *Industrial Marketing Management*, 43(1), 6-15. doi:10.1016/j.indmarman.2013.06.008
- Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and Integration in Complex Organizations. *Administrative Science Quarterly*, 12(1), 1-47. doi:10.2307/2391211
- Leal-Millán, A., Roldán, J. L., Leal-Rodríguez, A. L., & Ortega-Gutiérrez, J. (2016). IT and relationship learning in networks as drivers of green innovation and customer capital: Evidence from the automobile sector. *Journal of Knowledge Management*.
- Lebdaoui, H., & Chetoui, Y. (2020). CRM, service quality and organizational performance in the banking industry: a comparative study of conventional and Islamic banks. *International Journal of Bank Marketing*, 38(5), 1081-1106. doi:https://doi.org/10.1108/IJBM-09-2019-0344
- Lechler, S., Canzaniello, A., & Hartmann, E. (2019). Assessment sharing intra-industry strategic alliances: Effects on sustainable supplier management within multi-tier supply chains. *International Journal of Production Economics*, 217, 64-77. doi:10.1016/j.ijpe.2019.01.005
- Lee, H., & Choi, B. (2003). Knowledge management enablers, processes, and

- organizational performance: An integrative view and empirical examination. *Journal of management information systems*, 20(1), 179-228.
- Lee, L. S., & Anderson, R. M. (2006). An Exploratory Investigation of the Antecedents of the IT Project Management Capability¹. *E - Service Journal*, 5(1), 27-32,34-35,37-42.
- Lee, S., Geum, Y., Lee, H., & Park, Y. (2012). Dynamic and multidimensional measurement of product-service system (PSS) sustainability: a triple bottom line (TBL)-based system dynamics approach. *Journal of Cleaner Production*, 32, 173-182.
- Li, Rao, S. S., Ragu-Nathan, T., & Ragu-Nathan, B. (2005). Development and validation of a measurement instrument for studying supply chain management practices. *Journal of operations management*, 23(6), 618-641.
- Li, Y.-Q., & Liu, C.-H. S. (2018). The role of problem identification and intellectual capital in the management of hotels' competitive advantage-an integrated framework. *International Journal of Hospitality Management*, 75, 160-170.
- Liang, H., Saraf, N., Hu, Q., & Xue, Y. (2007). Assimilation of enterprise systems: the effect of institutional pressures and the mediating role of top management. *MIS quarterly*, 59-87.
- Lloyd-Walker, B., & Walker, D. (2011). Authentic leadership for 21st century project delivery. *International Journal of Project Management*, 29(4), 383-395. doi:10.1016/j.ijproman.2011.02.004
- Lockwood, C. M., & MacKinnon, D. P. (1998). *Bootstrapping the standard error of the mediated effect*. Paper presented at the Proceedings of the 23rd annual meeting of SAS Users Group International.
- Lu, Y., & Ramamurthy, K. (2011). Understanding the Link Between Information Technology Capability and Organizational Agility: An Empirical Examination. *MIS Quarterly*, 35(4), 931-954. doi:10.2307/41409967
- Lyver, M. J., & Ta-Jung, L. (2018). Sustaining Innovation Performance in SMEs: Exploring the Roles of Strategic Entrepreneurship and IT Capabilities. *Sustainability*, 10(2), 442. doi:http://dx.doi.org/10.3390/su10020442
- Macchion, L., Da Giau, A., Caniato, F., Caridi, M., Danese, P., Rinaldi, R., & Vinelli, A. (2018). Strategic approaches to sustainability in fashion supply chain management. *Production Planning & Control*, 29(1), 9-28. doi:10.1080/09537287.2017.1374485
- Machado, C. G., Pinheiro de Lima, E., Gouvea da Costa, S. E., Angelis, J. J., Mattioda, R. A., Industriell ekonomi och, o., . . . Industriell, M. (2017). Framing maturity based on sustainable operations management principles. *International Journal of Production Economics*, 190, 3-21. doi:10.1016/j.ijpe.2017.01.020
- Madhani, P. M. (2010). Resource based view (RBV) of competitive advantage: an overview. *Resource based view: concepts and practices*, Pankaj Madhani, ed, 3-22.
- Maijanen, P. (2020). 3 Approaches from strategic management: Resource-based view, knowledge-based view, and dynamic capability view. In *Management*

