Exploring Service Quality Among US Hajj Pilgrims in Compliance with Vision 2030 Objectives

Majid Abdulmalik Alshaibi

University of Central Florida
EXPLORING SERVICE QUALITY AND SATISFACTION AMONG US HAJJ PILGRIMS IN COMPLIANCE WITH VISION 2030 OBJECTIVES

by

MAJID ABDULMALIK ALSHAIBI
MS Industrial Engineering, University of Central Florida, 2013
B.S. Electrical Engineering, KAU, Saudi Arabia, 2004

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Industrial Engineering and Management Systems in the College of Engineering and Computer Science at the University of Central Florida Orlando, Florida

Spring Term
2024

Major Professor: AHMAD K. ELSHENNAWY
Saudi Arabia is progressing with Vision 2030, an ambitious blueprint for economic variation, global connection, and improved quality of life. The Hajj pilgrimage is addressed by the Doyof Al Rahman Program (DARP), one of the vision’s programs aiming to enhance the Hajj experience. The Hajj pilgrimage is one of the world’s largest annual massive gatherings and it has already received increased attention from researchers combining elements of pilgrimage and tourism. This dissertation aims to explore Hajj service quality and pilgrims’ satisfaction. To attain this objective, a narrative and systematic literature review was conducted to develop a framework with standardized dimensions for Hajj with the consideration of Vision’s 2030 DARP program objectives. The conducted literature review considered 157 sources following the PRISMA review protocol in the analysis. A Delphi study distributed among fifteen experts processed the literature review findings to confirm the research instrument dimensions' priority, applicability, and clarity. The proposed dimensions were Hospitality, Guidance, Transportation, Hajj Facilities, Safety and security, and Healthcare. Those dimensions are dedicated to exploring Hajj Service Quality (HSQ) performance and its impact on the Hajj’s overall satisfaction and willingness to extend visits to heritage sites. The dissertation connected a confirmatory mixed research method in the Delphi study and data collection phases. The research survey contained 83 items distributed through the Qualtrics platform and yielded 149 valid responses from 17 U.S. states. After the data preparation, a Partial Least Square Structural Equation Modeling (PLS-SEM) analytical approach was deployed. First, the measurement model inspected the reliability and validity of the model constructs. Second is the structural model that tested the study hypothesis with path analysis a regression-based technique. The findings showed a significant impact from all the applied HSQ dimensions on Hajj overall satisfaction and a significant impact from Hajj facilities on the willingness to extend the visit to heritage sites.
First and foremost, I praise my gracious God and ask him to send his blessing upon his messengers.

Considering that I dedicate this humble dissertation to my great parents and family members, to everyone who spared no effort in helping me or wishing me good, and to everyone who ever taught me a single letter or is still doing so.
ACKNOWLEDGMENTS

This dissertation would not have been possible without the guidance and assistance of several individuals who significantly contributed to the preparation and completion of this research. I am indebted to my advisor Dr. Ahmad Elshennawy for his relentless encouragement and guidance throughout this journey. It was a great honor to work under his vision. I would also like to extend my appreciation to my outstanding committee members: Dr. Luis Rabelo, Dr. Gene Lee, Dr. Haitham Bahaitham, and Dr. Ibrahim Zieni, for their persistent support.

I would like to thank my supportive and caring parents who’ve been through a lot of struggle and pain from my short filial piety. Still, all my life I have been trying not to let your efforts go in vain and my intentions are always meant to make you proud in this life and the other.

I would also like to thank my family members for their patience and encouragement and my children. I hope they forgive me for the disturbance in their educational journey bottle necks, and I will never find my happens until I see you all have a successful and righteous life.

A very special thanks to all my supporting friends that have been a great addition to my life.
# TABLE OF CONTENTS

LIST OF FIGURES ................................................................. xi

LIST OF TABLES ......................................................................... xi

LIST OF ABBREVIATIONS ........................................................ xiii

CHAPTER ONE: INTRODUCTION .................................................. 1

  1.1 Introduction ........................................................................ 1
  1.2 Problem Statement .............................................................. 4
  1.3 Research Questions .............................................................. 4
  1.4 Research Objectives ............................................................. 5

CHAPTER TWO: LITERATURE REVIEW ........................................... 6

  2.1 Systematic Literature Review Approach ................................ 6
  2.2 Religious Tourism ............................................................... 8
    2.2.1 Hajj Pilgrimage and Religious Tourism Nexus .................. 10
    2.2.2 Hajj Event .................................................................... 13
      2.2.2.1 Hajj Quota System ..................................................... 13
      2.2.2.2 Hajj Processes ........................................................ 14
      2.2.2.3 Hajj Management ..................................................... 17
    2.2.3 Saudi Arabia Vision 2030 and DARP Program ............... 19
    2.3 Service Quality ............................................................... 21
      2.3.1 Aspects of Services ...................................................... 23
      2.3.2 Dimensions of Service Quality .................................... 25
      2.3.3 Service Quality in Tourism .......................................... 29
      2.3.4 Service Quality in Religious Tourism ......................... 33
      2.3.5 Service Quality in Hajj ............................................... 37
    2.4 Pilgrims Satisfaction ........................................................ 51
4.3.4 Healthcare Dimension ........................................................................................................ 117
4.3.5 Safety and Security Dimension .......................................................................................... 118
4.3.6 Hajj Facilities Dimension .................................................................................................. 119

4.4 Demographic Profile of Respondents .................................................................................. 121
4.4.1 Gender ............................................................................................................................... 121
4.4.2 State ................................................................................................................................... 122
4.4.3 Age ..................................................................................................................................... 124
4.4.4 Education ........................................................................................................................... 125
4.4.5 Participation Status ............................................................................................................. 126
4.4.6 Participation Numbers ......................................................................................................... 127
4.4.7 Hajj Package Class ............................................................................................................. 128
4.4.8 Hajj Package Cost ............................................................................................................... 129
4.4.9 Annual Income .................................................................................................................... 131

4.5 Qualitative Open-ended Question ......................................................................................... 132

4.6 PLS-SEM Models Analyses .................................................................................................. 134
4.6.1 The Measurement Model Reliability .................................................................................... 137
4.6.1.1 Factor Loading ............................................................................................................... 137
4.6.1.2 Construct Reliability ..................................................................................................... 140
4.6.2 The Measurement Model Validity ....................................................................................... 141
4.6.2.1 Convergent Validity ....................................................................................................... 141
4.6.2.2 Discriminant Validity .................................................................................................... 142
4.6.3 The Structural Model Hypothesis Testing .......................................................................... 146

4.5.4 Explanatory Power and Predictive Relevance .................................................................... 153

4.6.5 Control Variables ............................................................................................................... 154

4.7 Data Analysis and Findings Summary .................................................................................... 157

CHAPTER FIVE: DISCUSSION AND CONCLUSION ...................................................................... 161
5.1 Discussion .............................................................................................................................................. 161

5.1.1 Qualitative Results Discussion ......................................................................................................... 162

5.1.2 Quantitative Results Discussion ....................................................................................................... 163

5.1.2.1 Hospitality ................................................................................................................................... 163

5.1.2.2 Guidance .................................................................................................................................... 164

5.1.2.3 Transportation ............................................................................................................................. 165

5.1.2.4 Healthcare .................................................................................................................................. 165

5.1.2.5 Safety and Security ..................................................................................................................... 166

5.1.2.6 Hajj Facilities .............................................................................................................................. 167

5.1.2.7 Hajj Overall Satisfaction ............................................................................................................. 167

5.1.2.8 Willingness to Extend Visit ......................................................................................................... 168

5.2 Study Implications ............................................................................................................................... 168

5.3 Study Limitations and Future Directions .......................................................................................... 170

5.4 Conclusion ........................................................................................................................................... 172

APPENDIX A: IRB APPROVAL .................................................................................................................. 174

APPENDIX B: RESEARCH SURVEY ........................................................................................................... 176

LIST OF REFERENCES .............................................................................................................................. 188
LIST OF FIGURES

Figure 1: Search Flow Diagram using PRISMA Protocol ...................................................................................... 7
Figure 2: Hajj Overall Simplified Steps .............................................................................................................. 15
Figure 3: Routes of the Hajj pilgrimage Processes .............................................................................................. 17
Figure 4: Hajj Management Hierarchy Adapted from Ministry of Hajj and Umrah (2019) Organization
Chart .................................................................................................................................................................. 18
Figure 5: Hajj Guests Journey Promoted by DARP Program adapted from the program delivery plan .... 21
Figure 6: The First Service Quality Model adapted from (Gronroos, 1984) ....................................................... 26
Figure 7: Gap Analysis Model adapted from Parasuraman et al. (1985) ........................................................... 27
Figure 8: Frequency of Keywords in Tourism Literature ...................................................................................... 30
Figure 9: Research Design Processes ................................................................................................................ 63
Figure 10: Research Conceptual Framework .................................................................................................... 102
Figure 11: PLS-SEM Models and Variables ........................................................................................................ 107
Figure 12: Participants by Gender Bar Chart ...................................................................................................... 122
Figure 13: Participants by State Bar Chart .......................................................................................................... 123
Figure 14: Participants by Age Bar Chart ........................................................................................................... 124
Figure 15: Participants by Education Bar Chart ................................................................................................ 126
Figure 16: Participants by Participation Status Bar Chart ..................................................................................... 127
Figure 17: Participants by Participation numbers Bar Chart .............................................................................. 128
Figure 18: Participants by Hajj Package Bar Chart ............................................................................................. 129
Figure 19: Participants by Hajj Package Cost Bar Chart ..................................................................................... 130
Figure 20: Participants by Annual Income Bar Chart .......................................................................................... 131
Figure 21: PLS-SEM Model Constructs and indicators for Hajj service Quality .................................................. 136
Figure 22: SEM-PLS Model Algorithm Standardized Coefficients Results ...................................................... 145
Figure 23: The Structural Model Bootstrapping Results ................................................................................... 149
Figure 24: The Structural Model with the Control Variables ............................................................................ 157
LIST OF TABLES

Table 1: Research Included with Search Terms and Related Databases ................................................................. 6
Table 2: Twelve Years Hajj Participation Numbers in Millions Retrieved from Saudi General Authority of Statistics Website .................................................................................................................. 14
Table 3: Summary of Literature review on Service Quality in Hajj ........................................................................ 45
Table 4: Delphi Approach Round One Experts’ Means ............................................................................................ 65
Table 5: Delphi Approach Round Two Experts’ Means ............................................................................................ 69
Table 6: Delphi Approach Round Three Experts’ Means ......................................................................................... 93
Table 7: Hospitality Dimension Representation ..................................................................................................... 113
Table 8: Guidance Dimension Representation ....................................................................................................... 114
Table 9: Transportation Dimension Representation ................................................................................................ 116
Table 10: Healthcare Dimension Representation .................................................................................................. 117
Table 11: Safety and Security Dimension Representation ........................................................................................ 119
Table 12: Hajj Facilities Dimension Representation ................................................................................................ 120
Table 13: Gender Frequency Distribution ............................................................................................................... 121
Table 14: State Frequency Distribution ................................................................................................................... 122
Table 15: Age Frequency Distribution .................................................................................................................... 124
Table 16: Education Frequency Distribution .......................................................................................................... 125
Table 17: Participation Status Frequency Distribution ............................................................................................ 126
Table 18: Participation Numbers Frequency Distribution ........................................................................................ 128
Table 19: Hajj package Frequency Distribution ...................................................................................................... 129
Table 20: Hajj package Cost Frequency Distribution .............................................................................................. 130
Table 21: Annual Income Frequency Distribution .................................................................................................. 131
Table 22: Qualitative Data Themes ........................................................................................................................ 133
Table 23: Measurement Model Factor Loading ...................................................................................................... 138
Table 24: Measurement Model Construct Reliability ............................................................................................... 141
Table 25: Measurement Model Convergent Validity ............................................................................................... 141
Table 26: HTMT Ratios ........................................................................................................................................... 142
Table 27: Constructs Correlation and Diagonal AVE root ......................................................................................... 144
Table 28: Hypotheses Testing Results .................................................................................................................... 146
Table 29: The Structural model R² and Q² Results .................................................................................................. 154
Table 30: Hypotheses Testing Results with the Inclusion of Control Variables ........................................... 155
LIST OF ABBREVIATIONS

Doyof Al-Rahman Program (DARP)

Hajj Service Quality (HSQ)

Kingdom of Saudi Arabia (KSA)

Pilgrims Experience Program (PEP)

Peace Be Upon Them (PBUT)

Service Quality Instrument (SERVQUAL)

Service Performance Instrument (SERVPREF)
CHAPTER ONE: INTRODUCTION

1.1 Introduction

Hajj, the ritual pilgrimage to Makkah, existed through the course of history and initiated by Abraham and Ishmael (PBUUT) providential construction of the Kaaba (The sacred house) and the call for pilgrimage. Hajj season then shaped religious, political, and economic structure of the tribal community in the Arabian peninsula and the annual pilgrimage was the biggest source of local income before the discovery of oil in the Kingdom of Saudi Arabia (KSA) (Freitag, 2019; Peters, 1996).

Nowadays, Hajj is one of the world's largest annual massive gathering events with pilgrims from more than 184 countries across the globe and more than 3 million participating pilgrims. The Hajj pilgrimage is the fifth pillar of the Islamic faith, and it is compulsory for each financially and physically capable Muslim adult. Specifically, the gathering take place in the territory of Makkah sacred sites, and most pilgrims before or after performing their pilgrimage visit Prophet Muhammad (PBUH) tomb in Medina, the second holiest city in Islam. The time duration of annual Hajj event is also explicitly between the 8th and the 13th days of the last month of the Islamic lunar calendar known as Dul-Hijja (Henderson, 2011).

The number of people intending to perform Hajj ritual is increasing significantly. According to Weeks (2020), 25% of the world’s population are Muslims forming about 1.8 billion. Moreover, Pew Research Center (2019), estimated the projected growth of Muslims population to reach 2.98 billion by 2060, which shapes more than 30% of world’s population (Diamant, 2019). This significant growth in population requires considerable attention from Hajj organizers to elevate the event capacity and improve services’ quality to ensure a safe and pleasant experience regarding the challenging complexity of the event.

For decades of the contemporary Hajj, KSA has been honored by serving Hajj and Umrah (minor form of rituals which can be performed around the year) and paid a great deal of attention to
fulfil every potential in this matter. Proceeding from this great responsibility, The Custodian of the Two Holy Mosques, King Salman bin Abdulaziz Al Saud, inaugurated, in 2019, the Program of Pilgrims Service (Dyof Al-Rahman Program) one of the Kingdom Vision 2030 programs. The program has three main strategic objectives: facilitating more pilgrims to attend Hajj with the ease of access to information about the experience and pleasant arrival to the holy cities of Makkah or Medina, delivering a high-quality services to the participating pilgrims including accommodations, subsistence, transportation, etc., and enriching the pilgrims spiritual and cultural experience through visits and events related to the heritage monuments of the Islamic history (Doyof Al Rahman Program, 2019).

Thus, improving Hajj services quality, one of the program objectives, represents a cornerstone in fulfilling other program objectives. This research activity aims to contribute to improving the Hajj services quality through providing the decision makers with a framework to measure them and generate action plans for improvements. To fulfil that, the research will benefit from the similarity between Hajj related events and tourism industry and investigate the possibility of applying techniques used to assess tourism services quality to Hajj related setups.

By the early eighties, a great deal of attention was devoted to the study of product quality and consumer satisfaction by manufacturers and researchers. The concept of service quality back then was vague and required further investigation to understand how service quality is perceived by customers and how service quality is influenced. As far back as 1984, Gröross introduced one of the earliest service quality models “Technical and Functional Quality Model” and identified three dimensions of service quality: technical quality (what is provided), functional quality (how its provided), and image (organization’s reputation). That is the service provider must realize the customer perception of service quality and the approach to influence that perceived service quality and match to the excepted services to achieve customer satisfaction (Gronroos, 1984). In 1985, Parasuraman et al. issued a conceptual model “Gap Model” for service quality and its propositions
lead the researchers’ efforts in measuring service quality. Later Parasuraman et al. introduced their instrument SERQUAL to identify and evaluate service quality. Their contribution is aimed to improve quality by raising the difference between the perceived performance (P) and the customers’ expectations (E) to surpass those expectations (Grapentine, 1998).

After the initiation of SERVQUAL instrument, many researchers imitated, modified, or disproved the tool even though it has a dominant support and representation by researchers in literature. Most of the modifications revolve around two key matters: the service quality dimensions which encompass service quality and the position of service performance and expected service for measuring service quality (McDougall & Levesque, 1995). According to Seth et al. (2005) in their review for nineteen service quality models reported in literature, the findings disclosed that service quality and measurement depend on factors like service type, period, demand, arrangements, etc. Moreover, customers’ expectations regarding a service are also changing with aspects like time, number of consumers, etc. Additionally, the review reported that Gap model and SERQUAL instrument attracted more assistance from researchers and showed that eight of the reviewed models are modifications based on Gap model and SERVQUAL. Additionally the study showed that (performance – expectation) measurement used in SERVQUAL was debated among researchers (Seth, Deshmukh, & Vrat, 2005).

Foris et al. (2018) reviewed quality approach in tourism industry and linked the increased relevance of quality practices in the late twentieth century to the emergence SERVQUAL evaluation tool and (ISO 9000) standards for quality systems. In addition, the researches favored SERQUAL model for evaluating service quality based on the number of studies and case studies in the field of tourism covering a broad spectrum of services (Foris, Popescu, & Foris, 2018). Another systematic literature review of service quality in tourism by Park & Jeong (2019) revealed that SERQUAL is utilized in most research papers issued in academic journals and counted SERVQUAL to be the most representative tool for service quality evaluation (Park & Jeong, 2019).
1.2 Problem Statement

The Hajj pilgrimage takes place in Makkah city which is in the Western Region of KSA with an area of 850 km². Hajj is performed between the holy sites of Grand Mosque, Mina, Arafat, and Muzdalifah with route distance of 22 km which can be considered a limited confined territory. The activities with all the infrastructure and services provided are very intense, and Hajj management announces the success of the season with a safe crowd flow with no vital injuries during the performance of pilgrims’ duties. Within the last decade, the highest Hajj season recorded 3.2 million pilgrims and this figure is expected to grow to meet the demand relatively with expansions in related infrastructures and services.

According to Vision 2030 and the accompanied program, the number of pilgrims is planned to reach 5-6 million pilgrims by 2030 for Hajj season. Moreover, a gradual increase in the upcoming years and attention from Hajj facilitators to reach a simultaneous increase in the number of participants and the expected level of excellence in services that lead to pilgrims’ satisfaction. There is a need for a comprehensive framework to investigate Hajj service quality together with possible limitations within the Vision 2030 introduction of new services and adjustments of existing ones. Improving the quality of those services, to provide a safe and outstanding experience for guests, and realizing their capacity are the two main goals of the vision program. Studies available currently in literature barely addressed Hajj’s quality and lacked the application of standardized service quality dimensions especially with the arrival of various new elements such as new transportation means, infrastructure expansions, and regulations. Considering the complexity of Hajj event and the overlap among the stakeholders involved, this study is an endeavor to propose a framework to realize the challenges facing pilgrims and to measure Hajj service quality and the impact of the factors involved in the pilgrims’ satisfaction.

1.3 Research Questions

The inquiry is led by the following research questions:
1. What are the comprehensive service quality dimensions that can determine Hajj quality in compliance with Vision 2030 objectives?

2. Which of the identified service quality dimensions have a positive and significant impact on pilgrims’ overall satisfaction?

3. Which of the identified service quality dimensions have a positive and significant impact on willingness to extend?

4. Whether overall satisfaction can increase the likelihood of pilgrims’ participation in future activities or extended visits to heritage sites as one of the vision’s objectives?

1.4 Research Objectives

1. To develop a service quality framework with comprehensive dimensions to examine service quality in the Hajj context or similar massive gathering events to fulfil the strategic objectives of the event.

2. To offer directions about service quality dimensions applied impact on pilgrims’ satisfaction in Hajj.

3. To offer directions about service quality dimensions applied impact on pilgrims’ willingness to extend their visit to heritage sites.

4. To realize the Hajj overall satisfaction impacts on the willingness to extend activities decision.
CHAPTER TWO: LITERATURE REVIEW

2.1 Systematic Literature Review Approach

The literature review included parts that used narrative literature review to cover the complimentary literature needed, to shed the light on the process, followed by a systematic literature review protocol “Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)”. The search scope is service quality and satisfaction in religious tourism generally and specifically in the context of Hajj. The search strategy used related keywords interchangeably in five different databases as represented in Table 1.

Table 1: Research Included with Search Terms and Related Databases

<table>
<thead>
<tr>
<th>Database</th>
<th>Results</th>
<th>Search Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProQuest</td>
<td>291</td>
<td>NOFT ((model* OR framework or SERVQUAL*) AND (&quot;service quality&quot; OR &quot;quality of service&quot;) AND (satisfaction OR &quot;customer satisfaction&quot;) AND (Hajj* OR pilgrimage* OR &quot;religious tourism&quot; OR &quot;heritage tourism&quot; OR &quot;spiritual tourism&quot; OR tourism* ))</td>
</tr>
<tr>
<td>Compendex (Engineering Village)</td>
<td>93</td>
<td>((Service Quality) WN ALL) OR ((Quality of Service) WN CV) ) AND (Satisfaction WN CV ) OR ((Customer Satisfaction) WN ALL)) AND ((Hajj) WN ALL)) OR ((Umrah) WN ALL)) AND ((pilgrimage) WN ALL)) OR ((Religious tourism) WN ALL)) OR ((Heritage tourism) WN ALL)) OR ((Spiritual tourism) WN ALL)) + Service Quality</td>
</tr>
<tr>
<td>Emerald Insights</td>
<td>152</td>
<td>&quot;Service Quality&quot; AND (Satisfaction) AND SERVQUAL AND (Hajj) OR (Umrah) AND (&quot;religious tourism&quot;) OR (pilgrimage) AND (&quot;Heritage tourism&quot;)</td>
</tr>
</tbody>
</table>
Research results from four databases generated (n=699) results and seven organizational websites added as additional records. After duplicates were removed using the citation management tool (Endnote X9), the reported results are (n= 445) and 288 records were excluded. Exclusion criteria are out of research scope articles, observational design studies, opinion articles, publications older than ten years (except theoretical foundations), and non-English language publications. On the other hand, inclusion criteria are peer-reviewed quantitative and qualitative articles, books, and English authored studies. The included results in this synthesis are (n=157) as represented in the PRISMA flow diagram in Figure 1.