- and Economics of Communication* (pp. 47-68): De Gruyter Mouton.
- Majid, A., Yasir, M., Yousaf, Z., & Qudratullah, H. (2019). Role of network capability, structural flexibility and management commitment in defining strategic performance in hospitality industry. *International Journal of Contemporary Hospitality Management*.
- Maletič, D., Maletič, M., Dahlgaard, J. J., Dahlgaard-Park, S. M., Gomišček, B., Linköpings, u., . . . Institutionen för ekonomisk och industriell, u. (2014). Sustainability exploration and sustainability exploitation: from a literature review towards a conceptual framework. *Journal of Cleaner Production*, 79, 182-194. doi:10.1016/j.jclepro.2014.05.045
- Mandal, S. (2018). Influence of human capital on healthcare agility and healthcare supply chain performance. *The Journal of Business & Industrial Marketing*, 33(7), 1012-1026. doi:http://dx.doi.org/10.1108/JBIM-06-2017-0141
- Maniadis, Z., Tufano, F., & List, J. A. (2017). To replicate or not to replicate? Exploring reproducibility in economics through the lens of a model and a pilot study. In: Oxford University Press Oxford, UK.
- Marchi, V. D., Maria, E. D., & Micelli, S. (2013). Environmental Strategies, Upgrading and Competitive Advantage in Global Value Chains. *Business Strategy and the Environment*, 22(1), 62-72. doi:10.1002/bse.1738
- Marcoulides, G. A., & Hershberger, S. L. (1997). *Multivariate statistical methods: A first course*: Mahwah, NJ: Lawrence Erlbaum Associates.
- Marcus, A. A., & Anderson, M. H. (2006). A general dynamic capability: does it propagate business and social competencies in the retail food industry? *Journal of Management Studies*, 43(1), 19-46.
- Martinez-Conesa, I., Soto-Acosta, P., & Palacios-Manzano, M. (2017). Corporate social responsibility and its effect on innovation and firm performance: An empirical research in SMEs. *Journal of Cleaner Production*, 142, 2374-2383. doi:10.1016/j.jclepro.2016.11.038
- Martinho, J. L., Gomes, C. F., & Yasin, M. M. (2016). The role of people and social context in promoting the IT organizational performance: Evidence from Portugal. *Personnel Review*, 45(5), 1087-1107. doi:http://dx.doi.org/10.1108/PR-02-2015-0034
- McAfee, A., & Brynjolfsson, E. (2008). Investing in the IT that makes a competitive difference. *Harvard business review*, 86(7/8), 98.
- McWilliams, A., Parhankangas, A., Coupet, J., Welch, E., & Barnum, D. T. (2016). Strategic decision making for the triple bottom line. *Business Strategy and the Environment*, 25(3), 193-204.
- Meade, A. W., & Lautenschlager, G. J. (2004). A comparison of item response theory and confirmatory factor analytic methodologies for establishing measurement equivalence/invariance. *Organizational research methods*, 7(4), 361-388.
- Melissen, F., Cavagnaro, E., Damen, M., & Düweke, A. (2016). Is the hotel industry prepared to face the challenge of sustainable development? *Journal of Vacation Marketing*, 22(3), 227-238.

- Melville, N., Kraemer, K., & Gurbaxani, V. (2004). Information technology and organizational performance: An integrative model of IT business value. *MIS Quarterly*, 28(2), 283-322.
- Meqdadi, O. A., Johnsen, T. E., & Johnsen, R. E. (2019). Power and Diffusion of Sustainability in Supply Networks: Findings from Four In-Depth Case Studies. *Journal of Business Ethics*, 159(4), 1089-1110. doi:10.1007/s10551-018-3835-0
- Metaxas, I. N., Chatzoglou, P. D., & Koulouriotis, D. E. (2019). Proposing a new modus operandi for sustainable business excellence: the case of Greek hospitality industry. *Total Quality Management & Business Excellence*, 30(5-6), 499-524. doi:10.1080/14783363.2017.1315934
- Metz, P., Burek, S., Hultgren, T. R., Kogan, S., & Schwartz, L. (2016). The path to sustainability-driven innovation. *Research Technology Management*, 59(3), 50-61. doi:10.1080/08956308.2016.1161409
- Michael, N., Reisinger, Y., & Hayes, J. P. (2019). The UAE's tourism competitiveness: A business perspective. *Tourism Management Perspectives*, 30, 53-64.
- Michelino, F., Cammarano, A., Celone, A., & Caputo, M. (2019). The Linkage between Sustainability and Innovation Performance in IT Hardware Sector. *Sustainability*, 11(16), 4275. doi:10.3390/su11164275
- Miller, D., & Shamsie, J. (1999). Strategic responses to three kinds of uncertainty: Product line simplicity at the Hollywood film studios. *Journal of Management*, 25(1), 97-116. doi:https://doi.org/10.1016/S0149-2063(99)80005-1
- Miller, J. G., & Roth, A. V. (1994). A taxonomy of manufacturing strategies. *Management science*, 40(3), 285-304.
- Moorman, C., & Rust, R. T. (1999). The role of marketing. *Journal of marketing*, 63(4_suppl1), 180-197.
- Mori, K., & Christodoulou, A. (2012). Review of sustainability indices and indicators: Towards a new City Sustainability Index (CSI). *Environmental impact assessment review*, 32(1), 94-106.
- Mouzughi, Y., Bryde, D., & Al-Shaer, M. (2014). The role of real estate in sustainable development in developing countries: The case of the Kingdom of Bahrain. *Sustainability*, 6(4), 1709-1728.
- Mullens, D. (2018). Entrepreneurial orientation and sustainability initiatives in family firms. *Journal of global responsibility*.
- Müller, A.-L., & Pfleger, R. (2014). Business transformation towards sustainability. *Business Research*, 7(2), 313-350. doi:10.1007/s40685-014-0011-y
- Muthén, B. O. (1989). Latent variable modeling in heterogeneous populations. *Psychometrika*, 54(4), 557-585.
- Muturi, D., Sagwe, J., & Namukasa, J. (2013). The influence of airline service quality on passenger satisfaction and loyalty. *The TQM Journal*.
- Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business

- profitability. *Journal of marketing*, 54(4), 20-35.
- Nazir, S., & Pinsonneault, A. (2012). IT and firm agility: an electronic integration perspective. *Journal of the Association for Information Systems*, 13(3), 2.
- Neuman, W. L. (2006). *Workbook for Neumann Social research methods: qualitative and quantitative approaches*: Allyn & Bacon.
- Nevo, S., & Wade, M. R. (2010). The Formation and Value of IT-Enabled Resources: Antecedents and Consequences of Synergistic Relationships. *MIS Quarterly*, 34(1), 163-183. doi:10.2307/20721419
- Newell, G. (2009). Developing a socially responsible property investment index for UK property companies. *Journal of Property Investment & Finance*, 27(5), 511-521. doi:10.1108/14635780910982368
- Nik Abdullah, N. H. (2019). The roles of strategic management accounting on heterogeneity of human capital, information technology capabilities and value creation.
- Njoroge, M., Anderson, W., & Mburu, O. (2019). Innovation strategy and economic sustainability in the hospitality industry. *The Bottom Line*, 32(4), 253-268. doi:10.1108/BL-03-2019-0080
- Nunnally, J. (1978). *Psychometric theory* (2nd edit.) mcgraw-hill. Hillsdale, NJ, 416.
- Nwankpa, J. K., & Datta, P. (2017). Balancing exploration and exploitation of IT resources: the influence of Digital Business Intensity on perceived organizational performance. *European Journal of Information Systems*, 26(5), 469-488. doi:http://dx.doi.org/10.1057/s41303-017-0049-y
- Omar, H., Ali, M., & Jaharadak, A. (2019). Green supply chain integrations and corporate sustainability. *Uncertain Supply Chain Management*, 7(4), 713-726.
- Ong, C.-S., & Chen, P.-Y. (2016). A VALUATION MODEL FOR INFORMATION TECHNOLOGY CAPABILITY-ENABLED FIRM VALUE. *The Journal of Computer Information Systems*, 56(2), 137-144.
- Ong, C.-S., & Chen, P. (2013). Information technology capability-enabled performance, future performance, and value. *Industrial Management & Data Systems*, 113(5), 669-682. doi:http://dx.doi.org/10.1108/02635571311324133
- Ong, C.-S., & Po-Yen, C. (2014). The effects of IT: from performance to value. *Industrial Management & Data Systems*, 114(1), 70-85. doi:http://dx.doi.org/10.1108/IMDS-01-2013-0005
- Panda, S., & Rath, S. K. (2017). The effect of human IT capability on organizational agility: an empirical analysis: MRN MRN. *Management Research Review*, 40(7), 800-820.
- Parasuraman, A., Zeithaml, W., Berry, L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4), 41-50.
- Park, J., Jeong Kim, H., & McCleary, K. W. (2014). The impact of top management's environmental attitudes on hotel companies' environmental