Figure 1: Search Flow Diagram using PRISMA Protocol
2.2 Religious Tourism

Since the dawn of humanity, touring for the sake of religious beliefs has existed. This need made a space for religious tourism to accommodate peoples’ spiritual expression in the form of pilgrimage where pilgrims are considered tourists for religious purposes (Durán-Sánchez, Álvarez-García, Río-Rama, De la Cruz, & Oliveira, 2018). Pilgrimage is defined as “A journey resulting from religious causes, externally to a holy site, and internally for spiritual purposes and internal understanding” (Barber, 1991, p. 1). A recent definition for pilgrimage tourism was laid as the involvement in “a journey for example, that evokes a passion equivalent to ‘religious’ zeal” (Padin, Svensson, & Wood, 2016, p. 78).

Through the course of history pilgrimage counted to be the oldest form of tourism and existed anciently among nations like Greeks, Romans, Japanese, Chinese, Mexicans, and Indians each with different sacred destinations to perform pilgrimage and fulfill spiritual duties. Most of the ancient pilgrimage destinations evolved in various tourist activities like the Olympic games originated from Greek pilgrimage, The River Ganges Indian pilgrimage and other cites, and Shikoku pilgrimage sites in Japan (Coleman & Elsner, 1995). Those sacred journeys have been part of world’s major religions including Buddhism, Christianity, Hinduism, Islam, and Judaism each relevantly attached to devoted destinations to perform religious or cultural activities. Those destinations counted as the most common motivation for travel with approximation of 240 million pilgrims annually mostly being Muslims, Christians, and Hindus (D. J. Timothy & D. H. Olsen, 2006). In literature, the term religious tourism, pilgrimage, cultural tourism, and heritage tourism are used interchangeably to represent terms for the similar concept (Tripathi, Choudhary, & Agrawal, 2010). Motivations vary for visitors in the same destination, so it could be a pilgrimage for some and cultural, heritage, or any intended for of tourism for other travelers and religious tourism nurture other social tourist activities (Ebadi, 2014; Sánchez-Cañizares & Castillo-Canalejo, 2014). It is commonly perceived that tourist could be interacting with various motivations in a single destination visit (D. Bowen & Clarke, 2009; Hanefors, 2010; Uriely, Yonay, & Simchai, 2002). Religious tourism market position increasing
swiftly and getting significant attention from governments and organizations in hold of spiritual destinations (Eraqi, 2006). This attention from governments, agencies, and researchers was a response to the growing figures of tourist with religious, cultural, or historical motivations with a potential economic influence from those respected sites (D. J. Timothy & D. H. Olsen, 2006).

The United Nations World Tourism Organization (UNWTO) considers tourism product characteristics including physical products and services offered to fulfill tourist demands. The UNWTO defines the complex tourism product as “A physical space with or without administrative and/or analytical boundaries, in which a visitor can spend an overnight. It is the cluster (co-location) of products and services, and of activities and experiences along the tourism value chain, and a basic unit of analysis of tourism. A destination incorporates various stakeholders and can network to form larger destinations” (Ammirato, Felicetti, Della Gala, Raso, & Cozza, 2018, p. 624). This destination can be a city, region, resort, or a whole country with a cluster of products, services, and experiences with differentiated features. The essence of the tourism and hospitality industry is to deliver an effective and high-quality experience. Accordingly, policies at international and national levels gradually aim to spot, support, and spend in destinations experiences to increase revenue (Neuhofe, Buhalis, & Ladkin, 2013; OECD, 2016).

Addressing quality in tourism with the complex nature of the cluster of quantifiable products, unquantifiable services, and psychological experience should revolve around customer satisfaction and perceived value. Policymakers, government bodies, and organizations in the hold of a destination mission to provide an outstanding service quality led to a memorable experience and tourist satisfaction (Foris et al., 2018; Neuhofe et al., 2013; OECD, 2016).

- Tourism is one of the world-leading trades with significant financial figures. UNWTO reported that in 2015 there were around 1.186 billion international tourists, generating US $ 1.260 trillion from tourism revenues. This massive figure raised in 2016 to 1.235 billion international tourists, with a 3.9% increase in one year. The rise in the number of international tourist arrivals in 2016 because of seven consecutive years increase following
the global financial recession in 2008. By the completion of 2015, tourism elucidates 7% of trades in products and services following chemicals and petroleum products. The estimations that numbers of local and international tourists will reach between 5 to 6 billion tourists. According to the most recent UNWTO Highlights Report (2019), the number of travelers reached 1.5 billion showing a 4% growth which is also the predicted growth for the year 2020. Due to the COVID-19 pandemic brutal impact, UNWTO reported a 93% drop in June 2020 compared to 2019 and a 65% decrease in international arrivals in the first half of the year with countries closed border and travel restrictions in response to the pandemic (UNWTO, 2020). In 2023, a significant post pandemic recovery recorded 975 million international tourists, a 38% increase of (2022), and generating $1.4 trillion which is 93% of year 2019 earnings (UNWTO, 2024 #257).

Timothy (2011) concluded that religious causes form a massive share of the world’s tourist assemblies like Muslim’s Hajj pilgrimage more than 2 million annually. In Saudi Arabia, pilgrimage justifies 7% of the kingdom’s Gross Domestic Product (GDP) or an annual $30 billion in revenue. In addition to the economic impact of religious tourism, it is an important practice for many cultures and countries globally (International Tourism Highlights, 2019 Edition; Olsen & Trono, 2018).

2.2.1 Hajj Pilgrimage and Religious Tourism Nexus

Ancient Makkah’s location near the trade routes in Arabia, Zamzam water well, and the sacred status of the city shape the travel for both trading and pilgrimage (Ibrahim, 1982). Nowadays, tourists to Saudi Arabia can be driven by various motivations as pilgrimage, businesses, and conferences, visiting, or shopping. Tourists’ expenditure report published by the recently established Ministry of Tourism in Saudi Arabia showed 8% growth in 2019 with spending of 73.2% on religious tourism, 18.2% on businesses & conferences, and 5.5% on visiting & shopping all with the exclusion of international airline carrier (Matthew Amlôt, 2020). The UNWTO report about tourism in Medal East and North Africa (MENA) counted Saudi Arabia as the largest destination in MENA with
significant growth in 2018 and 21 million international visitors. The tourism in KSA plays a significant role in the Vision 2030 programs and The Ministry of Tourism inaugurated in 2020 runs various initiatives and programs. Moreover, the facilitation of eVisa welcoming tourists from 49 countries around the world, the international tourism events in various Saudi cities, the expansion of infrastructure and transportation means, and the upcoming mega projects like Neom, Red Sea, and Gidya will reposition the kingdom on the tourism sector (World Tourism Organization, 2019).

The tourism phenomenon has intrinsic complications and ambiguity in conceptualization in addition to being multidimensional and comprehensive in nature. It has an uncertain starting point, but it is commonly associated with travel for religious pilgrimages, European elite voyages “Grand Tour”, or other significant residential movements. Tourism now is a global phenomenon logged 1087 million international arrivals in 2013 and forecasted to reach 1.8 billion arrivals by the year 2030. In literature, academics paid attention to tourist’s motivation and behavior that shape various forms of tourism, and modification in activities or intentions lead to the new emergence of new forms respectively (Raj & Griffin, 2015). With that being said, the terms religious tourism, pilgrimage, heritage tourism, spiritual tourism, or cultural tourism are used in the literature body interchangeably. Visitors to the same destination can be a religious pilgrimage for some and a sentimental cultural experience for others. Woodside (2015) study addressed Hajj pilgrims’ different behavior where some pilgrims overcome the tourist perspective to the native perspective through learning and training about performing the rites perfectly (Rashid, 2018). Religious tourism involves both religious and secular activities and about this multidimensional nature of tourism, Smith (1992) represented a travel continuum with pilgrimage and tourism are the opposite ends of the continuum and religious tourism is in the middle. Moreover, the tourist can be motivated by sacred religious activities as a pilgrim and move to secular motivated activities through their experience (Jongmeewasin, 2016).

The literature is overflowed with the consideration of Hajj and Umrah as religious tourism activities and the world’s largest annual pilgrimage for the nature of the logistical services
considered to be a massive tourism supply chain. Willingly Umrah visits can be more perceived as a religious tourism and the tourist has full control of his activities, but the Hajj pilgrimage involves more of stewardship strict activities with obligations and timeframe that represent sacred pilgrimage rites and needs great attention to be done safely and smoothly. KSA and the Organization of Islamic Cooperation (OIC) open arms for tourism, particularly religious tourism, but differentiate between Hajj pilgrimage and other types of religious tourism (Griffiths & Wiltshier, 2019).

KSA has been serving Hajj pilgrims for decades with relentless efforts and huge investments in infrastructures in the holy sites and considers those services as an honor not a source of income, since part of the Ministry of Hajj and Umrah’s duties to ensure that “religious duties are not transformed into a commercial commodity”. There are no clear evidences of Hajj income in literature or any official records and the pilgrims’ payments cover various services to private entities through certified tourism agencies known as Hajj agents around the globe (Henderson, 2011). Economically, there is a correlation between the number of Hajj pilgrims and economic growth in KSA. A recent study applied The Vector Error Correction Model (VECM) on the data from the Ministry of Economy and Planning of Saudi Arabia Central Department of Statistics annual reports for the period of (1975-2007). The study results revealed the presence of one bidirectional Granger causal relationship among economic growth and the increasing number of Hajj pilgrims in the short term. Also a 0.84 local currency rise in non-oil GDP over the long term (Kouchi, Nezhad, & Kiani, 2018).

With all the possible economic positive impacts the wellbeing of the pilgrims is still the KSA priority. A group of researchers discussed the pre-2020 Hajj dilemmas and controversies leading to the Saudi authorities’ decision to scale the 2020 event to one thousand local participants from various countries. The study summarized public health plan that can be a benchmark to massive gathering events (Zumla, Azhar, Alqahtani, Shafi, & Memish, 2020).
2.2.2 Hajj Event

The term Hajj in Arabic means “heading to a destination for a specific purpose” similar to the word “hag” in Hebrew holiday that describes a journey to stand before and circle around a symbolized monument or an object related to God (Jeter, 1991). Moreover, Qur’an illustrated the providential restoration of Kaaba by Abraham and Ishmael PBUUT in addition to Allah’s instruction to Abraham PBUH to call for Hajj’s ritual pilgrimage. Hajj remained a fundamental practice in Islam as the fifth pillar with specific time frame and geographical territory (Peters, 1996; Taylor, 2011). Hajj pilgrimage nature is compulsory to physically and financially capable adult rational Muslims once in their lifetime. Financial capability means enough funds to pay his/her Hajj expenses with no outstanding debts and with provision of prosperity for left behind family members to fulfil their life expenses. Hajj rituals held within six days from the 8th to the 13th days of Dul-Hijja the twelfth lunar month (Hijri) with some variation in the Gregorian calendar (Hussain, 2012; Makris, 2007).

2.2.2.1 Hajj Quota System

Since its founding, the governors of KSA have been carrying out phased projects to expand the Two Holy Mosques and to develop the two holy cities and the surrounding holy sites to raise the capacity of service to guests sufficiently. Part of its keenness to facilitate the performance of Hajj and provide measures for organizing and determining the number of arrivals to the holy places, the OIC called for a decision in the 17th Islamic Conference of Foreign Ministers held in Amman, Jordan, from 21 to 25 March 1988. The resolution supported Saudi Arabia’s measures to determine a quota, the ratio of the pilgrims of a country to the percentage of the country’s population to the number of Muslims in the world (1,000 pilgrims per million inhabitants), asking all OIC member states to cooperate with the Government of the Kingdom in that matter. Considering space limitations in Hajj rituals sites and due to aspects related to crowd management, logistics suitability, and health and infection control, such measures would ensure equal opportunities for all Islamic nations to perform Hajj while supporting the provision of the required services to perform Hajj rituals with comfort (SPA, 2007).
According to the quota proportion, the Saudi Ministry of Hajj and Umrah determines the proportions of countries but does not specify the pilgrims of those countries themselves as this task is left to their hajj bodies which operate on a continuous coordination with the ministry. Between the season of 2009 and 2012, there was a growing trend in the total number of pilgrims as represented in Table 2 that shows the number of participating pilgrims from 2009 to 2019. The table also shows a decrease in quota between seasons of 2013 and 2016 due to expansion projects of the third phase in Makkah sanctuary (Kane, 2016; Sarif, 2015).

Table 2: Twelve Years Hajj Participation Numbers in Millions Retrieved from Saudi General Authority of Statistics Website

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>International</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International</td>
<td>1.61</td>
<td>1.80</td>
<td>1.83</td>
<td>1.75</td>
<td>1.38</td>
<td>1.39</td>
<td>1.39</td>
<td>1.33</td>
<td>1.75</td>
<td>1.76</td>
<td>1.86</td>
<td>-</td>
<td>-</td>
<td>0.78</td>
</tr>
<tr>
<td>Domestic</td>
<td>0.15</td>
<td>0.99</td>
<td>1.1</td>
<td>1.4</td>
<td>0.70</td>
<td>0.70</td>
<td>0.57</td>
<td>0.54</td>
<td>0.60</td>
<td>0.61</td>
<td>0.63</td>
<td>0.01</td>
<td>0.59</td>
<td>0.15</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1.76</td>
<td>2.79</td>
<td>2.93</td>
<td>3.16</td>
<td>2.08</td>
<td>2.09</td>
<td>1.96</td>
<td>1.86</td>
<td>2.35</td>
<td>2.37</td>
<td>2.49</td>
<td>0.01</td>
<td>0.59</td>
<td>0.93</td>
</tr>
</tbody>
</table>

2.2.2.2 Hajj Processes

Hajj consists of essential series of rites that must be performed chronologically in Makkah Grand Mosque and surrounding holy sites (Mina, Arafa, and Muzdalifah) in a Hajj route extend to 22 Kilometers. Pilgrimage of Hajj is a physically demanding intense activity and has three forms of rituals with distinctive features and most international pilgrims perform Umrah in the days before Hajj days. The rites of the Hajj are represented by four pillars and seven duties vary in different dispensation
schools of thought. Missing one of the pillars negates the hajj pilgrimage, while missing one of the duties requires a livestock sacrifice in Makkah. Figure 2 is simplified representation of Hajj process followed by more details about rites performance.

Figure 2: Hajj Overall Simplified Steps

The Hajj rites are as follow:

1. Performing Ihram: the first step in Hajj rites is where people stand in equality and represent sanctification as part of the ritual in conjunction with prohibitions after intending Ihram. Females put down ornaments and cover the whole body except the hand and face while males wear two-piece white garments at specific stations, known as Mawaqit, assigned to countries of departure before entering Makkah.
2. Performing Tawaf and Sai: On arrival to Makkah, pilgrims proceed to the Grand Mosque sanctuary and perform Tawaf, moving around Kaaba seven times in a counterclockwise direction. Once they are done with Tawaf, pilgrims perform Sai, walking between Safa and Marwah (hills 400 meters from Kaaba) seven times.

3. Standing in Arafat: In the 8th of Dul-Hijja pilgrims head for Mina and be assigned to their accommodations and spend the whole day known as the day of Tarwiah means “quench of thirst”. On the following day, the 9th of Dul-Hijja pilgrims carry on to Arafat and stay there until dusk.

4. Staying in Muzdalifah: At sunset on the ninth of Dul-Hijja, pilgrims advance to Muzdalifah few miles from Arafat in act known as (Nafrah). Pilgrims spend the night or till midnight at Muzdalifah and collect tiny pebbles to use them the in the following rites. The 10th is the first day of Eid Al-Adha festival and pilgrims can break their Ihram by throwing the first pebbles at Jamarat bridge in Mina, process their sacrifice slaughter, or perform Tawaf Alifadah.

5. Performing Tawaf Alifadah: This tawaf is one of the pillars of Hajj and pilgrims can perform it starting from midnight of the tenth as one of the three rites to break Ihram.

6. Jamrat Bridge pillars stoning: from the 11th to the 13th the days of Eid known as Days of Tashriq pilgrims advance every night to Jamrat bridge to throw seven stone at each pillar.

7. Farewell Tawaf: leave taking Makkah by the final rite of Hajj is by completing the third tawaf. At this point, all the rituals of Hajj pilgrimage are completed, and pilgrims could go home or leave to Medina to visit the shrine of prophet Muhammed PBUH and pray at his holy mosque (Almasjid Alnabawi) (Al-Abdali, 1996; Long & Long, 1979; Raj & Morpeth, 2007). Figure 3 illustrates the route of the Hajj pilgrimage process extensively illustrated by Meleas (2016).
2.2.2.3 Hajj Management

Hajj is managed by a supreme committee chaired by the king and the ministers as members to steer strategic plans and project decisions. The Central Hajj Committee chaired by Makkah Region governor who supervises projects’ implementation in Makkah Province and additional committee to cover Medina Province. Figure 4 shows a hierarchy of the government bodies and private sectors working in the field of Hajj and Umrah. Some of the service providers are under the supervision of Ministry of Hajj & Umrah, where the ministry approves the operational plans and then monitors the performance and later run evaluations. The service agencies divided to three sectors International Hajj service providers, domestic Hajj service providers, and Umrah service providers (Ministry of Hajj and Umrah, 2019).
International pilgrims service providers consist of establishments of denominations (Arbab Al-Tawaif), General Coach Association, Support Services, International Hajj Missions, and tourism agencies. First establishments of denominations including the six Twafah establishments (each is assigned to serve a global sector in Makkah), the Office of the United Agents in the entrance points of pilgrims, the Office of United Zamzam Providers, and the Institution of Guides in Medina. Second the General Coach Association and its 17 pilgrim transport companies own about (19904) buses. Third is the Support providers including accommodations and food services. Last of the International pilgrims’ service providers, the official Hajj missions for more than (70) countries in addition to more than 2,300 companies and foreign tourism agencies (Ministry of Hajj & Umrah, 2020).

Domestic pilgrims service providers consist of 236 companies and institutions with more than 700 branches in different regions of the kingdom. Their role to issue Hajj permits to Saudi citizens and residents and provide services in holy sites including transportation, accommodations, and food services. The Hajj regulations allow domestic pilgrims to perform rituals once every five
years and that is controlled by the Ministry of Interior (MOI) national records. (Ministry of Hajj & Umrah, 2020).

The exhibited structure was meant to shed light on the stakeholders in Hajj and represent processes associated with service providers. Those services will be formulated accordingly as service quality dimensions in the research instrument.

2.2.3 Saudi Arabia Vision 2030 and DARP Program

King Salman bin Abdul-Aziz Al Saud and the Custodian of the Two Holy Mosques initiated his ruling era with an ambitious statement about the future of the kingdom “My first objective is for our country to be a pioneering and successful global model of excellence on all fronts, and I’ll work with you to achieve that (Vision 2030, 2016).

No doubt a successful landing for these goals depends on cooperation and it is a shared responsibility of citizens, government bodies, and corporate sector. Moreover, Crown Prince Mohammed bin Salman Al Saud introduced Saudi Vision 2030 document aiming to diversify economy and implicate social reforms describing the vision to be aspiring, but feasible. According to Hanware (2016) the crown prince stated, “Vision 2030 is an ambitious yet achievable blueprint, which expresses our long-term goals and expectations, and reflects our country’s strengths and capabilities. All success stories start with a vision, and successful visions are based on strong pillars.” (p.6). Vision 2030 document represented a wide array of reforms addressed to less the reliance on oil revenues through utilizing kingdom’s location, government holdings privatization, enabling jobs opportunities, defense industries localization, and encouraging religious tourism (Hanware, 2016).

Vision 2030 is the roadmap to kingdom’s economic development and the vision is based on three pillars: to roll up as the heart of the Islamic and Arab worlds, to become an investment powerhouse, and take advantage of the geographical location as a hub connecting three continents namely Asia, Africa, and Europe. In addition, the vision centered on three themes described as a vibrant society, a thriving economy, and an ambitious nation that portrait the kingdom potentials to
the citizens and strengthening their role in achieving the vision goals. Vision 2030 is accompanied by the National Transformation Plan (NTP) and its affiliated Fiscal Balance Program (FBP) as main programs of the vision thirteen realization programs. NTP is to promote excellence in government bodies performance while the FBP is to balance their budgets by 2020 and be financially efficient through investments instead of oil revenues (M. K. Khan & Khan, 2020; Moshashai, Leber, & Savage, 2020).

Hajj & Umrah program is one of the vision critical programs and was defined by Pilgrims Service Program (DARP) document. The role of the program is to make a quantum leap in the service of pilgrims by promoting integrated coordination between public and privet service providers to achieve the program objectives. The vision assigned the following strategic objectives to the DARP program:

1. Enable hosting more pilgrims and facilitate access in entrance ports to the Two Holy Mosques focusing on three ideas:
   1.1. Accelerate visa process and related requirements.
   1.2. Promote programs to encourage more pilgrims to participate.
   1.3. Reach optimum capacity of participants.

2. Provide high quality services to pilgrims with attention to:
   2.1. Raising services to the highest quality standards.
   2.2. Imposing wellbeing, safety, and security.
   2.3. Developing the spirit and culture of hospitality.
   2.4. Arranging amenities and overcoming challenges.
   2.5. Enriching the emotional, cultural and heritage experience.

3. Enriching the religious and cultural experience of pilgrims through achieving sustainability of the Hajj & Umrah sector in terms of development and adequate human resources.

In a glance, guests’ journey in Figure 5, illustrates the process from the Vision 2030 DARP point of view starting from pre-arrival services to the post pilgrimage potential explorations in tourism activities (DARP, 2020).
Current efforts represented by DARP include new services and ongoing projects that incorporate:

1. Two Holy Mosques third expansions to welcome up to 1.7 million guests.
2. Sacred Sites Development Company to formulate, maintain, and provide services in Mina, Arafat, and Muzdalifah.
3. Haramain High-speed Train linking Makkah, Jeddah, King Abdullah Economic City (KAEC), Medina.
4. Rou`a projects in Makkah & Medina to raise amenities current daily capacities to 300,000 and 240,000, respectively and improve service quality.