- management. *Journal of Hospitality & Tourism Research*, 38(1), 95-115.
- Pasape, L., Anderson, W., & Lindi, G. (2015). Assessment of indicators of sustainable ecotourism in Tanzania. *Anatolia*, 26(1), 73-84.
- Payne, L. (2010). Motivating Sustainability Literacy. *Innovation in Teaching and Learning in Information and Computer Sciences*, 9(2), 1-10. doi:10.11120/ital.2010.09020005
- Penrose, E., & Penrose, E. T. (2009). *The Theory of the Growth of the Firm*: Oxford university press.
- Perrigot, R., & Pénard, T. (2013). Determinants of e-commerce strategy in franchising: A resource-based view. *International Journal of Electronic Commerce*, 17(3), 109-130.
- Petter, S., DeLone, W., & McLean, E. R. (2013). Information systems success: The quest for the independent variables. *Journal of management information systems*, 29(4), 7-62.
- Phama, T. L., & Jordanb, E. (2009). Information technology resources and business performance: An Australian context. *Asia Pacific Management Review*, 14(4), 407-426.
- Phillips, L. W. (1981). Assessing measurement error in key informant reports: A methodological note on organizational analysis in marketing. *Journal of marketing research*, 18(4), 395-415.
- Pillai, R., & Al-Malkawi, H.-A. N. (2018). On the relationship between corporate governance and firm performance: Evidence from GCC countries. *Research in International Business and Finance*, 44, 394-410.
- 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.
- Porter, M. E., & Kramer, M. R. (2006). The link between competitive advantage and corporate social responsibility. *Harvard business review*, 84(12), 78-92.
- Porter, M. E., & van der Linde, C. (1995). Toward a New Conception of the Environment-Competitiveness Relationship. *Journal of Economic Perspectives*, 9(4), 97-118. doi:10.1257/jep.9.4.97
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior research methods, instruments, & computers*, 36(4), 717-731.
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate behavioral research*, 42(1), 185-227.
- Prud'homme, B., & Raymond, L. (2016a). Implementation of sustainable development practices in the hospitality industry. *International Journal of Contemporary Hospitality Management*.
- Prud'homme, B., & Raymond, L. (2016). Implementation of sustainable development practices in the hospitality industry: A case study of five

- Canadian hotels. *International Journal of Contemporary Hospitality Management*.
- Pye, J., & Rai, A. (2014). How Can IT Enable the Simultaneous Pursuit of Green and Business Outcomes?: An Investigation of Smart Grid Innovations.
- Quaadgras, A., Weill, P., & Ross, J. W. (2014). Management commitments that maximize business impact from IT. *Journal of Information Technology*, 29(2), 114-127. doi:http://dx.doi.org/10.1057/jit.2014.7
- Ramón-Jerónimo, M. A., & Herrero, I. (2017). Capturing Firms' Heterogeneity through Marketing and IT Capabilities in SMEs. *Sustainability*, 9(12), 2180. doi:http://dx.doi.org/10.3390/su9122180
- Rapert, M. I., & Wren, B. M. (1998). Service quality as a competitive opportunity. *Journal of Services Marketing*, 12(3), 223-235. doi:https://doi.org/10.1108/08876049810219539
- Ray, G., Muhanna, W. A., & Barney, J. B. (2005). Information technology and the performance of the customer service process: A resource-based analysis. *MIS Quarterly*, 625-652.
- Raymond, L., Sylvestre, U., Fabi, B., & St-Pierre, J. (2018). IT capabilities for product innovation in SMEs: a configurational approach. *Information Technology and Management*, 19(1), 75-87. doi:http://dx.doi.org/10.1007/s10799-017-0276-x
- Real, J. C., Leal, A., & Roldán, J. L. (2006). Information technology as a determinant of organizational learning and technological distinctive competencies. *Industrial Marketing Management*, 35(4), 505-521.
- Rehman, N., Nor, M. N. M., Taha, A. Z., & Mahmood, S. (2018). IMPACT OF INFORMATION TECHNOLOGY CAPABILITIES ON FIRM PERFORMANCE: UNDERSTANDING THE MEDIATING ROLE OF CORPORATE ENTREPRENEURSHIP IN SMES. *Academy of Entrepreneurship Journal*, 24(3), 1-19.
- Reisinger, Y., Michael, N., & Hayes, J. P. (2018). Destination competitiveness from a tourist perspective: A case of the United Arab Emirates. *International Journal of Tourism Research*. doi:10.1002/jtr.2259
- Rhou, Y., & Singal, M. (2020). A review of the business case for CSR in the hospitality industry. *International Journal of Hospitality Management*, 84, 102330.
- Rodríguez-Díaz, M., & Espino-Rodríguez, T. F. (2006). Developing relational capabilities in hotels. *International Journal of Contemporary Hospitality Management*, 18(1), 25-40. doi:10.1108/09596110610641957
- Roscoe, J. T. (1975). *Fundamental research statistics for the behavioral sciences [by] John T. Roscoe*.
- Ross, J. W., Beath, C. M., & Goodhue, D. L. (1996). Develop long-term competitiveness through IT assets. *Sloan management review*, 38(1), 31-42.
- Rueda-Manzanares, A., Aragón-Correa, J. A., & Sharma, S. (2008). The Influence of Stakeholders on the Environmental Strategy of Service Firms: The Moderating Effects of Complexity, Uncertainty and Munificence*. *British*

- Journal of Management*, 19(2), 185-203.
doi:<https://doi.org/10.1111/j.1467-8551.2007.00538.x>
- Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of management Journal*, 40(3), 534-559.
- Sapsford, R., & Jupp, V. (2006). *Data Collection and Analysis* (Vol. 2). London: Sage.
- Saunila, M., Nasiri, M., Ukko, J., & Rantala, T. (2019). Smart technologies and corporate sustainability: The mediation effect of corporate sustainability strategy. *Computers in Industry*, 108, 178-185.
- Schneider, S., & Sunyaev, A. (2016). Determinant factors of cloud-sourcing decisions: reflecting on the IT outsourcing literature in the era of cloud computing. *Journal of Information Technology*, 31(1), 1-31.
doi:<http://dx.doi.org/10.1057/jit.2014.25>
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of educational research*, 99(6), 323-338.
- Seddon, P., & Scheepers, R. (2006). Other-settings generalizability in IS research. *ICIS 2006 Proceedings*, 70.
- Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill building approach* (Vol. 5): West Sussex: John Wiley & Sons Ltd.
- Seuring, S. (2011). Supply chain management for sustainable products—insights from research applying mixed methodologies. *Business Strategy and the Environment*, 20(7), 471-484.
- Shah, K. U., & Arjoon, S. (2015). Through Thick and Thin? How Self-determination Drives the Corporate Sustainability Initiatives of Multinational Subsidiaries. *Business Strategy and the Environment*, 24(6), 565-582. doi:10.1002/bse.1838
- Skogland, I., & Siguaw, J. A. (2004). Are your satisfied customers loyal? *Cornell Hotel and Restaurant Administration Quarterly*, 45(3), 221-234.
- Sohail, M. S. (2003). Service quality in hospitals: more favourable than you might think. *Managing Service Quality: An International Journal*.
- Soltany, Z., Rostamzadeh, R., & Skrickij, V. (2018). A model to evaluate supply chain technology implementation influence on organizational performance. *Transport*, 33(3), 779-792.
doi:<http://dx.doi.org/10.3846/transport.2018.5468>
- Soto-Acosta, P., Colomo-Palacios, R., & Popa, S. (2014). Web knowledge sharing and its effect on innovation: an empirical investigation in SMEs. *Knowledge Management Research & Practice*, 12(1), 103-113.
- Subic, A., Shabani, B., Hedayati, M., & Crossin, E. (2012). Capability framework for sustainable manufacturing of sports apparel and footwear. *Sustainability*, 4(9), 2127-2145. doi:10.3390/su4092127
- Subramaniam, M., & Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management journal*,

48(3), 450-463.

- Suhaeni, T., & Sosianika, A. (2018). *Sustainability in Accommodation Service Industry: The Role of Quality and Value*. Paper presented at the MATEC Web of Conferences.
- Sulphey, M., & Alkahtani, N. S. (2017). ORGANIZATIONAL AMBIDEXTERITY AS A PRELUDE TO CORPORATE SUSTAINABILITY. *Journal of Security & Sustainability Issues*, 7(2).
- Tabachnick, B. G., & Fidell, L. S. (2013). Using multivariate statistics: International edition. *Pearson*2012.
- Tang, T.-W. (2014). Becoming an ambidextrous hotel: The role of customer orientation. *International Journal of Hospitality Management*, 39, 1-10.
- Tang, T.-W. (2016). Making innovation happen through building social capital and scanning environment. *International Journal of Hospitality Management*, 56, 56-65.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18(7), 509-533. doi:10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z
- TheUAE'sGovernmentPortal. (2019, 08 Sep 2019). Tourism and economy. Retrieved from <https://www.government.ae/en/information-and-services/visiting-and-exploring-the-uae/travel-and-tourism>
- Thompson, C. A., Kopelman, R. E., & Schriesheim, C. A. (1992). Putting all one's eggs in the same basket: A comparison of commitment and satisfaction among self- and organizationally employed men. *Journal of applied psychology*, 77(5), 738-743.
- Thöni, A., & Tjoa, A. M. (2017). Information technology for sustainable supply chain management: a literature survey. *Enterprise Information Systems*, 11(6), 828-858. doi:10.1080/17517575.2015.1091950
- Thorstad, R., & Wolff, P. (2018). A big data analysis of the relationship between future thinking and decision-making. *Proceedings of the National Academy of Sciences*, 115(8), E1740-E1748.
- Thyer, B. A. (2001). What is the role of theory in research on social work practice? *Journal of Social Work Education*, 37(1), 9-25.
- Tirgari, V. (2012). Information technology policies and procedures against unstructured data: A phenomenological study of information technology professionals. *Journal of Management Information and Decision Sciences*, 15(2), 87.
- Tomarken, A. J., & Waller, N. G. (2005). Structural equation modeling: Strengths, limitations, and misconceptions. *Annu. Rev. Clin. Psychol.*, 1, 31-65.
- TTCR. (2017). Travel & Tourism Competitiveness Report by WEF - Paving the way for a more sustainable and inclusive future.
- UAE tourism sector to hit Dh237b (2014). *Khaleej Times*. Retrieved from www.khaleejtimes.com/business/economy/uae-tourism-sector-to-hit-dh237b