Figure 5: Hajj Guests Journey Promoted by DARP Program adapted from the program delivery plan

2.3 Service Quality

Service quality has been one of the most important topics in today’s competitive business environments, and it has been undergone extensive research in literature. The overwhelming interest in service quality was motivated by the tremendous growth of service industries that influenced the global economy (Prakash & Mohanty, 2013). In fact, service quality positively influences profitability (Hallowell, 1996), improves business performance (Kunst & Lemmink, 2000), increases customer satisfaction (Sivadas & Baker-Prewitt, 2000), and increase customer loyalty (Chang, Wang, & Yang, 2009). Also, companies providing high-quality services have higher market share and a higher return on investment compared with companies providing low-quality services (Ghobadian, Speller, & Jones, 1994).
Although service quality has been extensively investigated in the literature, it was described as an elusive and abstract construct that is difficult to define and measure (Crosby, 1979; Anantharanthan Parasuraman, Zeithaml, & Berry, 1985; Prakash & Mohanty, 2013). Indeed, there is no universal or conclusive definition or model of service quality (Reeves & Bednar, 1994). Many authors have provided various definitions of service quality. For example, Bitner and Hubbert (1994) defined service quality as the customer’s perception of the superiority/inferiority of the service and the organization providing the service. Also, Ghobadian et al. (1994) defined service quality as the degree to which the service delivered meets the customer’s expectations. Other definitions of service quality were based on the comparison between service expectations and perceptions. Gronroos (1984), for instance, defined service quality as an outcome to the assessment process of comparing the customer’s expectation of service with his/her perception of the actual service he/she received. In this regard, Anantharanthan Parasuraman et al. (1985) identified three key points that help understand and measure service quality. These key points are:

- The quality of services is more difficult to evaluate than the quality of goods for consumers.
- Consumers perceive service quality by comparing their expectations with the actual performance of the service.
- Consumers assess service quality based on both the service outcome and the service delivery process.

Although service quality has gained popularity and growing interest among managers, practitioners, and researchers given the financial benefits that can be gained from providing high-quality services, research on service quality has not reached the maturity level. In fact, in terms of using quality techniques such as total quality management and continuous improvement, the service sector still lags behind the manufacturing sector (Ghobadian et al., 1994). This may be attributed to the differences between the service and manufacturing sectors.
2.3.1 Aspects of Services

There are many aspects or characteristics that differentiate services from goods. These characteristics are generally summarized in the literature as intangibility, inseparability, heterogeneity, and perishability (Zeithaml, Parasuraman, & Berry, 1985). These characteristics were widely used as a reference in developing market strategies and understanding services buyer behavior (Wolak, Kalafatis, & Harris, 1998). A discussion on each of the four service characteristics is presented as follows:

1. Intangibility: refers to the fact that services do not have a physical existence, and hence they cannot be touched, held, tasted, or smelt (Corrêa, Ellram, Scavarda, & Cooper, 2007). Intangibility is considered one of the main features that characterize services from good. However, other studies contradicted the idea that intangibility is one of the main characteristics of services because the concept of tangibility is difficult for people to understand (J. Bowen, 1990).

2. Inseparability: refers to the fact that services are delivered and consumed at the same time (Zeithaml et al., 1985). This means that the customer must be present and be a part of the service production activities and service processes (Lovelock, 1983). This represents a challenge to service providers as the customer may influence the performance and the quality of the service (Gronroos, 1984).

3. Heterogeneity: can be defined as the difficulty to standardize services due to differences in times, employee performance, and customer perceptions (Jaw, Lo, & Lin, 2010). This represents a challenge in services where a high degree of labor involvement is required and the performance of such labors may vary from day to day (Zeithaml et al., 1985).

4. Perishability: refers to the fact that services cannot be stored to meet future demand (Donnelly Jr, 1976). This aspect can be difficult to control, especially when the demand is fluctuating, which may result in losing the opportunity to generate additional revenue due to
the failure to utilize underused resources during demand lulls or promptly arrange for having additional resources to meet the demand during peak times (Jaw et al., 2010).

Despite the fact that these four characteristics have been widely known to describe the nature of the service concept, some authors disagree with this classification of service and argued that these four characteristics provide an incomplete picture of service and limited its generalizability (Edgett & Parkinson, 1993).

Berry and Parasuraman (1991) stated that there is a lack of vigorous distinction between service and manufacturing firms. Other classification schemes of services were reported in the literature. For instance, Prakash and Mohanty (2013) classified services into four categories based on customer involvement and the degree of complexity of the service. These characteristics are outlined as follows:

1. Service with a low degree of complexity and low level of customer involvement such as public transportation and teller machine services.
2. Service with a high degree of complexity and a low level of customer involvement. This kind of service relies on a considerable amount of expertise from the service provider while the customer has little knowledge of the service such as in medical surgery or an IT outsourcing service.
3. Service with a low degree of complexity and high level of involvement. Examples of this category may include call centers and fast-food restaurants.
4. Service with a high degree of complexity and level of customer involvement. Examples of this category may include online shopping and medical examinations.

As stated earlier, the “service” and “service quality” are general and abstract concepts that are difficult to define and measure, and hence they have been defined in various ways. Also, many authors have developed service quality models that were based on different quality dimensions.
There is still a debate on the best or most appropriate definitions, models, or dimensions of service quality as research on service quality is in progress.

### 2.3.2 Dimensions of Service Quality

Service quality is a general concept that can accurately be defined by a set of dimensions. In literature, many scholars have used different dimensions to define service quality. For example, Lehtinen and Lehtinen (1982) conceptualized service quality using three dimensions: physical quality, which refers to the physical aspects of the service such as equipment and buildings; corporate quality, which refers to the image and profile of the organization; and interactive quality, which refers to the interaction between the organization’s employees and the customer in addition to the interaction between the customers themselves.

Gronroos (1984) stated that to successfully define service quality, customer perception of service quality should first be identified. The author proposed a service quality model that was based on three dimensions, namely, technical quality, functional quality, and the image of the organization providing the service as illustrated in Figure 6. First technical quality refers to the actual outcome of the service process, and it can be objectively measured by the customer. Second functional quality refers to the customer’s subjective perception of the way in which the service is delivered to him/her. Third comes the image which refers to the customer’s perception of the service organization, and it
depends on both technical quality and functional quality including advertisement, word of mouth, pricing, ideology, and traditions.

Anantharanthan Parasuraman et al. (1985) defined service quality as the difference between customer expectation before consuming the service and the customer’s perception of the service received. They developed a service quality model that was based on the Gap Analysis theory that includes five gaps represented in Figure 7 and described as follow:

- **Gap 1:** the difference between consumer expectation and management perception of that expectation.
- **Gap 2:** the difference between management perception of consumer's expectations and service quality specifications.
- **Gap 3:** the difference between service quality specifications and the quality of the actual service delivered to consumers.
• Gap 4: the difference between service delivery and external communications with consumers such as advertising.

• Gap 5: the difference between consumers’ expectation of the service and their perception of the actual service delivered.

Figure 7: Gap Analysis Model adapted from Parasuraman et al. (1985)

In addition, Anantharanthan Parasuraman et al. (1985) stated that service quality can be measured using 10 determinants or dimensions of quality regardless of the type of service. These dimensions were described by the authors as:

1. Reliability: the ability to perform the service right from the first time with high accuracy and dependability.

2. Responsiveness: the degree of employees’ readiness and willingness to provide the service.

3. Competence: having the necessary skills and expertise to perform the service.
4. Access: ease of contact and approachability. It involves facilitating access to service and reducing waiting time, working convenient hours, and working in easily accessible locations.

5. Courtesy: the politeness, respect, consideration, and friendliness of contact personnel such as receptionists and telephone operators.

6. Communication: listening to the customers and keeping them informed using a language that can easily be understood.

7. Credibility: the degree to which the service is trusted and believed. It involves the organization’s name, its reputation, and the attributes of contact employees.

8. Security: the ability to be free from danger, risk, or doubt. It involves physical safety, financial security, and confidentiality.

9. Understanding/knowing the customer: understanding the customer’s needs, which involves identifying the customer’s specific requirements, providing individual attention, and recognizing the regular customer.

10. Tangibles: the physical aspect of the service, which includes the condition of the buildings, equipment, and tools, the appearance of employees, etc.

Also, Ananthanarayanan Parasuraman, Zeithaml, and Berry (1988) introduced SERVQUAL, a multi-item scale that was also based on the gap theory. The SERVQUAL model was a refinement to the initial model, developed by Anantharanthan Parasuraman et al. (1985), and it was based on only five quality dimensions namely tangibles, reliability, responsiveness, assurance, and empathy. The SERVQUAL model can be viewed as a diagnostic tool helping service organizations identify their strengths and weaknesses (Bhat, 2012). In this model, respondents are requested to rate their expectations of the service before receiving the service and their perception after consuming the service using 22 items constituting the five quality dimensions. Since its introduction, the SERVQUAL model is considered the most comprehensive model to measure service quality (Nyeck, Morales, Ladhari, & Pons, 2002). The SERVQUAL model, or modified versions of the model, has been widely used in literature to measure the service quality of various service industries. However, the
SERVQUAL model has also been criticized. For instance, it was argued that the SERVQUAL cannot be applied to all types of services (Carman, 1990).

Cronin Jr and Taylor (1992) explored the conceptualization and measurement of service quality and its association with consumer satisfaction and purchase intentions. They also criticized the SERVQUAL model and stated that it is an inadequate measure of service quality as it confounds satisfaction and attitude, and they suggested that service quality can be well defined using a performance-based model. In this regard, the authors developed SERVPERF, a performance-only measure of service quality, and they asserted that service quality may be described as a form of consumer attitude, but it is not equivalent to satisfaction. The authors used the same five dimensions of the SERVQUAL model, but they also used the perception section which they called the performance-based model and disregarded the expectation section of the SERVQUAL model.

2.3.3 Service Quality in Tourism

According to Walker (2002) definition of tourism is the act of traveling to places away from our own societies in order to engage in one or more activities. On another side, he added that tourism is a science and business that is dynamic, evolving, and driven by the customer force.

From another angle, the UNWTO addresses tourism as people going and staying out of their communities for not more than a consecutive year for purposes such as leisure, business, and others. Kandampully (2000) defined tourism as a product that is unique. He added that it is no more a luxury as it became a lifestyle in developed countries also it has become a major part of nearly all the countries, and it has the potential to act as catalyst to leverage the quality in some services such as transport, financial, telecommunication, health etc.

Tourism, especially for developing countries, promises a new source of income that would renew the economy of these countries (Kandampully, 2000). Now that tourism as an industry that encompasses producers and consumers, services that are included need to be assessed. Therefore,
the tourists need to be involved with crew and managers in the organizing of the tour packages and by this way the managers will be able to enhance the service quality (Kandampully, 2000).

MacKay and Crompton (1990) defined service quality as “the relationship between what customer’s desires from a service and what they perceive that they receive”. In addition, it is a way of making costumers to satisfy them and have positive idea about the service they had (Ostrowski, O’Brien, & Gordon, 1993). In order to be able to attract more customers the service quality should be impeded in the service provider’s ability as an essential factor (Backman & Veldkamp, 1995). In fact, research on quality within the tourism sector showed that most frequently used words after tourism are satisfaction followed by service quality as displayed in Figure 8 (Garrigos-Simon, Narangajavana-Kaosiri, & Narangajavana, 2019). This shows the importance of service quality in the tourism industry.

Figure 8: Frequency of Keywords in Tourism Literature

Source: Retrieved from (Garrigos-Simon et al., 2019)
Although the literature review on service quality measurement is numerous, but there is few studies which focus on service quality in tourism (Prabaharan, Arulraj, & Rajagopal, 2008). The service quality plays a major role in tourism and set the standard of how services should be provided (Prabaharan et al., 2008; Wyllie, 2000). Many service providers in tourism use the SERVQUAL model to assess the quality in tourism industry (Ostrowski et al., 1993). It has been used by Mackay and Crompton (1988) in Canadian municipal parks, he concluded the same five dimensions as the model of Ananthanarayanan Parasuraman et al. (1988). In 2003 Bigne, Martinez, Miquel, and Andreu (2003) applied SERQUAL model to services they get from travel agencies, they found that it’s still a reliable model to measure the quality of travel agencies. Luk (1997) Discovered a relationship between the overall service quality and the arithmetic means of the marketing culture of a travel agency.

Also on a theme park visitors, employees, and managers, McLaughlin and Fitzsimmons (1996) focused on the levels of service-quality expectation. He did a comparison between the median scores by kruskal-wallis test, and it indicated that there is a significant difference in expectations among these three groups. Based on this, they questioned the sufficiency of SERVQUAL approach, in addition, they claimed that it ignored multiple stakeholders. Díaz-Martín, Iglesias, Vazquez, and Ruiz (2000) Verified that service quality expectation can also be used as variable in the market of tourism. They formed a homogeneous tourist group in terms of their expectation using k-means method. Then investigated the relation between the customer perceptions and satisfaction using multiple regression analyses. The conclusion was that the expectations of different groups influence their overall satisfaction which provides expectation-based market segmentation.

A standard SERVQUAL procedure was used on 39 attributes by Juwaheer and Ross (2003) to measure service quality in hotels in Mauritius, for this, they used a group of tests such as ANOVA, t-tests, and factor analysis. They identified 9 dimensions in which the reliability and assurance arose as the main service quality determinates.
Gabbie and O’Neill (1997) compared the performance of service quality of two hotels in Ireland which adopted total quality in different perspectives. It turned out that the more the commitment to the total-quality program the higher the scoring of the hotels will be. O’Neill, Williams, MacCarthy, and Groves (2000) reported another SERVQUAL model in the diving tourism sector in Australia studying five tour operators. They claimed that the most prominent indicator was the assurance of all service performance.

A 33-item scale was devolved by Saleh and Ryan (1991) in order to analyze the service quality in hospitality industry in Canada. They selected questions/items that go along with the SERVQUAL five dimensions, items that did not come under the preview of SERVQUAL have been left out. They found that the service quality dimensions are not correctly reflected by SERVQUAL across all industries.

Knutson, Stevens, Wullaert, Patton, and Yokoyama (1990) created a lodging-specific instrument called LODGSERV using the SERVQUAL model, it consisted of 26-items index to the service quality of consumer expectation in hotel experience. In 1991 Fick and Brent Ritchie (1991) tested four tourism sectors customers (airlines, hotel, restaurant, and ski) with the SERVQUAL. They found that the model was useful to compare firms within the same tourism sector.

Also O’Neill (2000) studied how the perception change through the time between the time of exiting in leisure places and after arriving back home. He used a 22-item SERVQUAL on theme park visitors in Western Australia by using a questionnaire.

A SERVQUAL with 26-item was used to map service quality by Atilgan, Akinci, and Aksoy (2003) in tourism in Antalya, Turkey. They chose items that would fit in the SERVQUAL model. Ekinci, Prokopaki, and Cobanoglu (2003) employed the SERVQUAL model recommended by Ekinci, Riley, and Fife-Schaw (1998), that consists only of two dimensions (tangible and intangible) to identify the characteristics of British tourists who visit the island of Crete and to assess their perception of the
service quality of the accommodation facilities. They found that the modified SERVQUAL is reliable and valid. Hence, the conclusion was that service quality in the island accommodations consists of two dimensions.

Considering Tsavo West National Park in Kenya as a case study, Akama and Kieti (2003) used SERVQUAL to measure the service quality and the overall visitors satisfaction with the tourist products and services of the park. They considered two quality dimensions price and perceived value plus the five dimensions of SERVQUAL model.

2.3.4 Service Quality in Religious Tourism

Religion is not only the emotional feeling and ritualistic behavior, but it is also the moral compass that guides the communities to right path (Rojas-Méndez, 2013). People have fought wars and forged alliances for religious reasons (Liutikas, 2015). Although with consequential financial impact, a lot of people are traveling based on religious reasons (Tsiootsou, Ratten, & Hudson, 2010). Whatever the aim or the reason is, most of the religions require visiting some holy or sacred places (Smith, 1998). This spiritual journey undertaken to a shrine or a sacred places where the participants are motivated partially or fully for religious reasons is known as religious tourism (Puşcaşu, 2015). It is done by visiting sacred or holy places and ancient buildings such as mosques, churches, temples, tombs of saints or religious figures. People in these places can also learn about history (Najib, 2008). Hence, the religious tourism can be considered as an industry that generates source of income of the region or country (Wantara, 2016). For instance, more than 2 million visitors have visited Makkah from different countries all around the world, which makes the religion tourism comes as a second GDP contributor of the Saudi economy after oil (Ahmed, 1992).

In order to have clear understanding of the motives for religious tourism and pilgrimage, many researchers tried different theories such as Maslow’s “Hierarchy of needs theory” (Maslow, 2013) and Herzberg’s “Two-factor theory” (Herzberg, 2017). However, these two theories were
under critic because they ignored the social and cultural impact on motivation and only concerned with individuals (Verma & Sarangi, 2019).

According to D. Timothy and D. Olsen (2006), “Religiously motivated travel including pilgrimage has grown tremendously during the past fifty years” (p. 3). The pilgrimage destinations for Christians, Muslims, and Hindus receive about 240 million people every year (Kozak & Rimmington, 2000). These three religions are considered the major religions in the world with 33%, 21% and 14% followers respectively. Their main hubs have received the highest portion of religion tourism (Gedecho, 2014).

UNWTO identified six tourism quality standards namely accessibility, transparency, safety and security, hygiene, authenticity, and harmony. Pradeep and Pooja (2019) conducted a descriptive study for pilgrims visiting Varanasi and Allahabad cities in India used those standards as dimensions to examine pilgrim’s satisfaction. All six variables were treated as independent variables and the religious tourist satisfaction was treated as a dependent variable in the model. All variables contributed positively to satisfaction with transparency, safety and security, and accessibility as most important factors respectively (Pradeep & Pooja, 2019).

Various qualitative and quantitative studies have been done in India about the religious tourism, they have concluded that the services that act as satisfaction enhancers are food, accessibility, accommodation, and transportation (S. Gupta & Basak, 2018; Patwal & Agarwal, 2013). Exploratory research and literature review in tourism in South-Asian destinations identified ten service quality dimensions in tourism. These dimensions are core-tourism experience, information, hospitality, the fairness of price, hygiene, amenities, value for money, logistics, food, and security (Bindu, Chandrasekharan, Prakash, & Ram, 2009).

A study done by Verma and Sarangi (2019) modeled attributes of religious tourism in Kumbh Mela, India. The study integrates motivation, safety, service quality, satisfaction, and loyalty attributes
in a single modeling framework. Followed by a second order hierarchical structural equation model to explore a significant relationship among those attributes. The study results found that the antecedents of satisfaction are motivation, service quality, and safety while loyalty was their predecessor.

Similarly, in India, a questionnaire was done by VENKATESAN (2015) to measure the service quality in Navagraha Temples based on an eight dimensions model which are: information center, personal information, logistics, hygiene, security, food, amenity, and distractions. The study found that Amenity and Distractions had the higher satisfaction among the pilgrims unlike the food, personal information, hygiene, and security which had the lowest satisfaction.

Mawa (2004) studied tourism services at Shri Mata Vaishno Devi, the findings of the study stated that pilgrims gave good impressions about transport services. The retail shopping services come in second place with almost satisfied, though they were less satisfied with sanitation, availability of drinking water, blankets, and telecommunications.

Pai, Prabhu, and Nayak (2013) conducted a study to measure the service quality in Udupi. There were some factors sought by the pilgrims, shopping, and tourism services just to name a few. But they were satisfied with transportation, accommodation, and room rental. The researchers suggested that pilgrims should be served with smile and empathy also paying more attention to the pilgrim’s safety.

Patwal and Agarwal (2013) studied the factors that affect the service satisfaction among the pilgrims in Mahakumbha Mela site at Allahabad. Due to the dissatisfaction with basic services, support facilities, and enhancers pilgrims were partially satisfied with site. The suggestion of the authors was to develop active strategies to attract more tourists in future.

In order to understand the perception of tourists at the religious site of Mansa Davi Temple in Panchkula of Haryana, Gautam and Thakhur (2014) carried out a study. They found that all the tourists were significantly satisfied with the services provided in the Temple site, especially transportation, infrastructure, availability of parking, and good security measures and safety. Also, the study
suggested that services such as availability of guides, clean food, and beggars’ problems must be resolved by shrine or government to increase the satisfaction of tourists.

In another study, B. Gupta and Sharma (2008) attempted to determine the levels of satisfaction of pilgrims in Katran. They chose 150 pilgrims, through random sampling techniques, to conduct a five-point Likert scale questionnaire. The study found that tourists were satisfied with the religious ambience inside the hotel lobby and the room’s interior design. Some attributes were found to be indifferent such as availability of non-alcoholic drinks and vegetarian food and the dissatisfying attributes were information about religious destination and itineraries made for sale in the religious site.

Babu (2013) studied the pilgrimage center of Tirupati to know the visitor’s perception about the services provided in the temple town. He found that visitors were satisfied with accommodation, transportation, and the quality of food and hygiene. However, they were dissatisfied with the security of their valuables and belongings, and the poor staff and local vendors’ behavior towards them.

Gurav and Jagtap (2014) studied the service satisfaction at temple of Jejuri Khandoba in Pune by using a questionnaire. The study indicated that pilgrims were satisfied with transportation facilities, food, accommodation, and safety and security. The source of dissatisfaction was from lack of potable water, food arrangements at and around the temple, and the luggage safety during crowded religious ceremonies.

Kumar and Singh (2015) conducted a study in Naina Davi shrine a Hindu religious site in North-West India. They collected data using a five-point Likert scale questionnaire distributed to 150 pilgrims in total. The questionnaire consisted of three parts where the first part concerned with the socio-demographic characteristics of the pilgrims, the second part was to gather data on satisfaction and their expectation of the destination (this part was answered at the beginning of their visit), and the third part consisted of questions about their overall satisfaction and their future behavior. It took them more than 4 months to gather the data (January to April 2015). The study found that the pilgrims were satisfied with ten attributes that are transportation, roads condition, accommodation, food variety,
quality of food and drink service, local resident, vendors and shopkeepers’ honesty, security of their luggage, safety, and availability of medical facilities. Nevertheless, they were neutral about five attributes namely availability of tourist’s attractions, entertainment facilities, information center, price of souvenirs charged, and availability of service provider in the area. The pilgrims were dissatisfied with four attributes namely cleanliness, price of accommodation, cloakroom availability, and public utilities availability such as drinking water and toilet services.

In Gishen Mariam, Ethiopia, Gedecho (2014) carried out an in-depth interviews with the informants and a questionnaire for visitors. In terms of the questionnaire, 177 out of 200 filled it which makes the response rate 88.5%. The study found that in order to make Gishen Mariam a religious destination a lot of services should be developed such as transportation, roads quality, government attention, settlement, and unsuitable administrational structure of church. Also, as only Ethiopian people were included in the study sample and no abroad visitors were included, the study indicated the poor marketing efforts of defining this destination as a religious tourism destination in addition to the absence of having religious tourism products as the reasons behind not having international visitors.