- van de Wetering, R., Mikalef, P., & Helms, R. (2017). Driving organizational sustainability-oriented innovation capabilities: a complex adaptive systems perspective. *Current Opinion in Environmental Sustainability*, 28, 71-79. doi:10.1016/j.cosust.2017.08.006
- Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational research methods*, 3(1), 4-70.
- Vetráková, M., Hitka, M., Potkány, M., Lorincová, S., & Smerek, L. (2018). Corporate sustainability in the process of employee recruitment through social networks in conditions of Slovak small and medium enterprises. *Sustainability*, 10(5), 1670.
- Vetráková, M., Šimočková, I., & Pompurová, K. (2019). Age and Educational Diversification of Hotel Employees and Its Impact on Turnover. *Sustainability*, 11(19), 5434.
- Viglia, G., & Dolnicar, S. (2020). A review of experiments in tourism and hospitality. *Annals of Tourism Research*, 80, 102858.
- Vollenbroek, F. A. (2002). Sustainable development and the challenge of innovation. *Journal of Cleaner Production*, 10(3), 215-223.
- Wang, B. (2016). Sustainable organization capabilities in supply chain management.
- Wang, Y., & Feng, H. (2012). Customer relationship management capabilities: Measurement, antecedents and consequences. *Management Decision*.
- Wattanakamolchai, S., Singal, M., & Murrmann, S. K. (2016). Socially responsible customers and the evaluation of service quality. *Journal of Hospitality & Tourism Research*, 40(6), 715-738.
- Weill, P., Subramani, M., & Broadbent, M. (2002). IT infrastructure for strategic agility.
- Wernerfelt, B. (1984). A resource- based view of the firm. *Strategic management journal*, 5(2), 171-180.
- Whelan, T., & Fink, C. (2016). The comprehensive business case for sustainability. *Harvard Business Review*, 21(2016).
- Wijethilake, C. (2017). Proactive sustainability strategy and corporate sustainability performance: The mediating effect of sustainability control systems. *Journal of environmental management*, 196, 569-582.
- Williams, L. J., Gavin, M. B., & Hartman, N. S. (2004). Structural equation modeling methods in strategy research: Applications and issues. In *Research methodology in strategy and management*: Emerald Group Publishing Limited.
- Winsemius, P., & Guntram, U. (2002). Chapter 1: The Environmental Management Challenge. *A Thousand Shades of Green: Sustainable Strategies for Corporate Advantage*, 3-21.
- Wright, J. D., & Marsden, P. V. (2010). Survey research and social science: History, current practice, and future prospects. *Handbook of survey*

- research, 3-26.
- Wu, F., Yeniyurt, S., Kim, D., & Cavusgil, S. T. (2006). The impact of information technology on supply chain capabilities and firm performance: A resource-based view. *Industrial Marketing Management*, 35(4), 493-504.
- Wu, H.-C., & Ko, Y. J. (2013). Assessment of Service Quality in the Hotel Industry. *Journal of Quality Assurance in Hospitality & Tourism*, 14(3), 218-244. doi:10.1080/1528008X.2013.802557
- Yang, N., & Ha-Brookshire, J. E. (2019). Truly sustainable or not? An exploratory assessment of sustainability capability of textile and apparel corporations in China from the moral responsibility perspective. *Fashion and Textiles*, 6(1), 1-16. doi:10.1186/s40691-019-0172-6
- Zampou, E., & Pramatar, K. (2014, September). *Influencing Factors of Sharing Product-Related Environmental Information*. In MCIS (p. 24).
- Zhang, Y., & Hu, J. (2018). Research on Tourism Planning Education Model in Innovative Economy under the Background of Big Data. *Revista de Cercetare si Interventie Sociala*, 62, 306-330.
- Zhou, K.Z., Brown, J.R., Dev, C.S. (2009). Market orientation, competitive advantage, and performance: a demand-based perspective. *Journal of Business Research*, 62 (11), 1063–1070.
- Ziegler, M., & Hagemann, D. (2015). Testing the unidimensionality of items. In: Hogrefe Publishing.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). Business Research Method 8th ed. In: Cengage Learning.