2.3.5 Service Quality in Hajj

Research on service quality in Hajj is relatively limited. F. M. Othman (2003) is among the first authors who attempted to improve the quality of service provided to pilgrims during the Hajj season by developing a system of Mobile Service Units (MSUs) as a replacement to the system of fixed centers. The author argued that the proposed system would be able to serve 4.8 million pilgrims by 2025. To capture the opinions of Hajj service providers such as managers and supervisors of the proposed system, a questionnaire was designed and distributed to a total of 500 respondents, 297 of which completed and returned the questionnaires constituting a response rate of 59%. Using a four-point scale ranging from 1 (extremely sufficient) to 4 (not sufficient at all), respondents were asked to rate 26 different types of services provided to pilgrims during Hajj. The results showed that the respondents rated 18 of the 26 service types to be sufficient with a mean score of at least three.
These services include, but are not limited to, medical care, accommodation, emergency, transportation, and food and drink services. In addition, the respondents were asked to rate the feasibility of a total of 59 different services suggested to be offered by the proposed MSUs on a four-point scale ranging from 1 (Not feasible at all) to 4 (feasible very much). The results revealed that the respondents rated 44 out of 59 services to be feasible to be provided by the MSUs. These services included “lost people guidance center,” emergency center, and educational and awareness center. In conclusion, the study indicated that the proposed system is feasible and could enhance the availability and quality of the services provided to pilgrims during Hajj.

Haq and Jackson (2009) investigated the service quality of Hajj as perceived by Pakistani pilgrims who are residing in both Pakistan and Australia using qualitative research. The study focused on exploring pilgrims’ perception and attitude using in-depth, face-to-face interviews. A purposive sampling technique was used to select 45 respondents who have been at least once to Hajj from Pakistan or Australia. In the interviews, the respondents were requested to provide their expectations before and after the trip to Hajj. The authors reported that respondents residing in Pakistan possessed an uncritical view of Hajj and all of them indicated that they were very happy with their Hajj experience. On the other hand, respondents residing in Australia contrasted the view of pilgrims residing in Pakistan and stated that the quality of the services provided was below their expectations. The author believed that culture and type of lifestyle may have played a role in the pilgrims’ responses towards the quality of services provided at Hajj.

From the conducted research, five studies discussed the service quality of Hajj travel agents. First of all, Peck (2014) evaluated the quality of service provided by Hajj agents in South Africa during the Hajj seasons 2006-2007. The author conducted both qualitative and quantitative research methods to achieve the goal of this study. The qualitative research method included in-depth interviews with key stakeholders of the Hajj industry in South Africa including, Fifteen Hajj agents, one counselor from the South African Department of Foreign Affairs, and three officials from the
South African Hajj and Umrah Council (SAHUC). The quantitative research method, on the other hand, consisted of a questionnaire that was distributed in two locations namely, the Islamic Unity Convention in Athlone and the Kensington Civic Centre in Kensington. A total of 1690 questionnaires were distributed in the first location, 326 of which were completed and returned from the two locations combined. The questionnaire was designed to solicit pilgrims’ responses on matters including but not limited to accommodation, meals, and the level of assistance provided to pilgrims by Hajj agents’ staff during the Hajj journey. The study revealed that most of the respondents were satisfied or very satisfied with the accommodation (93%), meals (92%), and staff assistance and cooperation (88%).

Hafid and Tahmir (2016) evaluated the quality of services provided by the Office of Religious Affairs of Hajj in Gowa, Indonesia. The services provided by the Office of Religious Affairs include planning, monitoring, and implementation of activities provided to pilgrims. A Qualitative research method, in-depth interviews, was used in this study to reach the main findings. The study revealed that pilgrims were not satisfied with the services provided by the Office of Religious Affairs. This dissatisfaction was realized from the registration to the time of departure. The study also reported that the participants rated the planning and monitoring aspects to be lower than the expected level.

The effect of service quality on brand image and relationship equity of Hajj and Umrah travel agents was examined in Bandung, Indonesia (Kurniawan & Sidarta, 2016). The study used a survey method, which was based on the SERVQUAL model. A sample of 200 respondents was reached, 187 of which completed and returned the survey. The data were analyzed using the partial least squares and structural equation modeling (Hansemark & Albinsson) methods. The results indicated that all the five dimensions of the SERVQUAL namely tangible, reliability, responsiveness, assurance, and empathy had significant effects on service quality. Besides, service quality had a significant effect on brand image and relationship equity.
Hajj quality is an area that is rarely addressed, and a study proposed six dimensions using the content analysis method to aid hajj tourism and set a standard for researchers. The investigation used semi-structured interviews with Turkish Hajj agents and pilgrims. The proposed dimensions for services are accommodation, internal and external transportation, guiding services, personal assistantship, health services, and procedural services. The paper used a qualitative approach with a limited sample of ten participants from one city in Turkey (ARASLI, ÇAKMAKOĞLU, ARICI, & ARASLI, 2017).

A similar study was conducted in Malaysia to assess the quality of services provided by Hajj and Umrah travel agencies (SHUKRI, SET, & YAAKOP, 2019). The study also examined the impact of service quality on the decision to purchase the Umrah package from a travel agent. A sample of 319 participants was recruited based on a snowball sampling technique to participate in the study by filling a questionnaire that was based on the SERVQUAL model. The results showed that tangible, responsiveness, assurance, and empathy had significant effects on pilgrims’ intention to purchase the Umrah package from a travel agent. The reliability dimension was found to have no significant effect on pilgrims’ loyalty to a travel agent.

In the same context, the influence of service quality of Hajj and Umrah travel agents in Malaysia on customer satisfaction was evaluated (B. Othman, Harun, Rashid, & Ali, 2019). The study sought to evaluate the travel agents’ perception of the services that they provided and their influence on customer satisfaction. To achieve this goal, the study used a questionnaire, which was largely based on the SERVQUAL model, and approached 500 respondents based on a convenience sampling method, and 384 of the respondents completed and returned the questionnaire. The partial least squares and SEM methods were used to analyze the results. The results revealed that service quality and its dimensions namely tangible, reliability, responsiveness, empathy, and assurance had significant and positive effects on customer satisfaction.
On the other hand, the second stream of articles documented the perception of the quality of services provided to pilgrims during the Hajj season in four different locations in Saudi Arabia namely Makkah, Medina, Mina, Arafa, and Muzdalifa. Jabnoun (2003) was the first to evaluate the quality of service during Hajj using a modified version of SERVQUAL or what the author named HAJQUAL. The HAJQUAL model items based on the five original dimensions of the SERVQUAL model namely, tangible, reliability, responsiveness, empathy, and assurance in addition to the accessibility dimension and overall satisfaction as dependent variable. The questionnaire was administered in United Arab Emirates (UAE) and was sent to 180 pilgrims through fax and email. Of those, 110 respondents completed and returned the questionnaires. Factor analysis and descriptive statistics techniques were used to analyze the data. The factor analysis yielded seven factors with a factor loading of equal to or larger than 0.4. These factors are human service, accommodation in Makkah, Mina-Arafa, accessibility, bathroom accessibility, bathroom cleanliness, and accommodation outside Makkah with items related to the six original dimensions. The results revealed that the overall service quality was rated as moderate. Also, only two out of the seven factors, namely bathroom accessibility and bathroom cleanliness were rated as of a low quality.

Eid (2012) also investigated the pilgrims’ perception of the Hajj service quality using a modified version of the SERVQUAL model. The questionnaire was distributed to a sample of 1900 pilgrims who were from five different countries namely the United Kingdom (UK), the United States of America (USA), Saudi Arabia, Egypt, and Indonesia. Only 934 of the 1900 respondents completed and returned the questionnaires leading to a response rate of nearly 49%. The study indicated that there are significant differences between the perception and expectation in all the five dimensions of the SERVQUAL. The expectation for the tangible, reliability, and responsiveness dimensions was higher than the perception, which led to a negative quality gap. Also, the perception of assurance and empathy dimensions was higher than the expectation, which led to a positive quality gap. Examples of the services that were rated to be of high-quality included food and drink services and safety and security services. Moreover, the services that were considered as poor by the respondents
included the transportation services, the reception services at both the arrival and departure and the availability of bathrooms and pedestrians. In addition, the study indicated that there were differences in service quality among nationalities although no further information was provided.

In addition, Darfoon (2013) examined the quality of Hajj services from the pilgrims’ perception. Mixed-method research including in-depth interviews and a survey was used in this study. Seven pilgrims from the USA were selected based on purposive sampling to participate in face-to-face interviews. The structure of the interviews was divided into eight themes namely motivation and importance of Hajj, planning for the journey, transportation, accommodation, food and beverages, tour guide services, accessibility and cleanliness, and price and perceived value. The feedback solicited from the interviews assisted in the development of the questionnaire. A considerable part of the questionnaire was adapted from the SERVQUAL model. Examples of the dimensions that were used are tangibles, promise-keeping for reliability, and accessibility. Besides, two more dimensions were added which are problem-solving and caretaking. A total of 425 pilgrims were reached in 13 Islamic centers in four states namely Florida, Georgia, South Carolina, and North Carolina. Of those, 204 respondents completed and returned the questionnaires leading to a response rate of 45%. The data were analyzed using factor analysis, independent t-tests, Analysis of Variance (ANOVA), correlation analysis, and regression analysis. The factor analysis led to the development of new five quality dimensions namely mobility, food services, caretaking, accommodation, and problem-solving. The study also revealed that respondents were satisfied with the food service followed by caretaking, while they were less satisfied with accommodation followed by mobility.

In their book, Alsharief and El-Gohary (2017) conducted a mixed-method research to measure the quality of services provided during the Hajj season of 2006. For the qualitative part of the research, the authors conducted in depth interviews with a sample of 46 pilgrims randomly chosen from five different nationalities namely Egypt, Indonesia, Britain, United states of America, and Saudi Arabia. The interviews were comprised of four questions which concerned the reception,
transportation, and health services provided at King Abdulaziz International Airport (KAIA) and the holy places, the best services during Hajj, the worst services during Hajj, and the overall perception of Hajj in terms of pleasure and safety. For services at the airport, the results of the interviews indicated that 61% of the pilgrims were not satisfied with the reception service, 50% were not satisfied with the airport facilities, 52% were not satisfied with customs clearance, and 50% were not satisfied with the availability of information at the airport. For services at the holy places, the results indicated that 61% of the pilgrims were not satisfied with the services provided such as lack of transportation services, lack of pedestrian routes, lack of toilets, and poor hygiene. Also, the pilgrims rated the safety and security at the holy places, the development of the two Holy Mosques, religious awareness programs, food and drink services, the gifts distributed by the Saudi government at the airport as the best services during Hajj. In addition, the pilgrims rated the transportation services, hygiene and availability of toilets, and the reception at the airport as the worst services during Hajj. Moreover, the study reported that 50% of the pilgrims were satisfied with the overall Hajj journey.

For the quantitative part of research, the authors used the SERVQUAL model. The authors also investigated the influence of service quality on pilgrims’ satisfaction. A sample of 1900 respondents based on a simple random sampling technique was chosen to participate in the study. The participants were selected from four different countries representing four different continents, namely Egypt, Indonesia, Britain, United States of America in addition to Saudi Arabia. Also, the questionnaires were formulated in three different languages which are English, Arabic, and Malay depending on the language of the participants. The participants returned a total of 934 questionnaires that were valid for analysis. The results indicated that the pilgrims of all nationalities were not satisfied with the tangible, reliability, and responsiveness factors of the SERVQUAL with average gap scores – 0.62, -0.78, and –0.78, respectively. On the contrary, the pilgrims were satisfied with assurance and empathy with average gap scores of 0.68 and 0.72, respectively. Specifically, this means that the pilgrims were satisfied with the knowledge and courtesy of the Hajj employees and their ability to instill trust and confidence in the participants. The pilgrims were also
satisfied with the safety and security levels during their Hajj experience. Moreover, the results revealed that the pilgrims’ nationality has an influence on service quality. Based on these results, the authors proposed a model that would lead to better management of Hajj services and activities.

Nevertheless, Table 3 summaries the literature on service quality in Hajj. As noted earlier, there is a dearth of research on the assessment of the service quality in Hajj. Several articles discussed the topic in terms of the pilgrims’ quality perception of the services provided and facilitated by the travel agents during the Hajj journey. Most of these articles used the SERVQUAL model or a modified version of it in which more quality dimensions were added to the model or the items listed within the five original dimensions were modified. In addition, several other studies used service quality models other than the SERVQUAL model as stated in the literature above. Nonetheless, only a few articles evaluated the quality of the services provided to pilgrims during the Hajj season in the four main Hajj places namely Makkah, Medina, Arafat, and Muzdalifah. Thus, the lack of research on service quality in Hajj necessitates the need to further investigate this topic and contribute to the body of knowledge by either confirming the existing results or providing new findings that will thrive the current research.
Table 3: Summary of Literature review on Service Quality in Hajj

<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Dimensions</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Othman (2003)           | A system of mobile service units for the large-scale event industry: an implementation for the Hajj, the pilgrimage to Makkah, Saudi Arabia | - Mobile Service Units type such as medical care, accommodation, etc.  
- Service feasibility | The proposed system was feasible and could enhance the availability and quality of the services provided to pilgrims in Hajj. |
| Jabnoun (2003)          | Development of Hajqual: a marketing research tool to measure Hajj service quality | - Tangible  
- Reliability  
- Responsiveness  
- Assurance  
- Empathy  
- Accessibility  
- Service quality | The overall service quality was rated as moderate |
| Haq and Jackson (2009)  | Spiritual journey to Hajj: Australian and Pakistani experience and expectations | - Concept and practice of Hajj  
- Service perception and attitude of pilgrims | Respondents residing in Pakistan were very happy with their Hajj experience while respondents residing in Australia rated their experience to be below expectations |
| Al-Hoqail et al. (2010) | Pilgrims’ satisfaction with ambulatory health services in Makkah | - Pilgrim’s satisfaction  
- Demographic variables  
- Ambulatory health services  
- Tangible  
- Reliability  
- Responsiveness  
- Assurance  
- Empathy  
- Service quality | Significant relationship between level of education, occupation and satisfaction with health facilities and physicians. Tangibles, reliability, and responsiveness yielded negative service quality gaps while assurance and empathy yielded positive service quality gaps. |
- Transportation and accessibility  
- Guide service  
- Food service | The respondents were roughly neither satisfied nor dissatisfied with the services provided to them during the Hajj season. |
<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Dimensions</th>
<th>Findings</th>
</tr>
</thead>
</table>
- Overall experience | The majority of the respondents were either satisfied or very satisfied with the services provided. |
| Ahmad et al. (2014) | The effect of demographics on customer satisfaction amongst Malaysia Hajj Pilgrims: survey result | - Demographic variables  
- Customer satisfaction | Gender, age, occupation, level of education, and frequency of Hajj has no significant effect on pilgrims’ satisfaction. However, the category of Hajj pilgrims was found to have a significant effect on pilgrims’ satisfaction. Customers’ post-purchased value significantly affected satisfaction. Also, satisfaction significantly affected by trust and commitment to Haj and Umrah travel agencies. |
| Oktora and Achyar (2014) | The Effect of Post-Purchase Perceived-Value Towards the Relationship Quality of Hajj and Umrah Travel Agencies in Indonesia | - Post-purchase perceived value  
- Relationship quality  
- Satisfaction  
- Commitment  
- Trust | There was a positive and significant relationship between service quality and pilgrims’ satisfaction with the services provided by Hajj and Umrah travel agents. Also, the study reported a significant and positive relationship between |
- Quality management practices  
- Communication behavior | Quality management practices had a significant impact on customer satisfaction. Moreover, customer satisfaction significantly influenced communication behavior. |
| Ashdaq et al. (2015) | Analysis of Service Quality on Pilgrims’ Satisfaction and Image of Hajj and Umrah Travel Agents in South Sulawesi Province, Indonesia | - Service quality  
- Pilgrims’ satisfaction | |
<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Dimensions</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Hafid and Tahmir       | Hajj Service Management at the Department of Religious Affairs in Gowa Regency | - Planning  
- Monitoring  
- Implementation  
- Service quality  
- Satisfaction | pilgrims’ satisfaction and image of Hajj and Umrah travel agents.  
The pilgrims were not satisfied with the services provided, and they rated the planning and monitoring aspects to be lower than their expectation |
| Kurniawan and Sidharta | SERVQUAL on Brand Image and Relationship Equity                      | - Tangible  
- Reliability  
- Responsiveness  
- Assurance  
- Empathy  
- Accessibility  
- Service quality | All five dimensions have a significant effect on service quality |
| Hassan et al.          | A Conceptual Model of Perceived Value and Consumer Satisfaction: a Survey of Muslim Travelers’ Loyalty on Umrah Tour Packages | - Perceived value  
- Satisfaction  
- Loyalty | The emotional value and quality value had a significant effect on pilgrims' satisfaction. Also, the study reported that pilgrims' satisfaction significantly affects pilgrims' loyalty to Umrah travel agents. |
| Alsharief and El-Gohary | Service Quality and Religious Tourism: The Context of Hajj (Islamic Pilgrimage) | - Tangible  
- Reliability  
- Responsiveness  
- Assurance  
- Empathy  
- Accessibility  
- Service quality  
- Customer satisfaction | Tangibles, reliability, and responsiveness yielded negative service quality gaps while assurance and empathy yielded positive service quality gaps. |
| Othman, Harun, Rashid, & Ali | The impact of Umrah service quality on customer satisfaction towards Umrah travel agents in Malaysia | - Tangible  
- Reliability  
- Responsiveness  
- Assurance | The service quality and its dimensions had significant and positive effects on customer satisfaction. |
<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Dimensions</th>
<th>Findings</th>
</tr>
</thead>
</table>
- Accessibility  
- Service quality  
- Customer satisfaction  
- Communicative ecology  
- Satisfaction | The pilgrims were somewhat satisfied in general with the services provided by the Saudi government and Hajj authorities |
| Othman et al. (2019) | The impact of Umrah service quality on customer satisfaction towards Umrah travel agents in Malaysia | - Tangible  
- Reliability  
- Responsiveness  
- Assurance  
- Empathy  
- Accessibility  
- Customer satisfaction | Service quality and its dimensions namely tangible, reliability, responsiveness, empathy, and assurance had significant and positive effects on customer satisfaction |
- Reliability  
- Responsiveness  
- Assurance  
- Empathy  
- Accessibility  
- Service quality gap | All SERVQUAL dimensions had a negative gap meaning that respondents’ expectations were higher than their perception. |
| Ridha & Harris (2020) | Service Quality Related to Customer Satisfaction with Umrah Worship Package Preparation at PT. Marco Tour and Travel Jakarta: Spearman’s Correlation Coefficient | - Tangible  
- Reliability  
- Responsiveness  
- Assurance  
- Empathy  
- Accessibility  
- Customer satisfaction | A strong and positive correlation observed between two items in the responsiveness dimension and two items in the empathy dimension. |
<table>
<thead>
<tr>
<th>Author</th>
<th>Title</th>
<th>Dimensions</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nor et al. (2020)</td>
<td>The Role of Service Quality on Muslim Customer Satisfaction: A Case of Sustainable Umrah Industry in Malaysia</td>
<td>- Caretaking - Promise keeping - Problem solving - Accessibility - Tangibles - Customer satisfaction</td>
<td>A strong and positive correlation observed between each service quality dimension and customer satisfaction. Also, the regression analysis revealed that caretaking, promise keeping, accessibility, and tangibles had a significant and positive impact on customer satisfaction.</td>
</tr>
<tr>
<td>Othman et al. (2020)</td>
<td>The effects on customer satisfaction and customer loyalty by integrating marketing communication and after sale service into the traditional marketing mix model of Umrah travel services in Malaysia</td>
<td>- Tangible - Reliability - Responsiveness - Assurance - Empathy - Customer loyalty</td>
<td>Service quality and all its dimensions have a significant and positive influence on customer loyalty.</td>
</tr>
<tr>
<td>Othman et al. (2020)</td>
<td>Effects of Service Marketing Mix on Umrah Customer Satisfaction: Empirical Study on Umrah Traveling Industry in Malaysia</td>
<td>- Product - Price - Place - Promotion - People - Process - Physical evidence - Marketing communication - After sale service - Customer satisfaction</td>
<td>A significant relationship was observed between all service marketing mix dimensions and customer satisfaction.</td>
</tr>
<tr>
<td>Romadhoni et al. (2020)</td>
<td>Important Performance Analysis for Measuring Customer Satisfaction for Umrah Services Bureau</td>
<td>- Tangible - Reliability - Responsiveness - Assurance - Empathy - Customer satisfaction</td>
<td>The study reported that the top priority indicator to the respondents was the accuracy in service. In addition, the maintain performance indicators were equipment used are adequate, friendly, and serious service, and responsibility to deal with complaints from pilgrims. The other service indicators were regarded by the respondents as either of low priority or excessive.</td>
</tr>
<tr>
<td>Author</td>
<td>Title</td>
<td>Dimensions</td>
<td>Findings</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Othman et al. (2020)      | The effects on customer satisfaction and customer loyalty by integrating marketing communication and after sale service into the traditional marketing mix model of Umrah travel services in Malaysia | - Product  
- Price  
- Place  
- Promotion  
- People  
- Process  
- Physical evidence  
- Marketing communication  
- After sale service  
- Customer satisfaction  
- Loyalty  
- Marketing communication  
- After sale service  | All service marketing dimensions had a significant and positive influence on customer satisfaction.  
Also, the results indicated that customer satisfaction had a significant and positive influence on customer loyalty. |
| Shukri, Set, and Yaakop (2019) | Muslim Travelers’ perception On Quality of Service by Umrah and Hajj Travel Agencies in Malaysia | - Tangible  
- Reliability  
- Responsiveness  
- Assurance  
- Empathy  
- Purchase intention | The tangible, responsiveness, assurance, and empathy had significant effects on pilgrims’ intention to purchase the Umrah package from a travel agent |
2.4 Pilgrims Satisfaction

Like service quality, customer satisfaction is a concept that has been extensively studied and analyzed in the literature. There has been no consensus on a unified definition of customer satisfaction according to numerous studies that investigated the concept. For example, Oliver (1981) defined customer satisfaction as a psychological state of emotional response that a customer experiences due to disconfirmed expectancy in which a comparison between expectation and perception of a product or service is made. Swan and his colleagues defined customer satisfaction as a cognitive judgment regarding whether a product satisfies certain predetermined requirements (Swan, Trawick, & Carroll, 1982). Churchill Jr and Surprenant (1982) described customer satisfaction as the result of a customer’s conceptual response to the comparison between expectation and value and cost of purchase after a product they purchase and actual use of the product. Customer satisfaction also has been defined as the customer’s opinion, guided by assessment, of the product or service after use (Cadotte, Woodruff, & Jenkins, 1987). Fornell (1992) defined customer satisfaction as the overall assessment of a product or service after the purchase. Hansemak and Albinsson (2004) defined customer satisfaction as a behavior or emotional response to the difference between what customers expect and what they receive in terms of satisfying requirements or needs.

Customer satisfaction is influenced by many factors. Some of these factors are quality of service, competitive pricing, billing accuracy, speed of service, the kindness of employees, and employees’ friendliness (Hokanson, 1995). Also, the association between customer satisfaction and business performance was investigated. Williams and Naumann (2011) examined the relationship between customer satisfaction and business performance in one of the large 100 Fortune companies. The business performance was measured in terms of two main metrics namely financial performance including total revenue, growth of revenue at the account level, net-operating profit, and earnings per
share and market performance including stock price, price-earnings ratio, and value to cost ratio. A longitudinal analysis through a series of surveys over five years was conducted to collect the data in the study. The results indicated a positive relationship between customer satisfaction and revenue and growth of revenue. Also, the results revealed that there is a positive and significant relationship between customer satisfaction and total revenue, net income, and earnings per share. Moreover, the study reported a strong, positive relationship between customer satisfaction and stock price and value to cost ratio, and a moderate relationship between customer satisfaction and price-earnings ratio.

The factors that influence customer satisfaction has also been investigated in the tourism industry. The characteristics of 6768 hotels in 47 capital cities in Europe and their influence on customer satisfaction were explored (Radojevic, Stanisic, & Stanic, 2015). These characteristics were formulated in seven variables namely hotel star rating, distance from the city center, size of the hotel in terms of the total number of rooms, room price per night, the existence of air-conditioners in rooms, the existence of a lobby bar in the hotel, accessibility of free wi-fi network, and membership in a branded hotel chain. The data were collected using internet surveys and analyzed using a mixed linear regression model. The results revealed that hotel star rating has the largest influence on customer satisfaction. Also, the study reported that the presence of air-conditioning devices in rooms, a bar located within the hotel area, access to free of charge wi-fi Internet, membership in a branded hotel chain and price have also a significant effect on customer satisfaction.

The pilgrims’ satisfaction with ambulatory health services in Makkah during the Hajj season of 2008 was evaluated (Al-Hoqail, Abdalla, Saeed, Al-Hamdan, & Bahnassy, 2010). A sample of 500 pilgrims who attended five different hospitals was selected to complete a questionnaire. Two sampling techniques were used to recruit the respondents in the study. First, five hospitals out of ten hospitals that provide health services in both Makkah and Medina were randomly selected. Second, systematic
random sampling was used to recruit 100 respondents from each hospital leading to an aggregate sample of 500 respondents. Of those, 487 respondents completed and returned the questionnaires. The questionnaire was divided into four sections. The first section included demographic information of the respondents. The second section included questions on satisfaction with the comfortability of the respondents in the hospitals. The third section included questions about satisfaction with the physicians. The fourth part included questions on the satisfaction with the other health personnel. A five-point Likert scale ranging from 1 (lowest satisfaction) to 5 (highest satisfaction) was used. Descriptive statistics, t-tests, Mann Whitney test, the analysis of variance (ANOVA) or Kruskal-Wallis tests were used to analyze the data. The results indicated that there was a significant relationship between the level of education and the satisfaction with the health facilities and the satisfaction with physicians. Also, the occupation was found to have a significant relationship with satisfaction with the health facilities and with overall satisfaction. In general, the level of satisfaction as stated by the respondents was moderate with some services requiring improvements such as physicians and waiting area services.

Darfoon (2013) addressed the impact of service quality on the satisfaction of first-time pilgrims with the services provided to them during the Hajj season of 2012. A sequential mixed method consisting of in-depth interviews and a self-administered questionnaire with a seven-point Likert scale ranging from 1 for “strongly agree” to 7 for “strongly disagree” was used to collect the data. A sample of 425 respondents was reached, and only 183 respondents completed and returned the questionnaires, which led to a response rate of 45%. The data were analyzed using explanatory factor analysis, independent sample t-tests, ANOVA, correlation analysis, and multiple regression analysis. The study reported that the average score of the overall pilgrims’ satisfaction was 3.46 meaning that the respondents were roughly neither satisfied nor dissatisfied with the services provided to them during the Hajj season. Also, the results stated that gender, age, education, and marital status had no significant
effect on overall pilgrims’ satisfaction while only income was found to have a significant effect on overall pilgrims’ satisfaction. Furthermore, the overall satisfaction of pilgrims was found to be significantly influenced by package type with the five-star package being rated the highest with an average satisfaction score of 3.68 and the two-star package being rated the lowest with an average satisfaction score of 2.75.

Ahmed and his colleagues examined the effect of demographic variables on customer satisfaction among Malaysian pilgrims using a self-administered questionnaire (M. Ahmad et al., 2014). A sample of 500 respondents was selected to participate in the study by completing the questionnaire. Of those, only 352 respondents completed and returned the questionnaires leading to a response rate of 70%. The study reported that gender, age, occupation, level of education, and frequency of Hajj has no significant effect on pilgrims’ satisfaction. However, the category of Hajj pilgrims was found to have a significant effect on pilgrims’ satisfaction.

Oktora and Achyar (2014) investigated the impact of post-purchase perceived value on relationship quality including satisfaction, commitment, and trust towards Hajj and Umrah travel agencies in Indonesia. A sample of 300 respondents who had used the Hajj or Umrah travel agencies in Jakarta, Indonesia, was selected using a convenience sampling technique to participate in the study. Of those, 219 respondents completed and returned the questionnaires. the data were analyzed using descriptive statistics, t-tests, and factor analysis. The results revealed that customers’ post-purchased value significantly affected satisfaction. Also, satisfaction significantly trust and commitment to Haj and Umrah travel agencies.

The influence of customer satisfaction as a moderator variable between quality management practices and communication behavior amongst Malaysian Hajj pilgrims was examined using a survey (M. F.
Ahmad et al., 2014). A sample of 500 respondents was selected to participate in the study and complete the developed questionnaire. Of those, 352 questionnaires were returned leading to a response rate of 70%. Descriptive statistics, t-tests, and factor analysis were used to analyze the data. The results showed that the quality management practices had a significant impact on customer satisfaction. Moreover, customer satisfaction significantly influenced communication behavior.

Ashdaq and his colleagues investigated the impact of service quality on pilgrims’ satisfaction of Hajj and Umrah travel agents in South Sulawesi Province, Indonesia (Ashdaq, Maupa, Amar, & Nursyamsi, 2015). The study also investigated the impact of pilgrims’ satisfaction on the image of Hajj and Umrah travel agents. A questionnaire based on the SERVQUAL model was developed, and a sample of 391 respondents who traveled for Hajj or Umrah during the period 2010 to 2014 using the Hajj and Umrah travel agents were randomly selected to participate in the study. Of those, only 378 questionnaires were eligible to be included for the data analysis. Respondents were requested to indicate their satisfaction with the services provided to them by the Hajj and Umrah travel agents before the trip and their satisfaction with the services provided during the trip. The results revealed that there was a positive and significant relationship between service quality and pilgrims’ satisfaction with the services provided by Hajj and Umrah travel agents. Also, the study reported a significant and positive relationship between pilgrims’ satisfaction and image of Hajj and Umrah travel agents.

Hassan, Maghsoudi, and Nasir (2016) examined the effect of perceived value on satisfaction and loyalty toward Umrah travel agencies in Malaysia. In specific, the study investigated the effect of perceived quality value, perceived price value, perceived emotional value, and perceived social value on satisfaction with Umrah travel agents. Also, the study investigated the mediation effects of pilgrims’ satisfaction on the relationship between the preceding variables and loyalty of those pilgrims’ travel agents. Moreover, the study examined the impact of pilgrims’ satisfaction of their loyalty to the travel
agents. A self-administered questionnaire was developed and distributed to a sample of 600 respondents chosen purposively. Of those, only 190 respondents completed and returned the questionnaires, which constating a response rate of almost 32%. The data were analyzed using SEM technique. The results revealed that emotional value and quality value had a significant effect on pilgrims’ satisfaction. Also, pilgrims' satisfaction mediated the relationship between emotional value and loyalty. Furthermore, the study reported that pilgrims' satisfaction significantly affects pilgrims’ loyalty to Umrah travel agents.

The impact of communicative ecology on the satisfaction of Pakistani pilgrims with the services provided in Hajj was investigated using a qualitative research technique (F. R. Khan, Gazzaz, & Al Majdhoub, 2019). Interviews consisting of close and open-ended questions were used to collect data from 439 respondents who were chosen based on stratified-systematic and simple random sampling techniques. Descriptive statistics and stepwise multiple regression analyses were used to analyze the data. The results revealed that using a five-point Likert scale ranging from 1 for highly dissatisfied to 5 highly satisfied, the pilgrims were somewhat satisfied in general with the services provided by the Saudi government and Hajj authorities with an average score of 3.98. Besides, pilgrims were most satisfied with the services provided in the areas of cleanliness and hygiene with an average score of 4.55, while they were least satisfied with the services provided in private transportation with an average score of 2.04.

The influence of service quality on pilgrims’ satisfaction with the services provided by Umra travel agents in Malaysia was examined (B. Othman et al., 2019). Five dimensions of service quality namely tangibles, reliability, responsiveness, assurance, and empathy were used. A self-administered questionnaire was developed, and a sample of 500 participants using a convenience sampling method were chosen to participate in the study. Of those, only 384 respondents completed and returned the
questionnaires leading to a response rate of nearly 77%. Descriptive statistics and SEM were used to analyze the data. The results showed that the overall service quality had a significant and positive effect on pilgrims’ satisfaction. Also, all dimensions of service quality were found to have a significant and positive effect on pilgrims’ satisfaction.

2.5. Research Gap and Discussion

The number of studies as represented in the literature review is incomparable to a massive global event like Hajj and relatedly similar religious tourism massive gathering events. This grasp attracted researchers to address Hajj seasons to some degree including seasons 2003 (Jabnoun, 2003; F. M. Othman, 2003), 2005 (Alshareaf and Gohary, 2017), 2008 (Hagg and Jackson, 2009), and 2012 (Darfoon, 2013). There is a niche to explore Hajj seasons after the initiation of Vision 2030 in 2016 and the last investigation addressed season of 2013. There are a growing number of studies which addressed Umrah and most of the studies evaluate Hajj tourist agencies’ services only. There is a space to investigate service quality in Hajj by a comprehensive evaluation subtracted from the voice of the pilgrims. Thus, it can pinpoint dimensions acquire quality improvement and capacity of services and the tendency for extended programs and activities. A qualitative and quantitative approach should be deployed to present an improved version of existing frameworks to examine service quality and satisfaction levels in Hajj event. From the literature a sample from a developed country pilgrim showed more critical results as the findings of Alshareaf and Gohary (2017) and Hagg and Jackson (2009) stated. The cultural background and the challenging nature of quota system selection in some countries might lead to subjectivity in participation. A sample from US pilgrims could be representative with the multidimensional cultural backgrounds, familiarity with research surveys, and critical unbiased opinion.
Service quality dimensions in Hajj and other religious events used in literature can be aided with other dimensions targeted in the Visions 2030 objectives and an expert panel can aid in the confinement of a robust tool for the research. Factors such as capacity, trains services, digitalized services, and safety and security have not yet been evaluated in depth to aid all Hajj services providers. According to (Alshareaf and Gohary, 2017; Darfoon, 2013) more detailed research to investigate services in Hajj is needed.
CHAPTER THREE: METHODOLOGY

3.1 Introduction

Service quality and satisfaction are focal points in literature and have shown growing attention from researchers to shed light on the importance of quality in various tourism systems. This study is aimed to develop a framework to evaluate service quality in Hajj event from the perspective of Vision 2030 DARP program objectives. The present chapter will consist of three parts beginning with a theoretical foundation to emphasize some concepts realized from the conducted literature review, followed by an expert study to select research hypothesis dimensions, and develop a research instrument with those variables to address the research questions. The last part will illustrate the study proposed framework and aspects related to the research design including research design, sample size, sampling technique, data collection processes, and data analysis approach.

3.2 Theoretical Foundation

Approaching services, the measures consumers use to evaluate the service quality is challenging due to the nature of services intangibility, heterogeneity, simultaneity of production and consumption, and specificity of time (Athanassopoulos, Gounaris, & Stathakopoulos, 2001). The recognition of service quality dimensions was a starting point for researchers and the development of measurement scales was a successive contribution in literature. One of the main arguments has been channeled on whether service quality and customer satisfaction can be evaluated by two main approaches:

1. Satisfaction as function of disconfirmation
   \[ Satisfaction = f (Perception - Expectation) \]

2. Satisfaction as a function of perception
   \[ Satisfaction = f (Perception) \]
In the disconfirmation approach service quality is conceptualized as a function of the difference between the consumers expectations and the actual performance of the service. It allows the service providers to observe the gaps in the delivered services. The Gap model and SERVQUAL instrument presented sequentially by Parasuraman et al (1985, 1988, 1991a,1991 b, 1994) is the operational interface of the disconfirmation paradigm and laid the cornerstone for the service quality measurement debate. On the other hand, the perception approach supports that service quality nearly matches customer performance perception of the provided service. This concept operations were geared by Cronin and Taylor (1992,1994) instrument SERVPREF with a multidimensional construct that can be modified to suit several service contexts like SERVQUAL(Bastos, Augusto, & Muñoz Gallego, 2008; Davis & Heineke, 1998).

Overall, several measures have been introduced in literature to capture consumers` perceptions, expectations, and overall satisfaction in service settings with SERVQUAL and SERVPERF dominant application. Researchers raised challenges linked to Gap model measurement using the comparison between performance and expectation. SERVPREF instrument has been empirically examined and confirmed superiority in measuring service quality using performance only with substantial backing from scholars(Adil, Al Ghaswyneh, & Albkour, 2013).

In this research, the perception approach in measuring service quality and satisfaction will be considered to avoid concerns related to expectation inclusion. In addition, another concern to be avoided from the SERQUAL model critique is the overlap between technical and functional dimensions and that will be considered in the instrument development phase. Based on the disconfirmation approach, acquiring two questionnaires prior and post of the service consumption should be collected from the same respondent (22 items for expectation and 22 items for performance perception in the original SERVQUAL instrument). In this study addressed context it will be extremely challenging to attain
two succeeding surveys from the same set of pilgrims twice and there will be a high chance of reduction in the number of insightful responses from participants. Moreover, not only the genuine reaction of the participants will change the number of participants might be affected, and the number of items should reach areas needed in the context of Hajj to collect a meaningful data for the mega event bundled with a stream of services delivered by diverse stakeholders. The SERVPREF performance only approach will be utilized instead of the difference of perception and expectation scores.

Another conceptualization from the conducted literature review is the cultural and social backgrounds effects when picking responses from the vast Hajj participants population. Haq and Jakson (2009) in their study compared two Hajj pilgrims’ samples from two different countries (Australia and Pakistan). The paper investigated factors related to participants country, cultural background, individualism, and opinion effects on consumer behavior in selecting Hajj services package. The findings showed that pilgrims from Australia are more selective, critical, and cautious than the Pakistani participants that only attracted mainly to services cost.

An additional effect of selecting samples from different countries was observed in Alsharief and El-Gohary book (2017) where the selected sample involved pilgrims from the highest anticipating countries from five of the world continents (Indonesia, Egypt, KSA, UK, and USA). The book findings indicate that there are discrepancies between the differences from one nationality to another and differences in the elements that recorded the maximum and minimum discrepancies between the expectations and the perceptions. In this study, the targeted sample will be US pilgrims who hold more than fourteen thousand seats in Hajj event. It will be more practical in data gathering and avoid cultural effects, instrument translation inconsistencies, and communication challenges. Later in the research progress the participating organizations and states will be specified after the development of data collection plan.
3.3 Research Design

Mixed research method can be identified as fusing both qualitative and quantitative methods in a single study data collection or analysis simultaneously or sequentially with integration of data in one point or several points in the study process (Creswell, Plano Clark, Gutmann, & Hanson, 2003). The mixed method follows various typologies shaped by scholars’ theoretical concepts, classification, and forms.

Mertens (2005) differentiated between the mixed method applied to answer research questions in one study and the mixed method that can be part of massive research projects and attend to some of the research questions. In addition, he defined the data collection forms to parallel form and sequential form. The parallel form data collection is a concurrent collection and analysis mixed method of the two types of data. On the other hand, in the sequential form data collection, one sort of data delivers a foundation for the other sort of data.

Caracelli and Greene (1997) categorized mixed designs typology to three component designs (triangulation, complementary, and expansion) and four integrated designs (iterative, embedded, holistic, and transformative). From the component designs Triangulation is the use of mixed methods to evaluate the same phenomena in convergence with the aim to increase validity. On the contrary, the complementary design has one leading method supported or explained by the other method.

Creswell and Clark (2007) presented mixed method designs typology in four categories linked with timing, mix, and weighting of the methods. The four designs are triangulation (concurrent), embedded (concurrent and sequential), explanatory (sequential: QUAN followed by QUAL), and exploratory (sequential: QUAL followed by QUAN). Theoretically, the concepts laid down provide detailed explanation about research designs typology out of the contradictory between scholars and could be insightful in intended research design specifications (Cameron, 2009).
Hajj service quality research still in budding with limited number of studies addressing the context specifically. This led the research to having an exploratory nature and developing comprehensive robust models requiring experts panel to aid the selection of the instrument dimensions and questionnaire refinement. The zeal determination in this research will utilize an exploratory sequential mixed research design or method, where the results from the first phase will shape and refine the research instrument. The first method will be based on a Delphi approach with number of experts using a hypered questionnaire of qualitative and quantitative questions and followed by conferencing interviews, if needed to capture any additional thoughts or further explanations. The second method will comprise the instrument design aided by the results from the Delphi approach. After the instrument design, validation, and pilot testing comes the data collection phase from the targeted sample of pilgrims. The last phase will be the analysis phase after refining the collected data and report findings. The proposed research design in Figure 9 illustrates the research design processes.

Figure 9: Research Design Processes
3.4 Delphi Approach

The origin of the word Delphi is linked to the Oracle at Delphi back in Apollo ancient Greek times, where it was considered to predict the future. In the fifties an industrial firm designed a descriptive questionnaire approach as one of the most common consensus methods. Delphi approach relay on an expert panel to explore a process with the lack of empirical data and agreement (Fry & Burr, 2001).

The Delphi approach results in this study will be supported by unstructured questions following the quantitative questions and notes taken from video conferencing or calls with the participants. Results from this expert panel can confirm and support the literature review findings to develop a novel research instrument. The panel anonymity is considered in the approach and the panel selection criteria will include fifteen graduate level participants (mostly doctoral) who interact directly with Hajj affairs and hold a stake in the process. Five of the experts panel are interacting with Hajj agents and related organizations in the US and the other ten experts reside in Saudi Arabia relate directly to Hajj through occupation, consultation, or committee membership. According to Duffield (1989), if the Delphi approach experts panel is homogenous ten to fifteen participants are considered sufficient. This technique will introduce multiple rounds of survey that seek to find consensus by relying upon the preceding round results. Rounds in this study will be three rounds with (1(low)-5(High)) scale questions.

The first round will aid the selection of the research instrument dimensions to measure Hajj service quality. The second round will introduce the initial questionnaire questions modified from SERVQUAL model and other proposed models from the literature. The third round will collect consensus from participants after alterations captured from the second round. Questions in the study will be assessed from three perspectives, questions priority, questions applicability and questions clarity.
Questions with average below four will be considered for modifications in addition to exploring the notes from the unstructured questions and participating experts’ verbal insights. This approach will cover the Likert scale part of the proposed research instrument and the demographics and general questions will be added further in this research.

3.4.1 Round One Survey

The first-round survey contained 11 items and intended to collect relevant dimensions of services from the Hajj process priority and clarity. The round return rate was 100% (15 experts) and showed 72.73% success in priority and 27.27% rejection rate. On the other hand, dimensions clarity showed 54.55% successfulness rate and 45.45% rejection rate. The dimensions mean score lower than 4 in priority will be removed or replaced and clarity means lower than 4 will be revised. Table 4 represents the mean scores for the fifteen experts in round one. Moreover, the notes collected from the open-end notes and calls with the experts are:

1. Capacity and Accessibility are related and should be investigated under some of the dimensions represented.

2. Allegiance usually takes place where competition exists, and the Hajj context is set with a faith obligation and premises specificity.

Table 4: Delphi Approach Round One Experts ‘Means

<table>
<thead>
<tr>
<th>No.</th>
<th>Hajj Service</th>
<th>Concept Definition</th>
<th>Priority of Dimension</th>
<th>Clarity of Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quality</td>
<td></td>
<td>(Low) 1 to 5</td>
<td>(Low) 1 to 5</td>
</tr>
<tr>
<td></td>
<td>Dimension</td>
<td></td>
<td>(High)</td>
<td>(High)</td>
</tr>
<tr>
<td></td>
<td><strong>Accessibility</strong></td>
<td><strong>Hospitality</strong></td>
<td><strong>Guidance</strong></td>
<td><strong>Transportation</strong></td>
</tr>
<tr>
<td>---</td>
<td>-------------------</td>
<td>-----------------</td>
<td>--------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>1</td>
<td>Addresses the ease of access to rites main sites, restrooms, restaurants, clinics, guidance, shops, and other needed infrastructure from accommodations selected in various Hajj journey in Makkah and Medina.</td>
<td>Services provided to pilgrims including accommodations, food services, and other amenities.</td>
<td>All guidance offered in Hajj journey includes regulatory instructions, religious consultation, rituals guidance, and other information inquiries.</td>
<td>Various transportation means used from ports of entry and to perform rituals including trains, buses, taxis or private cars, and monorails.</td>
</tr>
<tr>
<td></td>
<td><strong>Safety &amp; Security</strong></td>
<td>Related crowd management plan and tools to avoid stampede or accidents including all systems of cohorts partitioning and pilgrims flow through Hajj various sites.</td>
<td>4.9</td>
<td>4.7</td>
</tr>
<tr>
<td>---</td>
<td>----------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>-----</td>
</tr>
<tr>
<td>8</td>
<td><strong>Health Care</strong></td>
<td>All health measures and units are provided from the point of entry and through all the pilgrimage activities.</td>
<td>4.5</td>
<td>4.4</td>
</tr>
<tr>
<td>9</td>
<td><strong>Capacity</strong></td>
<td>Hajj event is a massive gathering with intense nature and this dimension to measure capacity of facilities of services in Hajj to realize the potential capacity to increase, decrease, or maintain the number of participants in the upcoming events from the pilgrims’ point of view.</td>
<td>3.6</td>
<td>3.9</td>
</tr>
<tr>
<td>10</td>
<td><strong>Pilgrims Satisfaction</strong></td>
<td>The overall satisfaction of the Hajj experience from the perceived services from the pilgrim arrival to departure.</td>
<td>4.1</td>
<td>4.3</td>
</tr>
<tr>
<td>11</td>
<td><strong>Allegiance</strong></td>
<td>The intention to extend the visit to other heritage sites in Saudi Arabia related to Islamic history, revisit for Umrah in open seasons, or Hajj after five years period regulated by Hajj facilitators.</td>
<td>3.1</td>
<td>2.7</td>
</tr>
</tbody>
</table>

### 3.4.2 Round Two Survey

The second-round survey included 45 items and aimed to collect previous round selected dimensions questions modified from original SERVQUAL model services perception part and HAJQUAL.
model questions. The round return rate was 100% (15 experts) and showed 88.89 % success.

Conversely, dimensions’ clarity showed 95.55 % success rate and 4.44 % rejection rate. As stated in the previous round, the dimensions mean score lower than 4 in applicability will be removed or replaced and clarity means lower than 4 will be revised in addition to the insights from the experts will be considered in third round alterations.

The quantitative scores illustrated five questions with means less than four, three in the digitalization dimension and the two in the intention to extend visit to heritage sites dimension. In the digitalization dimension three out of four questions scored lower than four and debated by multiple notes by the experts. They pointed out that the digitalization questions address technical quality of the information technologies services provided and should be replaced by a question in each dimension instead of being a stand-alone dimension. Considering this comment in addition to the digitalization applicability and clarity scores, the dimension has been eliminated and incorporated in the instrument as a question in each dimension. The third goal of DARP a Vision 2030 program is to promote the visits to heritage sites and the two questions meant to measure (pilgrims’ intentions) need to be revised and replaced. Table 5 represents the scores means for round two. Furthermore, the notes collected from the open-end notes and calls with the participating experts briefly listed below:

1. Tangible original dimension questions are stuffed and attempt to gather multiple evaluation ideas in a single question.
2. Consider digitalization as service availability and quality instead of technical content quality.
3. Digitalization should be as a constant question(subdimension) in every dimension not as a sole dimension.
4. Responsiveness and empathy original dimension questions showed similarity.
5. Rites’ facilities could be expanded to Hajj facilities to include ports of entry and departure as an essential part of the journey.

6. Amend redundancy in empathy and responsiveness questions.

7. A few questions need to be reworded with a clear and simple approach to reach all participants’ levels.

8. Reduce questions in areas with good scores in literature and focus the efforts on questions or dimensions that showed lower scores in previous research in literature.

9. An optional open-ended question at the end of the questionnaire can capture insightful comments which can be added to the results.

Table 5: Delphi Approach Round Two Experts’ Means

<table>
<thead>
<tr>
<th>Hajj SQ Dimension</th>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original dimensions</td>
<td>Level (Low) 1</td>
<td>Level (Low) 1 to 5 (High)</td>
<td>do not know</td>
</tr>
<tr>
<td>(SERVQUAL and from SLR)</td>
<td></td>
<td></td>
<td>(do not know)</td>
<td>5 (High)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 (do not know)</td>
<td></td>
</tr>
</tbody>
</table>

Independent Factors

<table>
<thead>
<tr>
<th>Hospitality</th>
<th>Services provided</th>
<th>1.Hajj hospitality providers have</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>to pilgrims</td>
<td>modern</td>
</tr>
<tr>
<td></td>
<td>including</td>
<td>equipment,</td>
</tr>
<tr>
<td></td>
<td>accommodations,</td>
<td>visually appealing</td>
</tr>
<tr>
<td></td>
<td>food services,</td>
<td>facilities,</td>
</tr>
<tr>
<td></td>
<td>other amenities.</td>
<td></td>
</tr>
</tbody>
</table>

<p>| Tangibles | 4.33 | 4.53 |</p>
<table>
<thead>
<tr>
<th>Hajj SQ</th>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td></td>
<td>Original</td>
<td>Applicability</td>
<td>Clarity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dimensions</td>
<td>Level (Low) 1</td>
<td>Level</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(SERVQUAL and</td>
<td>to 5 (High) 0</td>
<td>(Low) 1 to</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>from SLR)</td>
<td>(do not know)</td>
<td>5 (High)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 (do not know)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

professionally dressed staff,
sufficient information means (screens, signs, and materials), and provide clean and good services.

2. Hajj hospitality **Reliability** 5.00 5.00
providers provide services promptly as promised with sincere interest in solving the matter from the first time with no error.

3. Hajj hospitality **Responsiveness** 5.00 4.53
providers tell when
<table>
<thead>
<tr>
<th>Hajj SQ</th>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>Original dimensions</td>
<td>Applicability</td>
<td>Level (Low) 1</td>
<td>Level (Low) 1 to 5 (High) 0</td>
</tr>
<tr>
<td>SERVQUAL and from SLR</td>
<td>(do not know)</td>
<td>5 (High)</td>
<td>0 (do not know)</td>
<td></td>
</tr>
</tbody>
</table>

4. Hajj hospitality providers continuously willing to help pilgrims, respond to requests, and instill confidence in pilgrims.

4. Empathy 4.67 4.53

5. Hajj hospitality Assurance 4.47 5.00

providers understand pilgrim’s needs, have the
<table>
<thead>
<tr>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hajj SQ Dimension</strong></td>
<td>Original dimensions</td>
<td>Applicability Level</td>
<td>Clarity Level</td>
</tr>
<tr>
<td>(SERVQUAL and from SLR)</td>
<td>(Low) 1 to 5 (High)</td>
<td>(do not know) 0 to 5 (High)</td>
<td>0 (do not know)</td>
</tr>
</tbody>
</table>

knowledge to answer their questions, give individual attention, and have the pilgrim’s interest in mind with convenient hours of operations available.

6. Hajj hospitality accommodation capacity is sufficient during the pilgrimage journey.

<p>| Remarks/ suggestions related to Hospitality variable: | |
| --- | --- | --- | --- | --- |
| <strong>Capacity</strong> | 5.00 | 5.00 | |</p>
<table>
<thead>
<tr>
<th>Hajj SQ</th>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td></td>
<td>Original</td>
<td>Applicability</td>
<td>Clarity</td>
<td>dimensions</td>
</tr>
<tr>
<td><strong>Guidance</strong></td>
<td>All guidance</td>
<td>7.Hajj guides have modern equipment, visually appealing facilities, professionally dressed staff, and provide information screens, signs, and materials.</td>
<td><strong>Tangibles</strong></td>
<td>4.47</td>
<td>4.47</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8. Hajj guides provide services promptly as promised with sincere interest in solving the matter.</td>
<td><strong>Reliability</strong></td>
<td>5.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Dimension</td>
<td>Concept Definition</td>
<td>Questions</td>
<td>Questions</td>
<td>Questions</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Original</td>
<td>Applicability</td>
<td>Clarity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dimensions</td>
<td>Level (Low) 1</td>
<td>Level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(SERVQUAL and</td>
<td>(do not know)</td>
<td>5 (High)</td>
<td>0 (do not</td>
<td></td>
</tr>
<tr>
<td></td>
<td>from SLR)</td>
<td></td>
<td></td>
<td>know)</td>
<td></td>
</tr>
</tbody>
</table>

from the first time
with no error.

9. Hajj guides tell **Responsiveness** 5.00 4.73
when the service
will be performed
promptly with
personal attention
to the pilgrims.

10. Hajj guides **Empathy** 5.00 4.60
continuously
willing to help
pilgrims, respond
to requests, and
instill confidence in
pilgrims.

11. Hajj guides **Assurance** 4.47 4.60
understand
pilgrim’s needs,
### Hajj SQ Dimension

<table>
<thead>
<tr>
<th>Concept Definition</th>
<th>Questions</th>
<th>Original dimensions (SERVQUAL and from SLR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicability</td>
<td>Level (Low) 1</td>
<td>Level (Low) 1 to 5 (High) 0 (do not know)</td>
</tr>
<tr>
<td>Clarity</td>
<td>Level (Low) 1 to 5 (High) 0 (do not know)</td>
<td></td>
</tr>
</tbody>
</table>

- Have the knowledge to answer their questions, give individual attention, and have the pilgrim’s interest in mind with ease of contact and convenient hours of operations available.

#### Remarks/ Suggestions related to Guidance variable:

<table>
<thead>
<tr>
<th>Transportation</th>
<th>Various</th>
<th>12. Hajj</th>
<th><strong>Tangibles</strong></th>
<th>4.47</th>
<th>4.33</th>
</tr>
</thead>
<tbody>
<tr>
<td>transportation</td>
<td>transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>means used to move from ports</td>
<td>have modern equipment,</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>Concept Definition</td>
<td>Questions</td>
<td>Questions</td>
<td>Questions</td>
<td>Questions</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Original</td>
<td>Applicability</td>
<td>Clarity</td>
<td>Level (Low) 1</td>
<td>Level (Low) 1</td>
<td>(do not know)</td>
</tr>
<tr>
<td>dimensions</td>
<td>(SERVQUAL and from SLR)</td>
<td>to 5 (High) 0</td>
<td>5 (High)</td>
<td>0 (do not know)</td>
<td></td>
</tr>
</tbody>
</table>

- of entry and perform rituals including trains, buses, taxis or private cars, and monorails.
- visually appealing facilities, professionally dressed staff, and provide helpful information screens, signs, and materials.

13. Hajj Transportation provide services promptly as promised with sincere interest in solving the matter from the first time with no error.

<p>| Reliability | 4.93 | 5.00 |</p>
<table>
<thead>
<tr>
<th>Hajj SQ</th>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>Original dimensions (SERVQUAL and from SLR)</td>
<td>Applicability</td>
<td>Clarity</td>
<td>Level (Low) 1</td>
<td>Level to 5 (High) 0 (do not know)</td>
<td>Level 0 (do not know)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(Low) 1 to 5 (High)</td>
<td></td>
</tr>
</tbody>
</table>

14. Hajj Transportation staff tell when the service will be performed promptly with personal attention to the pilgrims.

| Responsiveness | 4.87 | 4.60 |

15. Hajj Transportation staff continuously willing to help pilgrims, respond to requests, and instill confidence in pilgrims.

| Empathy | 4.87 | 4.67 |

16. Hajj Transportation
<table>
<thead>
<tr>
<th>Hajj SQ Dimension</th>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original dimensions</td>
<td>Applicability</td>
<td>Level</td>
<td>Clarity</td>
<td>Level</td>
</tr>
<tr>
<td>(SERVQUAL and from SLR)</td>
<td>to 5 (High) 0 (Low) 1 to 0 (do not know)</td>
<td>5 (High) 0 (do not know)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Staff understand pilgrim’s needs, have the knowledge to answer their questions, give individual attention, and have the pilgrim’s interest in mind with ease of contact and convenient hours of operations available.

17. Hajj **Tangibles** 4.47 5.00

- Transportation stations and
<table>
<thead>
<tr>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hajj SQ Dimension</td>
<td>Original</td>
<td>Applicability</td>
<td>Clarity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>dimensions</td>
<td>Level (Low) 1</td>
<td>Level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(SERVQUAL and</td>
<td>to 5 (High) 0</td>
<td>(Low) 1 to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>from SLR)</td>
<td>(do not know)</td>
<td>5 (High)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 (do not know)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

vehicles capacity
are sufficient
during the
pilgrimage journey.

Remarks/ suggestions related to Transportation variable:

<table>
<thead>
<tr>
<th>Rites Facilities</th>
<th>The main Hajj infrastructure facilities including Sanctuary in Makkah (Grand Mosque), Mina camps and Jamrat bridge, Arafat camps, and Muzdalifa rest station.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18. Hajj rites facilities have modern equipment, visually appealing and clean facilities, professionally dressed staff, and provide helpful information screens and signs.</td>
</tr>
<tr>
<td></td>
<td><strong>Reliability</strong> 4.73 4.33</td>
</tr>
</tbody>
</table>

|                  | 19. Hajj rites facilities provide Accessibility 4.93 5.00 |

79
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Original</td>
<td>Applicability</td>
<td>Clarity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dimensions</td>
<td>Level (Low)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(SERVQUAL and</td>
<td>to 5 (High)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>from SLR)</td>
<td>(do not know)</td>
<td>5 (High)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 (do not know)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- services promptly as promised with sincere interest in solving the matter from the first time with no error.

<table>
<thead>
<tr>
<th>20. Grand Mosque (Haram)</th>
<th><strong>Accessibility</strong></th>
<th>4.93</th>
<th>5.00</th>
</tr>
</thead>
</table>

- accessible with ease from accommodation.

<table>
<thead>
<tr>
<th>21. Jamarat Bridge</th>
<th><strong>Accessibility</strong></th>
<th>4.93</th>
<th>5.00</th>
</tr>
</thead>
</table>

- are accessible from accommodation in Mina.

<table>
<thead>
<tr>
<th>22. Restrooms around Grand Mosque</th>
<th><strong>Accessibility</strong></th>
<th>4.93</th>
<th>5.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haji SQ Dimension</td>
<td>Concept Definition</td>
<td>Questions</td>
<td>Questions</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------------------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td></td>
<td>Original dimensions</td>
<td>Level (Low) 1</td>
<td>Applicability</td>
</tr>
<tr>
<td>SERVQUAL and from SLR</td>
<td>Accessibility 4.93 5.00</td>
<td>23. Restrooms are accessible from accommodation and constantly clean in Mina.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accessibility 4.87 5.00</td>
<td>24. Restrooms are accessible from accommodation and constantly clean in Arfat.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Accessibility 4.20 5.00</td>
<td>25. Restrooms are accessible from accommodation and constantly clean in Arfat.</td>
<td></td>
</tr>
</tbody>
</table>
### Remarks/ suggestions related to Rites Facilities variable:

**Digitalization** Including all digital portals, applications, and devices to ease Hajj services from Visa issuing to monitoring bracelets, applications, or devices offered in Hajj pilgrimage.

| **26. Hajj digitalized** services including application easy to find what is needed and get anywhere on the service, have fast transactions, well organized content, and simple to use. |
| **Efficiency** | 3.93 | 4.33 |

<p>| <strong>27. Hajj digitalized</strong> services is continuously available, launches and runs directly, |
| <strong>System availability</strong> | 3.93 | 5.00 |</p>
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original</td>
<td>Applicability</td>
<td>Level (Low) 1</td>
<td>Clarity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>dimensions</td>
<td></td>
<td>(Low) 1 to (High) 0</td>
<td>Level</td>
<td></td>
</tr>
<tr>
<td>(SERVQUAL and from SLR)</td>
<td></td>
<td>(do not know)</td>
<td>5 (High)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dose not crash,</td>
<td></td>
<td>0 (do not know)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>and dose not</td>
<td></td>
<td>know)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>freeze in</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>operation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 28. Hajj digitalized services deliver orders and information efficiently and quickly. | Fulfilment | 4.00 | 5.00 |

| 29. Hajj digitalized services protects my personal information, secure, and does not share my information. | Privacy | 3.87 | 5.00 |

Remarks/ suggestions related to Digitalization variable:
### Concept Definition

<table>
<thead>
<tr>
<th>Group</th>
<th>Dimension</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original</td>
<td>Applicability</td>
<td>Clarity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>dimensions</td>
<td>Level (Low) 1</td>
<td>Level</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(SERVQUAL and</td>
<td>to 5 (High) 0</td>
<td>(do not know)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>from SLR)</td>
<td>(Low) 1 to 5 (High)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(do not know)</td>
<td>0 (do not know)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Safety & Security

<table>
<thead>
<tr>
<th>Group</th>
<th>Related crowd</th>
<th>30. Hajj safety and security have modern equipment, visually appealing facilities, professionally dressed staff, and provide information screens, signs, and materials.</th>
<th>31. Hajj safety and security provide services promptly as promised with sincere interest in solving the matter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.93</td>
<td>4.60</td>
<td>4.80</td>
</tr>
<tr>
<td>Dimension</td>
<td>Concept Definition</td>
<td>Questions</td>
<td>Questions</td>
</tr>
<tr>
<td>-----------------</td>
<td>--------------------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Hajj SQ</td>
<td></td>
<td>Original</td>
<td>Applicability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dimensions</td>
<td>Level (Low) 1</td>
</tr>
<tr>
<td></td>
<td>(SERVQUAL and from SLR)</td>
<td>to 5 (High) 0</td>
<td>(Low) 1 to (do not know)</td>
</tr>
<tr>
<td></td>
<td>from the first time with no error.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Hajj safety and security tell when the service will be performed promptly with personal attention to the pilgrims.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. Hajj safety and security continuously willing to help pilgrims, respond to requests, and instill confidence in pilgrims.</td>
<td>Responsiveness</td>
<td>5.00</td>
<td>4.53</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
<td>4.33</td>
<td>5.00</td>
</tr>
<tr>
<td>Concept Definition</td>
<td>Questions</td>
<td>Original dimensions</td>
<td>Applicability</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------</td>
<td>---------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Hajj SQ Dimension</td>
<td>Questions</td>
<td>(SERVQUAL and from SLR)</td>
<td>Assurance</td>
</tr>
</tbody>
</table>

34. Hajj safety and security understand pilgrim’s needs, have the knowledge to answer their questions, give individual attention, and have the pilgrim’s interest in mind with ease of contact and convenient hours of operations available.
<table>
<thead>
<tr>
<th>Hajj SQ Dimension</th>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Original</td>
<td>Applicability</td>
<td>Clarity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>dimensions</td>
<td>Level (Low) 1</td>
<td>Level</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(SERVQUAL and</td>
<td>to 5 (High) 0</td>
<td>(Low) 1 to</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>from SLR)</td>
<td>(do not know)</td>
<td>5 (High)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0 (do not know)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

35. Pilgrims feel secure when interacting with safety and security personnel and while performing their pilgrimage.

Remarks/ suggestions related to Safety & Security variable:

<table>
<thead>
<tr>
<th>Healthcare</th>
<th>All health measures and units are provided from the point of entry and through the pilgrimage activities.</th>
<th>Security</th>
<th>4.40</th>
<th>5.00</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>36. Hajj healthcare have modern equipment, visually appealing facilities, professionally dressed staff, and provide information</td>
<td>Tangibles</td>
<td>5.00</td>
<td>4.33</td>
</tr>
<tr>
<td>Hajj SQ Dimension</td>
<td>Concept Definition</td>
<td>Questions</td>
<td>Questions Dimensions</td>
<td>Questions Clarity</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------</td>
<td>-----------</td>
<td>----------------------</td>
<td>------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Original</td>
<td>Applicability</td>
<td>Level</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SERVQUAL and from SLR</td>
<td></td>
<td>do not know</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

screens, signs, and materials.

37. Hajj health care provide services promptly as promised with sincere interest in solving the matter from the first time with no error.

<table>
<thead>
<tr>
<th>38. Hajj health care</th>
<th>Reliability</th>
<th>5.00</th>
<th>4.47</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Responsibilities</td>
<td>5.00</td>
<td>4.40</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Concept Definition</td>
<td>Questions</td>
<td>Questions</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td></td>
<td>Original dimensions</td>
<td>Applicability</td>
<td>Clarity</td>
</tr>
<tr>
<td></td>
<td>(SERVQUAL and from SLR)</td>
<td>Level (Low) 1</td>
<td>Level</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(do not know)</td>
<td>5 (High)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Questions</th>
<th>Clarity</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>39. Hajj health care</td>
<td>Empathy</td>
<td>4.07</td>
<td>5.00</td>
</tr>
<tr>
<td>continuously willing to help pilgrims, respond to requests, and instill confidence in pilgrims.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. Hajj health care</td>
<td>Assurance</td>
<td>5.00</td>
<td>4.47</td>
</tr>
<tr>
<td>understand pilgrim’s needs, have the knowledge to answer their questions, give individual attention, and have the pilgrim’s interest in mind</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hajj SQ Dimension</td>
<td>Concept Definition</td>
<td>Questions</td>
<td>Questions</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Original</td>
<td>Applicability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dimensions</td>
<td>Level (Low) 1</td>
</tr>
<tr>
<td>(SERVQUAL and from SLR)</td>
<td>to 5 (High) 0</td>
<td>(do not know)</td>
<td>5 (High)</td>
</tr>
</tbody>
</table>

with ease of contact and convenient hours of operations available.

Remarks/ suggestions related to healthcare variable:

Dependent Factors

<table>
<thead>
<tr>
<th>Pilgrims Satisfaction</th>
<th>The overall satisfaction of the Hajj experience from the perceived services from arrival to departure.</th>
<th>41.I am satisfied from the Hajj overall experience and the services provided.</th>
<th>42. I am satisfied with the selected package and the services provided deserve the paid cost.</th>
<th>-</th>
<th>5.00</th>
<th>5.00</th>
</tr>
</thead>
</table>

5.00 | 4.80 |
<table>
<thead>
<tr>
<th>Hajj SQ</th>
<th>Concept Definition</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>Original dimensions</td>
<td>Applicability</td>
<td>Clarity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(SERVQUAL and from SLR)</td>
<td>Level (Low) 1 to 5 (High) 0</td>
<td>(do not know) 0 (do not know)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

43. The selected package is priced for the provided services.  

<table>
<thead>
<tr>
<th>Intention to extend visits to heritage sites</th>
<th>The intention to extend the visit in other heritage sites in Saudi Arabia related to Islamic history.</th>
<th>44. With proper arrangement for extended visit after Hajj to Islamic heritage sites in Makkah or Medina and related events it will be highly anticipated.</th>
</tr>
</thead>
<tbody>
<tr>
<td>43.</td>
<td>-</td>
<td>4.87</td>
</tr>
</tbody>
</table>

45. If I am in Kingdom of Saudi Arabia, I would like to discover or visit other areas prior
3.4.3 Round Three Survey

The third-round survey included 68 items after attending to the previous round comments and expanding stuffed questions to cure a specific query. The round return rate was 100% (15 experts) and showed 100% successfulness in applicability and clarity which reflect experts’ consensus on the initial Likert scale questions of the instrument. There are few comments from the participants altered in the instrument illustrated below in Table 6. One of the major comments was concerned with the willingness to extend the Hajj visit to heritage sites question to be an additional question instead of acting as a dependent variable. Moreover, the independent variables measure perceived service quality and should be related to overall satisfaction variable as dependent variable only and willingness to extend visit shouldn’t be affected by the independent variables. With that been said, the willingness to extend visit variable will be an additional question which will be analyzed separately since it is one of DARP objectives. Another comment suggested that hygiene original dimension should be a tangible original dimension with a possible note. In the results hygiene was changed to tangible with an additional description.
Table 6: Delphi Approach Round Three Experts’ Means

<table>
<thead>
<tr>
<th>Hajj Service Quality Dimension</th>
<th>Questions</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Original</strong></td>
<td><strong>Applicability</strong></td>
</tr>
<tr>
<td><strong>Hajj</strong></td>
<td></td>
<td>experts</td>
</tr>
<tr>
<td><strong>Hospitality</strong></td>
<td></td>
<td>mean</td>
</tr>
<tr>
<td><strong>Questions</strong></td>
<td></td>
<td>score</td>
</tr>
</tbody>
</table>

**Independent Variables**

1. **Hospitality**

1. Hajj hospitality providers have modern equipment and visually appealing facilities.
   - Tangible
   - es: 5

2. Hajj hospitality providers have professionally dressed staff.
   - Tangible
   - es: 5

3. Hajj hospitality providers have sufficient information means (screens, signs, and materials).
   - Tangible
   - es: 5

4. Hajj hospitality providers provide clean, healthy, and comfortable services as promised.
   - Tangible
   - es: 5

5. Hajj hospitality providers understand pilgrims’ needs and have the knowledge to answer their questions.
   - Assurance
   - ce: 5
6. Hajj hospitality providers are continuously courteous to pilgrims, instill confidence in pilgrims, and let them feel safe.

7. Hajj hospitality providers provide services promptly with sincere interest in solving the matter from the first time as promised.

8. Hajj hospitality providers tell when the service will be performed promptly with personal attention to help the pilgrims and never busy to respond to requests.

9. Hajj hospitality providers give individual attention and have the pilgrims’ interest in mind with convenient hours of operations available.

10. Hajj hospitality is offered using sufficient digital services (e.g., mobile application and digital bracelet).

11. Hajj guides have modern equipment and visually appealing facilities.

12. Hajj guides have professionally dressed staff.

13. Hajj guides have sufficient information means (screens, signs, and materials).

14. Hajj guides provide helpful services as needed.

2. Guidance

All guidance services offered in Hajj journey including regulatory instructions, religious consultation, rituals guidance, and other information inquiries.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Hajj guides are easy to contact, understand pilgrims’ needs, and have the knowledge to answer their questions.</td>
<td>Assuran 5 5</td>
</tr>
<tr>
<td>16. Hajj guides are continuously courteous to pilgrims, instill confidence in pilgrims, and let them feel safe.</td>
<td>Assuran 5 5</td>
</tr>
<tr>
<td>17. Hajj guides provide services promptly with sincere interest in solving the matter from the first time.</td>
<td>Reliability 5 5</td>
</tr>
<tr>
<td>18. Hajj guides tell when the service will be performed promptly with personal attention to help the pilgrims and never busy to respond to requests.</td>
<td>Responsibility 5 5</td>
</tr>
<tr>
<td>19. Hajj guides give individual attention and have the pilgrims’ interest in mind with convenient hours of operations available.</td>
<td>Empathy 5 5</td>
</tr>
<tr>
<td>20. Hajj guidance is offered using sufficient digital services (e.g., mobile application and digital bracelet).</td>
<td>Digitalization 5 5</td>
</tr>
<tr>
<td><strong>3. Transportation</strong></td>
<td></td>
</tr>
<tr>
<td>21. Hajj transportation has modern equipment and visually appealing facilities.</td>
<td>Tangibility 5 5</td>
</tr>
<tr>
<td>Various transportation means used to move from ports of entry and perform</td>
<td></td>
</tr>
<tr>
<td>22. Hajj transportation has professionally dressed staff.</td>
<td>Tangibility 5 5</td>
</tr>
<tr>
<td>Rituals including trains, buses, and monorails.</td>
<td>23. Hajj transportation has sufficient information means (screens, signs, and materials).</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>24. Hajj transportation provides sufficient and comfortable services as promised.</td>
</tr>
<tr>
<td></td>
<td>25. Hajj transportation providers are easy to contact, understand pilgrims’ needs, and have the knowledge to answer their questions.</td>
</tr>
<tr>
<td></td>
<td>26. Hajj transportation are continuously courteous to pilgrims, instill confidence in pilgrims, and let them feel safe.</td>
</tr>
<tr>
<td></td>
<td>27. Hajj transportation provides services promptly with sincere interest in solving the matter from the first time as promised.</td>
</tr>
<tr>
<td></td>
<td>28. Hajj transportation tells when the service will be performed promptly with personal attention to help the pilgrims and never busy to respond to requests.</td>
</tr>
<tr>
<td></td>
<td>29. Hajj transportation give individual attention and have the pilgrims’ interest in mind with convenient hours of operations available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tangible</th>
<th>5</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Es</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Assurance</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Ce</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Reliability</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Sickness</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Empathy</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>30.</td>
<td>Hajj transportation is offered using sufficient digital services (e.g., mobile application and digital bracelet).</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td><strong>Hajj Facilities</strong></td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>Hajj facilities have modern equipment and visually appealing facilities.</td>
<td></td>
</tr>
<tr>
<td>32.</td>
<td>Hajj facilities have professionally dressed staff.</td>
<td></td>
</tr>
<tr>
<td>33.</td>
<td>Hajj facilities have sufficient information means (screens, signs, and materials).</td>
<td></td>
</tr>
<tr>
<td>34.</td>
<td>Hajj facilities are organized to ease performing various activities.</td>
<td></td>
</tr>
<tr>
<td>35.</td>
<td>Reception/farewelling port facilities are reasonably accessible.</td>
<td></td>
</tr>
<tr>
<td>36.</td>
<td>Reception/farewelling port facilities are regularly clean.</td>
<td></td>
</tr>
<tr>
<td>37.</td>
<td>Grand Mosque (Haram) facilities are reasonably accessible.</td>
<td></td>
</tr>
<tr>
<td>38.</td>
<td>Grand Mosque (Haram) facilities are regularly clean.</td>
<td></td>
</tr>
<tr>
<td>39.</td>
<td>Mina facilities are reasonably accessible.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>40. Mina facilities are regularly clean.</td>
<td><strong>Tangibles</strong> (Hygiene)</td>
<td>5</td>
</tr>
<tr>
<td>41. Muzdalifah facilities are reasonably accessible and clean.</td>
<td><strong>Accessibility</strong></td>
<td>5</td>
</tr>
<tr>
<td>42. Muzdalifah facilities are regularly clean.</td>
<td><strong>Tangibles</strong> (Hygiene)</td>
<td>5</td>
</tr>
<tr>
<td>43. Arafat facilities are reasonably accessible.</td>
<td><strong>Accessibility</strong></td>
<td>5</td>
</tr>
<tr>
<td>44. Arafat facilities are regularly clean.</td>
<td><strong>Tangibles</strong> (Hygiene)</td>
<td>5</td>
</tr>
<tr>
<td>45. Hajj facilities are run using sufficient digital services (e.g., mobile application and digital bracelet).</td>
<td><strong>Digitalization</strong></td>
<td>5</td>
</tr>
</tbody>
</table>

5. **Safety & Security**  

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>46. Hajj Safety &amp; Security have modern equipment and visually appealing facilities.</td>
<td><strong>Tangibles</strong></td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>47. Hajj Safety &amp; Security have professionally dressed staff.</td>
<td><strong>Tangibles</strong></td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

*Crowd management services include all staff and systems of cohorts portioning and*
| **flowing through Hajj various rites sites and facilities.** | 48. Hajj Safety & Security have sufficient information means (screens, signs, and materials). | Tangible 5 5 |
| | 49. Hajj Safety & Security are organized to safely manage crowds in Hajj as expected. | Tangible 5 5 |
| | 50. Hajj Safety & Security staff are easy to contact, understand pilgrims’ needs, and have the knowledge to answer their questions. | Assurance 5 5 |
| | 51. Hajj Safety & Security staff are continuously courteous to pilgrims, instill confidence in pilgrims, and let them feel safe. | Assurance 5 5 |
| | 52. Hajj Safety & Security provides services promptly with sincere interest in solving the matter from the first time. | Reliability 5 5 |
| | 53. Hajj Safety & Security tells when the service will be performed promptly with personal attention to help the pilgrims and never busy to respond to requests. | Responsiveness |
| | 54. Hajj Safety & Security give individual attention and have the pilgrims’ interest in mind with convenient hours of operations available. | Empathy 5 5 |
55. Hajj Safety & Security services are offered using sufficient digital services (e.g., mobile application and digital bracelet).

<table>
<thead>
<tr>
<th>6. Healthcare</th>
</tr>
</thead>
<tbody>
<tr>
<td>56. Hajj Healthcare have modern equipment and visually appealing facilities.</td>
</tr>
<tr>
<td>57. Hajj Healthcare have professionally dressed staff.</td>
</tr>
<tr>
<td>58. Hajj Healthcare have sufficient information means (screens, signs, and materials).</td>
</tr>
<tr>
<td>59. Hajj Healthcare providers are organized to treat any health emergencies in Hajj as expected.</td>
</tr>
<tr>
<td>60. Hajj Healthcare staff are easy to contact, understand pilgrims’ needs, and have the knowledge to answer their questions.</td>
</tr>
<tr>
<td>61. Hajj Healthcare staff are continuously courteous to pilgrims, instill confidence in pilgrims, and let them feel safe.</td>
</tr>
<tr>
<td>62. Hajj Healthcare provides services promptly with sincere interest in solving the matter from the first time.</td>
</tr>
<tr>
<td>63. Hajj Healthcare tells when the service will be performed promptly with personal responsiveness</td>
</tr>
</tbody>
</table>
attention to help the pilgrims and never busy
to respond to requests.

64. Hajj Healthcare providers give individual
attention and have the pilgrims’ interest in
mind with convenient hours of operations
available.

65. Hajj Healthcare is offered using sufficient
digital services (e.g., mobile application and
digital bracelet).

Dependent Variables

7. Pilgrims’ Satisfaction

66. I am satisfied with the overall Hajj
department and the services provided.

8. Willingness to extend visits to Islamic
heritage sites

67. I am willing to participate in extended
visits programs associated with Hajj
experience to heritage sites or related
events.

Demographic Questions

Additional Questions
3.5 Proposed Conceptual Framework

Following the outcomes of the experts’ study, the six Hajj service quality dimensions will serve as independent variables to measure the service quality performance score. The dependent variable in this study’s conceptual framework will be the pilgrims’ overall satisfaction and willingness to extend the visit that comply to DARP third objective. The developed instrument will consist of three parts which are demographic questions, the six Hajj service quality dimensions’ Likert scale questions, the overall satisfaction question, and the willingness to extend the visit question. The conceptual framework shown in Figure 10 illustrates the process that will direct the study. It will include all dimensions, variables, and relations of service quality in Hajj in compliance with Vision 2030 DARP program. Aspects related to the study population, sampling technique, data collection plan, and analysis method will be illustrated in the following subsections.

Figure 10: Research Conceptual Framework
3.5.1 Study population and Sampling Technique

To eliminate the effect of cultural related differences on the perception level of the quality of the offered Hajj related services, the population in this study is the American Hajj participants with an official quota of around 9,000 seats which has been extended to reach more than 14,000 in some previous seasons. The previous seasons, 2020 and 2021, had significant Hajj participants’ reduction due to the pandemic and it is expected to be gradually restored to the official quota in the upcoming seasons. Both seasons allowed domestic pilgrims from various countries with 1,000 and 58,745 pilgrims respectively (GASTAT, 2021). Season 2022 returned first post-pandemic season to shape 926,062 pilgrims 11.6% from Americas, Europe, and Australia according to Saudi General Authority of Statistics annual report (GASTAT, 2022). Number of pilgrims participated from the United States was not officially reported and with around 9,000 quotas offered through Ministry of Hajj and Umrah “Motawif” portal for under 65 years pilgrims, COVID-19 vaccinated, and with recent negative Polymerase Chain Reaction (PCR) test for COVID-19.

Considering the 9,000 population with 95% confidence level and 5% margin of error the required sample size will be 312. Moreover, to reach this target, while considering a 50% response rate, there should be 738 participation invitations sent. Those figures will be addressed accordingly based on the research response rate from participants in 2020, 2021, and 2022 Hajj seasons.

Data collection is critical in research, as the data is supposed to provide a better understanding of a research framework. It then becomes essential to choose the technique of getting data and who to participate in to better serve the research context. In this study a purposive sampling (judgement sampling) will serve effectively, where deliberate choice of participants will be based on their knowledge or experience. This nonrandom technique aids the researcher to select what participants are needed in
the sample set to share information about their experience (Tongco, 2007). One more sampling technique might be utilized, if needed, is snowball sampling. In this recruitment sampling technique participants assist researcher to specify other potential participants to recruit (Handcock & Gile, 2011).

3.5.2 Data Collection Plan

The research instrument will consist of a total of 83 items consist of 9 demographic questions, 73 HSQ dimensions Likert scale questions, and one additional question to enrich the pilgrimage experience. Ranging from Strongly Disagree to Strongly Agree, 5-point Likert scale questions a psychometric response approach allows participants to reveal their level of agreement. According to Pimentel (2010) the Likert scale will follow the scale ranges:

- **1-1.8**: Strongly disagree
- **1.81-2.60**: Disagree
- **2.61-3.40**: Neutral
- **3.41-4.20**: Agree
- **4.21-5**: Strongly agree

will dominate the questionnaire except the demographics and one optional open-ended question for any additional comments. The instrument’s validity and reliability will be tested in data analysis phase for internal consistency of the instrument. The UCF Qualtrics platform will be used to gather questionnaire data with a distribution tool that tracks completion and individualized reminders to start or complete the questionnaire accordingly. In addition, Qualtrics tools can assist on basic data analysis, and participation links will be sent by email and other social networks accounts through the designated Hajj agencies or arranging organizations. The targeted seasons in this study have a direct registration process through Ministry of Hajj and Umrah portal with no mediation from registered Hajj travel agencies in the US. The data collection plan will target Hajj agencies and related organizations in
various states like California, Florida, Georgia, Illinois, Michigan, Minnesota, Maryland, New York, Ohio, Texas, and Virginia to distribute the research questionnaire with initial communication with agencies and organizations there. Although the pilgrims are self-registered still the agencies and organization like mosques and social Islamic centers are visible gateways to reach pilgrims.

### 3.6 Data Analysis using Structural Equation Modeling

Structural Equation Modeling (SEM) or originally known as Linear Structural Relationships (LISREL) is an empirical research method initiated from sociology and psychology sciences and recently common practice in all disciplines. The SEM is a model testing and data analysis approach that deals with complex multivariate statistics combining the two statistical techniques of factor analysis and path analysis using a covariance matrix. Moreover, the approach is used to test the research hypothesis between the dependent variable (manifest variable) and independent variable (latent variable), and between the independent variables in the theoretical research framework. It is considered as an advanced statistical technique that harnesses related linear equation system by path diagram and causation pattern to assess research proposed theory. Accordingly, SEM can substitute various statistical techniques including factor, covariance, path, and multiple regression analyses. Thus, a model factors structure and consistency with data can be initially investigated followed by the significance of the factors' relationships and effects simultaneously by the same tool. Additional advantages include the multivariate complex relations handling, errors flexibility, and suitability of small samples application made SEM a robust tool for research analysis with growing adaptation among scholars (Zhang, 2022).

#### 3.6.1 SEM Techniques

SEM functions fall under two techniques component-based SEM, also known as PLS-SEM and covariance-based SEM (CBSEM). The component-based SEM denoted by Partial Least Square (PLS) uses
the score calculation to estimate the structural equation. It is considered a partial information method of two steps: variables scores using the PLS algorithms and Ordinary Least Squares (OLS) regression between the variables for calculating the structural equations. PLS-SEM can be considered a broad view of principal component analysis to multiple data matrices attached by causal links and tolerate limited samples. On the other hand, the CBSEM is basically a full information covariance generalization of path modeling, factor analysis, and principal component analysis that validates a model by causal links and acquires a large sample of two hundred or more preferably (Tenenhaus, 2008).

### 3.6.2 PLS-SEM

There are two arrays of linear equations that define PLS-SEM the inner model and the outer model. The outer model is known also as the measurement model that identifies the relationships between the unobserved variables (latent) and the observed variables (manifest) in a model. The observed variable cannot be measured directly and relies on the rectangle shaped indicators known as the observed variables each can be data gathered from a research instrument item. Latent variables represented by oval or circular shape can have an explanatory nature where arrows come out of it and are referred to as exogenous variable or resolutory nature referred to endogenous variable. The inner model or the structural model explain the causal relationships between the latent variables. Some latent variables act as independent variables when exogenous and some others act as dependent variables when endogenous. On other words, the cause variables are independent, and the result variables are dependent.

Figure 11 illustrates the PLS-SEM outer and inner models and the related configurations of variables relationships represented by arrows where the arrow’s direction identifies the nature of a variable in a model. The measurement model and the structural model are combined to represent a PLS
path model with sequential observation. First is the measurement model inspecting the relationships between latent variables and observed variables and showing the validity and reliability of the PLS model. Second is the structural model that investigate the regressions between the latent variables in the PLS model (Henseler, Ringle, & Sarstedt, 2012).

Figure 11: PLS-SEM Models and Variables

3.6.3 PLS-SEM Consideration

There are various reasons why PLS-SEM is considered among researchers and shows growth in adaptation. One of the first reasons is the technique ability to function with limited requirements and yet with consistency in outcomes (Henseler, Ringle, & Sinkovics, 2009). The PLS algorithm permits the function of both the exogenous and the endogenous variables in one model simultaneously which makes the PLS-SEM convenient for exploratory research and theory testing (Gotz, Liehr-Gobbers, & Krafft, 2010).
Another reason for PLS adaptation is the ability to accommodate small size sample studies. According to Chin (1998) ten samples per variable is sufficient for PLS-SEM analysis. Joe F Hair, Ringle, and Sarstedt (2011) addressed the favorability of ten times sampling rule in PLS-SEM technique due to its simplicity. In addition, PLS-SEM can deal with skewed distribution data sample (Bagozzi & Heatherton, 1994). Finally, PLS-SEM is capable of handling complex models with multiple observed and unobserved variables with absence of calculation errors (Akter, Fosso Wamba, & Dewan, 2017). This study is exploratory in nature and with expected limited sample therefore the PLS-SEM is suitable candidate for data analysis.

### 3.6.4 Assessing the Measurement Model

The measurement model or the outer model specifies the relationships between the latent variables and their indicators through reliability and validity. To begin with, testing the internal consistency reliability should be the first step in model reliability. Each dimension represented by a latent variable with indicators and those indicators intercalation measured by Cronbach’s alpha value represents the internal consistency reliability. A value of 0.7 or above is accepted and below 0.6 shows lack of reliability. An additional measure for internal consistency is composite reliability (CR) and considered more consistent than Cronbach’s alpha among scholars. Another form of reliability in the measurement model is the indicator reliability where the correlation of each latent variable and its indicators are tested. Every indicator measurement is referred to as factor loading and should be 0.6 or above to be accepted (Henseler et al., 2009).

Behind the model’s reliability the measurement model two level validity take place with discriminant validity and convergent validity. Convergent validity checks how indicators unified to measure a certain latent variable via the gathered responses correlation. Fornell and Larcker (1981)
support using the Average Variance Extracted AVE to identify convergent validity at 0.5 or above as acceptable. Meaning that the latent variable can handle more than half of the indicators’ variance. The second level of validity is the discriminant validity that shows how each latent variable in an instrument is distinct from the other and not corresponding. This can be observed by ensuring that the variance between the latent variable and its indicators should be higher than the variance with other latent variables. Fornell and Larcker (1981) specify that the AVE of the latent variable is higher than the squared correlation with other latent variables then the discriminant validity is met (Gotz et al., 2010). Another way to assess discriminant validity is the heterotrait-monotrait (HTMT) ratio of correlations introduced by Henseler, Ringle, and Sarstedt (2015). The approach is based on multitrait and multimethod matrix and a 0.9 HTMT score indicates that the discriminant validity is established.

### 3.6.5 Assessing the Structural Model

The relationship between the research hypothesis dimensions is assessed by the structural model. Essentially, the coefficient of determination $R^2$ of the endogenous variables is used to assess the structural model. Determination coefficients indicate what percent of the latent variable is explained by the variable’s variance and therefore measures the regression equation fit against the indicators data. Joseph F Hair, Ringle, and Sarstedt (2013) suggested that the $R^2$ values 0.25, 0.5, and 0.7 considered weak, moderate, and strong respectively. Similarly, previous study by Chin (1998) inferred that 0.19, 0.33, and 0.67 as weak, moderate, and strong respectively. More openly, Falk and Miller considered 0.1 and above coefficient of determination $R^2$ value is the baseline for latent variable to be suitable (Falk & Miller, 1992).

Additional measures to assess the structural model are effect size $f^2$-squared and predictive relevance $Q^2$-squared. First, the effect size $f^2$-squared where all the direct and indirect effects of a certain
latent variable on others. In this measure the standardized inner path model coefficient decreases as the number of indirect effects increase, particularly when the latent variables have a significant impact on the main path. This will open a space for the total effects to represent the relations of the structural model. The increase in R-squared related to the endogenous variable variance is how f-squared figured. The scores represent the effects size f-squared are 0.02, 0.15, and 0.35 with small, medium, and large effects. Secondly, the ability to predict scaled by Stone Geisser’s q-squared that involves blindfolding technique. Only the reflective endogenous variables in the model can host the blindfolding technique and the value of q-squared should be larger than zero to show predictive relevance. The predictive relevance can be small, medium, or large relaying on the scores 0.02, 0.15, and 0.35 correspondingly (Gotz et al., 2010; Henseler et al., 2009).

3.7 Methodology Conclusion

To sum up, this study is sequential exploratory research that will apply a mixed methodology. The research instrument was constructed from a systematic literature review and mixed Delphi technique brief study with fifteen experts. Moreover, the survey will consist of three parts demographics, Likert scale, and open-ended question that reached 83 items. A face validity with three academics was conducted to inspect the constructs of the questionnaire and clarity before launching the survey. The survey distribution emails and links powered by UCF Qualtrics platform to reach various US states to collect data from the targeted sample size. After obtaining the data it will be purified and prepared using IBM Statistical Package for Social Sciences (SPSS) for analysis. The approach mostly suites the exploratory nature of the research that includes the utilization of Partial Least Square (PLS) structural equation modeling through smart PLS to assess the quality criteria (Factor loadings, Construct reliability, and construct validity) and substantiate the proposed hypothesis. Targeted sample size should be obtained to achieve meaningful models.
CHAPTER FOUR: DATA ANALYSIS AND FINDINGS

4.1 Introduction

An exhibit of collected data analysis using the research instrument and following the processes previously addressed in methodology chapter. Initially, the data purification and preparation will be discussed followed by the study sample data analysis. The analysis includes discussions about demographic profile of respondents, descriptive statistics, and structural equation modeling assessments and hypothesis testing for the study variables accordingly.

4.2 Data Purification and Preparation

The study survey was launched on Qualtrics platform after IRB approval in August 2022, and lasted for nine months to the end of May 2023. The study targeted US Hajj pilgrims as respondents who participated in one of Hajj seasons 2020, 2021, or 2022. The aim was to reach 312 as explained in the previous chapter or at least two hundred responses to extract meaningful results with reasonable statistical power as recommended by Parasuraman, et al (1988). The research instrument was distributed among Hajj tourism agencies, cultural centers, and mosques in different states as stated in chapter three. The results came from seventeen different states with sample size of 184 responses. The exclusions criteria are responses with less than 85% completion rate and less than five minutes completion time. According to Endres (2003) 15% to 20% missing data rate in quantitative research is common. The missing data imputation followed the most frequent value/mode technique to impute the missing values in the construct if missing. IBM SPSS Statistics 28 was employed for data preparation and the resulted sample after purification was 149 usable complete responses with 80.97% response rate from the collected data.
4.3 Descriptive Statistics

Descriptive statistics are utilized to summarize and present the collected data in a meaningful manner. This section provides a detailed analysis of the survey responses using statistical measures such as mean, standard deviation, skewness, and kurtoses. Descriptive statistics enable researchers to identify patterns, trends, and central tendencies within the data, providing a foundation for further analysis and interpretation. The data normality in this section is following the directions of George and Mallery (2010), where the values of skewness and kurtoses between -2 and +2 are considered acceptable and represent normal distribution.

4.3.1 Hospitality Dimension

The first dimension that the pilgrims in the study exposed to was hospitality. Hospitality measured both the accommodation and food services during their Hajj experience in general with no location specification to control the number of items in the research instrument. The purpose of this dimension is to realize the perception of service quality. To capture this realization descriptive statistics have been carried out to analyze the dimension. The descriptive statistics table for hospitality presents that the respondents are showing that their Hajj hospitality service providers have initiatives for improved services delivery to pilgrims. Item HOS2 has the highest mean of 3.99 followed by HOS1 with a mean of 3.87 and HOS4 with a mean of 3.85. The dimension overall mean score HOS Mean is 3.69 implying that the respondents are of the opinion that the Hajj hospitality providers have an agreeable service quality. It clearly shows that the Hajj hospitality providers are striving to deliver outstanding services. The hospitality dimension was also analyzed for skewness and kurtosis to see whether the data is normally distributed. The descriptive statistics show that all items were normally distributed items are as all the items are in the range of ±2. The descriptive statistics results are shown in table 7.
Table 7: Hospitality Dimension Representation

**Descriptive Statistics**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>HO1</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.87</td>
<td>1.048</td>
<td>-.848</td>
<td>.199</td>
</tr>
<tr>
<td>HO2</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.99</td>
<td>1.036</td>
<td>1.167</td>
<td>.199</td>
</tr>
<tr>
<td>HO3</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.80</td>
<td>1.174</td>
<td>-.896</td>
<td>.199</td>
</tr>
<tr>
<td>HO4</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.85</td>
<td>1.089</td>
<td>-.898</td>
<td>.199</td>
</tr>
<tr>
<td>HO5</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.63</td>
<td>1.111</td>
<td>-.965</td>
<td>.199</td>
</tr>
<tr>
<td>HO6</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.74</td>
<td>1.060</td>
<td>-1.025</td>
<td>.199</td>
</tr>
<tr>
<td>HO7</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.54</td>
<td>1.136</td>
<td>-.667</td>
<td>.199</td>
</tr>
<tr>
<td>HO8</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.54</td>
<td>1.088</td>
<td>-.719</td>
<td>.199</td>
</tr>
<tr>
<td>HO9</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.59</td>
<td>1.000</td>
<td>-.869</td>
<td>.199</td>
</tr>
<tr>
<td>HO10</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.32</td>
<td>1.141</td>
<td>-.300</td>
<td>.199</td>
</tr>
<tr>
<td>HO11</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.67</td>
<td>1.118</td>
<td>-.997</td>
<td>.199</td>
</tr>
<tr>
<td>HO Mean</td>
<td>149</td>
<td>1.00</td>
<td>5.00</td>
<td>3.686</td>
<td>.90887</td>
<td>-1.043</td>
<td>.199</td>
</tr>
</tbody>
</table>

Valid N (listwise) 149

**4.3.2 Guidance Dimension**

The second dimension in the study model is guidance. Guidance measures all guidance services offered in Hajj journey including regulatory instructions, religious consultation, rituals guidance, and other informative inquiries in general with no location specification to control the number of items in the
research instrument. The purpose of this dimension is to realize the perception of service quality in guidance services. To capture this realization descriptive statistics have been carried out to analyze the dimension. Descriptive statistics table for guidance presents that the respondents are showing that their Hajj guidance services have initiatives for improved services. Item GUI4 has the highest mean of 3.64 followed by GUI2 recording a mean of 3.51 and GUI3 & GUI5 recording the same mean of 3.43. The overall mean of the guidance dimension GUI mean 3.35 implies that the respondents are of the opinion that the Hajj guidance providers have moderate service quality within guidance. It clearly shows that the Hajj guidance providers have space for improvement to deliver outstanding services. Guidance dimension was also analyzed for skewness and kurtosis to see whether the data is normally distributed. The descriptive statistics show that all the items that were normally distributed items are as all the ten items are in the range of ±2. Guidance descriptive statistics results are shown in table 8.

Table 8: Guidance Dimension Representation

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>GUI1</td>
</tr>
<tr>
<td>GUI2</td>
</tr>
<tr>
<td>GUI3</td>
</tr>
<tr>
<td>GUI4</td>
</tr>
<tr>
<td>GUI5</td>
</tr>
<tr>
<td>GUI6</td>
</tr>
<tr>
<td>GUI7</td>
</tr>
</tbody>
</table>
4.3.3 Transportation Dimension

The third dimension is transportation services including coaches, Haramain train, Mashaer train, and all transportation means in Hajj journey. The perception of transportation service quality revealed that indicators TRANS2, TRANS1, and TRANS3 with scores 3.82, 3.72, and 3.55 recorded the highest means respectively. The TRANS mean score is of the value 3.35 indicating that the respondents are of the opinion that the Hajj transportation services have moderate service quality than other aspects of Hajj service quality. It clearly shows that the Hajj transportation providers are determined to deliver acceptable services. Transportation dimension was also analyzed for skewness and kurtosis to see whether the data is normally distributed. The descriptive statistics show that all items were normally distributed items are as all the items are in the range of ±2. Guidance descriptive statistics results are shown in table 9.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>GUI8</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.26</td>
<td>1.104</td>
<td>-.247</td>
<td>-.500</td>
</tr>
<tr>
<td>GUI9</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.20</td>
<td>1.065</td>
<td>-.344</td>
<td>-.364</td>
</tr>
<tr>
<td>GUI10</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.17</td>
<td>1.141</td>
<td>-.307</td>
<td>-.553</td>
</tr>
<tr>
<td>GUI11</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.29</td>
<td>1.117</td>
<td>-.385</td>
<td>-.284</td>
</tr>
<tr>
<td>GUI Mean</td>
<td>149</td>
<td>1.00</td>
<td>5.00</td>
<td>3.345</td>
<td>.95492</td>
<td>-.685</td>
<td>.199</td>
</tr>
</tbody>
</table>

Valid N 149 (listwise)
Table 9: Transportation Dimension Representation

**Descriptive Statistics**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Std. Error</td>
</tr>
<tr>
<td>TRANS1</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.73</td>
<td>1.044</td>
<td>-.814</td>
<td>.377</td>
</tr>
<tr>
<td>TRANS2</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.82</td>
<td>.966</td>
<td>-.768</td>
<td>.675</td>
</tr>
<tr>
<td>TRANS3</td>
<td>148</td>
<td>1</td>
<td>5</td>
<td>3.55</td>
<td>.950</td>
<td>-.785</td>
<td>.528</td>
</tr>
<tr>
<td>TRANS4</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.36</td>
<td>.910</td>
<td>-.512</td>
<td>.562</td>
</tr>
<tr>
<td>TRANS5</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.17</td>
<td>.978</td>
<td>-.182</td>
<td>.029</td>
</tr>
<tr>
<td>TRANS6</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.34</td>
<td>.963</td>
<td>-.259</td>
<td>.349</td>
</tr>
<tr>
<td>TRANS7</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.20</td>
<td>.972</td>
<td>-.147</td>
<td>.208</td>
</tr>
<tr>
<td>TRANS8</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.13</td>
<td>.991</td>
<td>-.147</td>
<td>.175</td>
</tr>
<tr>
<td>TRANS9</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.19</td>
<td>1.005</td>
<td>-.157</td>
<td>.054</td>
</tr>
<tr>
<td>TRANS10</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.14</td>
<td>1.059</td>
<td>-.113</td>
<td>-.221</td>
</tr>
<tr>
<td>TRANS11</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.20</td>
<td>1.000</td>
<td>-.045</td>
<td>-.083</td>
</tr>
<tr>
<td>TRANS</td>
<td>149</td>
<td>1.00</td>
<td>5.00</td>
<td>3.35</td>
<td>.82192</td>
<td>-.449</td>
<td>1.229</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

116
4.3.4 Healthcare Dimension

Among the Hajj service quality dimensions healthcare including all related services is the fourth and one of the most important dimensions due to the post pandemic global concerns. The healthcare service quality indicators HSER2, HSER4, HSER11, and HSER6 scored 3.97, 3.95, 3.95, and 3.92 in turn, which are slightly higher than previous Hajj service quality dimensions. The overall HSER Mean for the dimension scored 3.83, which is also the highest among all service quality dimensions indicating that the respondents are of the opinion that the Hajj healthcare services have agreeable level of service quality performance. Healthcare dimension was also analyzed for skewness and kurtosis to see whether the data is normally distributed. The descriptive statistics show that all items were normally distributed. All the items are in the range of ±2 as illustrated in table 10.

Table 10: Healthcare Dimension Representation

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Statistic</td>
<td>Std. Error</td>
</tr>
<tr>
<td>HSER1</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.86</td>
<td>.973</td>
<td>-.829</td>
<td>.738</td>
</tr>
<tr>
<td>HSER2</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.97</td>
<td>.969</td>
<td>-.973</td>
<td>1.070</td>
</tr>
<tr>
<td>HSER3</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.86</td>
<td>1.014</td>
<td>-.857</td>
<td>.641</td>
</tr>
<tr>
<td>HSER4</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.95</td>
<td>.992</td>
<td>-.776</td>
<td>.515</td>
</tr>
<tr>
<td>HSER5</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.88</td>
<td>1.019</td>
<td>-.763</td>
<td>.465</td>
</tr>
<tr>
<td>HSER6</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.92</td>
<td>1.030</td>
<td>-.852</td>
<td>.539</td>
</tr>
<tr>
<td>HSER7</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.76</td>
<td>.913</td>
<td>-.419</td>
<td>.419</td>
</tr>
<tr>
<td>HSER8</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.66</td>
<td>.934</td>
<td>-.439</td>
<td>.470</td>
</tr>
<tr>
<td>HSER9</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.74</td>
<td>.940</td>
<td>-.343</td>
<td>.136</td>
</tr>
</tbody>
</table>
4.3.5 Safety and Security Dimension

Another Hajj service quality dimension is safety and security. The fifth dimension among the six dimensions includes crowd management processes and systems. The records of this dimension indicators showed 3.90, 3.82, and 3.77 for SS4, SS5, and SS11 and with SS mean score of 3.73. Those records indicate that respondents received the safety and security services with acceptable representation and the safety and security services providers are striving to deliver an outstanding service. The skewness and kurtosis analysis showed that the data is normally distributed within the range of ±2. The descriptive statistics are illustrated in table 11.
### Table 11: Safety and Security Dimension Representation

**Descriptive Statistics**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Minimum</td>
<td>Maximum</td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Skewness</td>
<td>Kurtosis</td>
</tr>
<tr>
<td>SS1</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.66</td>
<td>.928</td>
<td>-.497</td>
<td>.556</td>
</tr>
<tr>
<td>SS2</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.75</td>
<td>.892</td>
<td>-.703</td>
<td>1.184</td>
</tr>
<tr>
<td>SS3</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.68</td>
<td>.994</td>
<td>-.460</td>
<td>.061</td>
</tr>
<tr>
<td>SS4</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.90</td>
<td>.928</td>
<td>-.979</td>
<td>1.406</td>
</tr>
<tr>
<td>SS5</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.82</td>
<td>.930</td>
<td>-.854</td>
<td>1.096</td>
</tr>
<tr>
<td>SS6</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.72</td>
<td>.965</td>
<td>-.795</td>
<td>.797</td>
</tr>
<tr>
<td>SS7</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.73</td>
<td>.942</td>
<td>-.864</td>
<td>1.082</td>
</tr>
<tr>
<td>SS8</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.71</td>
<td>.995</td>
<td>-.726</td>
<td>.468</td>
</tr>
<tr>
<td>SS9</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.70</td>
<td>.941</td>
<td>-.905</td>
<td>1.287</td>
</tr>
<tr>
<td>SS10</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.58</td>
<td>1.001</td>
<td>-.666</td>
<td>.314</td>
</tr>
<tr>
<td>SS11</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.77</td>
<td>.938</td>
<td>-.921</td>
<td>1.259</td>
</tr>
<tr>
<td>SS Mean</td>
<td>149</td>
<td>1.00</td>
<td>5.00</td>
<td>3.7303</td>
<td>.83389</td>
<td>-.897</td>
<td>1.730</td>
</tr>
<tr>
<td>Valid N</td>
<td></td>
<td>149</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 4.3.6 Hajj Facilities Dimension

The last dimension is Hajj facilities involve the reception, departure ports, and all rituals arenas in Hajj journey. This dimension is represented with sixteen indicators for the incorporation of accessibility and hygiene indicators for the facilities. Some of these dimension indicators scored the highest means among all Hajj service quality dimensions’ indicators where FAC8 recorded 4.19 followed
by FAC1 recorded 3.96 and FAC2 recorded 3.92. The overall mean of the dimension FAC mean recorded
3.72 reflecting that the respondent received an agreeable service quality performance with Hajj facilities.

To conclude the dimension data are normally distributed within the range ±2 in the skewness and
kurtosis analysis below in table 12.

Table 12: Hajj Facilities Dimension Representation

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAC1</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.96</td>
<td>.999</td>
<td>-1.072</td>
<td>.199</td>
</tr>
<tr>
<td>FAC2</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.92</td>
<td>.941</td>
<td>-.824</td>
<td>.199</td>
</tr>
<tr>
<td>FAC3</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.87</td>
<td>1.009</td>
<td>-.821</td>
<td>.199</td>
</tr>
<tr>
<td>FAC4</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.63</td>
<td>.947</td>
<td>-.601</td>
<td>.199</td>
</tr>
<tr>
<td>FAC5</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.57</td>
<td>.902</td>
<td>-.549</td>
<td>.199</td>
</tr>
<tr>
<td>FAC6</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.83</td>
<td>.873</td>
<td>-.962</td>
<td>.199</td>
</tr>
<tr>
<td>FAC7</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.76</td>
<td>.942</td>
<td>-.481</td>
<td>.199</td>
</tr>
<tr>
<td>FAC8</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>4.19</td>
<td>.935</td>
<td>1.254</td>
<td>.199</td>
</tr>
<tr>
<td>FAC9</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.81</td>
<td>.996</td>
<td>-.821</td>
<td>.199</td>
</tr>
<tr>
<td>FAC10</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.72</td>
<td>1.096</td>
<td>-.745</td>
<td>.199</td>
</tr>
<tr>
<td>FAC11</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.45</td>
<td>1.003</td>
<td>-.512</td>
<td>.199</td>
</tr>
<tr>
<td>FAC12</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.56</td>
<td>.975</td>
<td>-.758</td>
<td>.199</td>
</tr>
<tr>
<td>FAC13</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.54</td>
<td>.919</td>
<td>-.375</td>
<td>.199</td>
</tr>
<tr>
<td>FAC14</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.68</td>
<td>.871</td>
<td>-.832</td>
<td>.199</td>
</tr>
<tr>
<td>FAC15</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.37</td>
<td>1.080</td>
<td>-.390</td>
<td>.199</td>
</tr>
<tr>
<td>FAC16</td>
<td>149</td>
<td>1</td>
<td>5</td>
<td>3.70</td>
<td>.852</td>
<td>-1.037</td>
<td>.199</td>
</tr>
<tr>
<td>FAC Mean</td>
<td>149</td>
<td>1.00</td>
<td>5.00</td>
<td>3.724</td>
<td>.76183</td>
<td>-1.152</td>
<td>.199</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>149</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.4 Demographic Profile of Respondents

To begin with, understanding the demographic characteristics of the participants is essential in survey-based research. This section provides an overview of the sample population, including their age, gender, educational background, occupation, and other relevant demographic variables. Analyzing the demographic profile helps in assessing the representativeness of the sample and exploring potential variations in responses based on different demographic factors.

4.4.1 Gender

The frequency distribution for gender indicated that the sample consisted of 149 participants, with 103 (69.1%) identifying as male and 46 (30.9%) identifying as female. The frequency distribution for Gender is presented in table 13. Figure 12 shows the bar chart for distribution of Gender.

Table 13: Gender Frequency Distribution

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>103</td>
<td>69.1%</td>
</tr>
<tr>
<td>Female</td>
<td>46</td>
<td>30.9%</td>
</tr>
</tbody>
</table>
4.4.2 State

The frequency distribution for the participants residency by state indicates seventeen states and 3.4% US citizens reside out of the states. The South states represented by blue in table 14 form 47% of the participants followed by Midwest states represented by green in the same table to form 27.6% of the participants. Next is the Northeast states represented by orange in table 14 to form 12.75% of the participants tailed by West states represented by yellow in the same table which forms 9.4% of the participants. Totally the states represent 96.7% of the participants sample and the detailed percentages of each state are shown below in figure 13.

Table 14: State Frequency Distribution

<table>
<thead>
<tr>
<th>State</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>1</td>
<td>0.7%</td>
</tr>
<tr>
<td>Arkansas</td>
<td>1</td>
<td>0.7%</td>
</tr>
<tr>
<td>California</td>
<td>13</td>
<td>8.7%</td>
</tr>
<tr>
<td>State</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----</td>
<td>------</td>
</tr>
<tr>
<td>Florida</td>
<td>37</td>
<td>24.8%</td>
</tr>
<tr>
<td>Georgia</td>
<td>10</td>
<td>6.7%</td>
</tr>
<tr>
<td>Illinois</td>
<td>15</td>
<td>10.1%</td>
</tr>
<tr>
<td>Maryland</td>
<td>1</td>
<td>0.7%</td>
</tr>
<tr>
<td>Michigan</td>
<td>18</td>
<td>12.1%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>4</td>
<td>2.7%</td>
</tr>
<tr>
<td>Missouri</td>
<td>1</td>
<td>0.7%</td>
</tr>
<tr>
<td>Nevada</td>
<td>1</td>
<td>0.7%</td>
</tr>
<tr>
<td>New York</td>
<td>17</td>
<td>11.4%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>2</td>
<td>1.3%</td>
</tr>
<tr>
<td>Ohio</td>
<td>3</td>
<td>2.0%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>2</td>
<td>1.3%</td>
</tr>
<tr>
<td>Texas</td>
<td>7</td>
<td>4.7%</td>
</tr>
<tr>
<td>Virginia</td>
<td>11</td>
<td>7.4%</td>
</tr>
<tr>
<td>I do not reside in the United States</td>
<td>5</td>
<td>3.4%</td>
</tr>
</tbody>
</table>

Figure 13: Participants by State Bar Chart
4.4.3 Age

The respondents in this study all had participated in season 2022 and that limit participation age
to not exceed 65 years old. As of the frequency distribution of participants age range (41-50) represents
38.3% of the participants, (31-40) age range represents 25.5%, (51-60) age range represents 20.1%, (18-
30) age range represents 10.7%, and 61 and more age range represents 5.4% of the participants as
shown below in table 15. The bar chart in figure 14 represents the participants by age.

Table 15: Age Frequency Distribution

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-30</td>
<td>16</td>
<td>10.7%</td>
</tr>
<tr>
<td>31-40</td>
<td>38</td>
<td>25.5%</td>
</tr>
<tr>
<td>41-50</td>
<td>57</td>
<td>38.3%</td>
</tr>
<tr>
<td>51-60</td>
<td>30</td>
<td>20.1%</td>
</tr>
<tr>
<td>61 or more</td>
<td>8</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

Figure 14: Participants by Age Bar Chart.
### 4.4.4 Education

Table 16 and the bar chart in Figure 15 explain the frequency distribution of respondents by their education level. The highest segment among respondents are postgraduate education levels with 47% master’s degree holders followed by doctoral degree holders the third highest with 16.1%. The remainder of respondents’ educational levels are 19.5% bachelor’s degree holders; 8.7% professional degree holders; 3.4% some college with no degree; 2.7% high school; 1.3% associate degree, and 1.3% less than high school.

### Table 16: Education Frequency Distribution

<table>
<thead>
<tr>
<th>Education</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than high school degree</td>
<td>2</td>
<td>1.3%</td>
</tr>
<tr>
<td>High school graduate (high school diploma or equivalent including GED)</td>
<td>4</td>
<td>2.7%</td>
</tr>
<tr>
<td>Some college but no degree</td>
<td>5</td>
<td>3.4%</td>
</tr>
<tr>
<td>Associate degree in college (2-year)</td>
<td>2</td>
<td>1.3%</td>
</tr>
<tr>
<td>Bachelor’s degree in college (4-year)</td>
<td>29</td>
<td>19.5%</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>70</td>
<td>47.0%</td>
</tr>
<tr>
<td>Doctoral degree</td>
<td>24</td>
<td>16.1%</td>
</tr>
</tbody>
</table>
### Education

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional degree (JD, MD)</td>
<td>13</td>
<td>8.7%</td>
</tr>
</tbody>
</table>

**Figure 15: Participants by Education Bar Chart**

#### 4.4.5 Participation Status

Table 17 and the bar chart in Figure 16 illustrate the frequency distribution of respondents by their participation status. The participants went alone to Hajj journey shaped 57% of the sample size; 33.6% participated with family, and 9.4% participated with friends.

**Table 17: Participation Status Frequency Distribution**
4.4.6 Participation Numbers

The frequency distribution of Hajj participation times in table 18 and bar chart in figure 17 shows that 67.8% of respondents participated in Hajj for the first time, 21.5% of respondents participated for the second time, and 10.7% of respondents participated more than two times. Although it is preferable to investigate participants with no previous perception of Hajj services, the limited participation of Hajj in the addressed seasons dictated the inclusion of all participants in this study.
The Hajj pilgrimage in 2022 was announced as an exceptional post pandemic season that pilgrims apply to through Motawif portal offered by the Ministry of Hajj and Umrah. The selection follows an e-lottery system with packages silver, gold, platinum, and platinum plus. In this study sample, all the respondents participated in season 2022 and none from 2020 or 2021.

### Table 18: Participation Numbers Frequency Distribution

<table>
<thead>
<tr>
<th>Participation Numbers</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>First time</td>
<td>101</td>
<td>67.8%</td>
</tr>
<tr>
<td>Second time</td>
<td>32</td>
<td>21.5%</td>
</tr>
<tr>
<td>More than twice</td>
<td>16</td>
<td>10.7%</td>
</tr>
</tbody>
</table>

- **First time**: 101 participants (67.8%)