APPENDIX A



Abu Dhabi University Ethical Approval

Date(mm/dd/yyyy)

File Number: COBA – 20-05-00008

05/02/2020

Ethical Approval Notice

Principal Investigator/ Supervisor/ Co-investigator(s) / Student(s)

<u>First Name</u>	<u>Last Name</u>	<u>Affiliation</u>	<u>Role</u>
Haseena	Al Katheeri	Abu Dhabi University	Principle Investigator
Dr. Fauzia	Jabeen	Abu Dhabi University	Co- Investigator

File Number:

COBA – 20-05-00008

Type of Project:

Doctorate Dissertation

Title: Role of IT Capabilities and Sustainability Practices on Service Quality and Firm Performance in UAE Hotels

Approval Date (mm/dd/yyyy)

05/02/2020

Expiry Date (mm/dd/yyyy)

05/01/2021

Special Conditions / Comments

NA

IRB Chair

Dr. Rania AL Dweik



APPENDIX B

The questionnaire

Influence of IT capabilities, sustainability practices, service quality and top management support on organizational performance in the UAE Hospitality Industry

Dear Valuable Participants,

Thank you for agreeing to participate in this survey. My name is Haseena Al Katheeri, I am a student at Abu Dhabi University pursuing my Doctorate Degree in Business Administration. The purpose of this research is to understand the role of IT capabilities in improving the organizational performance through sustainability practices, service quality and top management support in the hospitality industry in the UAE.

Please take few minutes to fill out this survey. I truly appreciate valuable feedback and your response will be kept confidential. Thank you for your input.

* 1. Age

- ☐ 20-30
☐ 31-40
☐ 41-50

☐ Above 50

* 2. Gender

☐ Male

☐ Female

* 3. Education

☐ Diploma

☐ Bachelor

☐ Master or above

* 4. Tenure

☐ 1-5 years

☐ 6-10 years

☐ More than 10 years

* 5. Firm size

☐ less than 500 employees

☐ 500-1000 employees

☐ More than 1000 employees

☐ Not sure

Relative to other hotels in your industry, please evaluate your hotel's IT capabilities in the following area on a scale of 1-5 (1: Strongly disagree; 5: Strongly agree)

1. The hotel's IT unit provides a wide range of channel management services (electronic channel to the customer or partner to support multiple applications, e.g., point of sale, Web sites, call centers, mobile computing)
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
2. The hotel's IT unit provides a wide range of security and risk management services (e.g. security policies, disaster planning, firewalls).
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
3. The hotel's IT unit provides a wide range of communication services (e.g., network services, broadband services, Intranet capabilities, Extranet capabilities, groupware)
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
4. The hotel's IT unit provides a wide range of data management services (e.g., key data independent of applications, centralized data warehouse, data management consultancy, storage area networks, knowledge

management)

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

5. The hotel's IT unit provides a wide range of application infrastructure services (centralized management of applications, middleware, mobile and wireless applications, ASP, workflow applications, payment transaction processing)

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree.

6. The hotel's IT unit provides a wide range of IT facilities management services (e.g., large-scale processing/mainframe, server farms, common systems development environment)

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

7. The hotel's IT unit provides a wide range of IT management services (e.g., IS planning, investment and monitoring, IS project management, negotiations with suppliers and outsourcees, service level agreements)

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
8. The hotel's IT unit provides a wide range of IT architecture and standards services (e.g., specify and enforce architectures and standards for: technologies, communications, data, applications, and work)
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
9. The hotel's IT unit provides a wide range of IT education services (e.g., training in the use of IT, management education for generating value from IT use)
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
10. The hotel's IT unit provides a wide range of IT research and development (R&D) services (e.g., identify and test new technologies for business purposes, evaluate proposals for new IS applications)
- ☐ Strongly agree

- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
11. The hotel's IT personnel are skilled in multiple structured programming, CASE methods, or tools
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
12. The hotel's IT personnel are skilled in distributed processing or distributed computing
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
13. The hotel's IT personnel are skilled in network management and maintenance
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree

- ☐ Strongly disagree
14. The hotel's IT personnel are skilled in developing Web-based applications
- ☐ Strongly agree
☐ Agree
☐ Neither agree nor disagree
☐ Disagree
- ☐ Strongly disagree
15. The hotel's IT personnel are skilled in data warehousing, mining, or marts
- ☐ Strongly agree
☐ Agree
☐ Neither agree nor disagree
☐ Disagree
- ☐ Strongly disagree
16. The hotel's IT personnel are self-directed and proactive
- ☐ Strongly agree
☐ Agree
☐ Neither agree nor disagree
☐ Disagree
- ☐ Strongly disagree
17. The hotel's IT personnel have the ability to plan, organize, and lead projects
- ☐ Strongly agree
☐ Agree

- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
18. The hotel's IT personnel have the ability to plan and execute work in a collective environment
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
19. The hotel's IT personnel work well in cross-functional teams addressing business problems
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
20. The hotel's IT personnel are cross-trained to support other IT services outside their primary knowledge domain
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
21. The Hotel's IT personnel are knowledgeable about the key success factors that must go right if the company is

to succeed.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

22. The hotel's IT personnel are encouraged to learn new information technologies

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

23. The Hotel's IT personnel closely follow the trends in current information technologies

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

24. The strategies of the hotel's IT unit and the company's strategies are well aligned

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

- ☐ Disagree
- ☐ Strongly disagree
25. The hotel's IT personnel understand the company's policies and plans
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
26. The hotel's IT personnel are able to interpret business problems and develop appropriate technical solutions
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
27. The hotel's IT personnel are knowledgeable about business functions
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

Relative to major competitors in hotel industry, please evaluate your hotel's sustainability practices in which of these are improved/developed during the past three years in responding to the following on a 1–5 scale (1: Strongly disagree; 5: Strongly agree)

28. Our hotel is promoting sustainable resources management (e.g., renewable energy).

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

29. Our hotel is reducing emissions into the air, water, and ground.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

30. Our hotel is promoting and preserving biodiversity.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

31. Our hotel is minimizing the environmental consequences of products and services.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
32. Our hotel is ensuring the health and safety of employees.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
33. Our hotel is investing in human capital development.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
34. Our hotel is promoting ethical behavior and protecting human rights.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree

- ☐ Disagree
- ☐ Strongly disagree
35. Our hotel is avoiding controversial, corrupt, or cartel activities.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
36. Our hotel is promoting corporate citizenship.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
37. Our hotel is promoting sustainability innovations.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
38. Our hotel is developing sustainability business processes.
- ☐ Strongly agree

- ☐ Agree
 - ☐ Neither agree nor disagree
 - ☐ Disagree
 - ☐ Strongly disagree
39. Engaging in sustainability learning and knowledge management.
- ☐ Strongly agree
 - ☐ Agree
 - ☐ Neither agree nor disagree
 - ☐ Disagree
 - ☐ Strongly disagree

Relative to other hotels in your industry, please evaluate your hotel's service quality in responding to the following on a 1–5 scale (1: Strongly disagree; 5: Strongly agree)

40. Our hotel usually generates new service ideas.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

41. Our hotel usually implements new service ideas.

- ☐ Strongly agree
- ☐ Agree

- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
42. Our hotel usually finds new ways to better serve our customers.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
43. Our hotel usually creates better service procedures.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
44. We are always working to improve the service for our customers in our hotel.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
45. We have specific ideas about how to improve the service for our customers in our hotel.

- ☐ Strongly agree
 - ☐ Agree
 - ☐ Neither agree nor disagree
 - ☐ Disagree
 - ☐ Strongly disagree
46. We often make suggestions about how to improve customer service in the hotel.
- ☐ Strongly agree
 - ☐ Agree
 - ☐ Neither agree nor disagree
 - ☐ Disagree
 - ☐ Strongly disagree

The top management in our hotel in the past three years in responding to the following on a 1–5 scale (1: Strongly disagree; 5: Strongly agree)

47. Cultivates information technology project champions in our hotel.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

48. Restructures work processes to leverage information technology opportunities in our hotel.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
49. Sponsors initiatives taken by the information technology department in our hotel.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
50. Ensures adequate funding of information technology research and development in our hotel.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
51. Facilitates technology transfer throughout our hotel.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree

- ☐ Disagree
- ☐ Strongly disagree

For the past 3 years, to what extent do the following statements reflect the current situation in your hotel by following a 1–5 scale (1: Strongly disagree; 5: Strongly agree)?

52. Make more profit than other hotels.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

53. We are able to increase sales growth than other hotels.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

54. We are able to increase revenue growth than other hotels.

- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree

- ☐ Disagree
- ☐ Strongly disagree
55. We are able to increase market share than other hotels.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree
56. Overall, we perform better than other hotels.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree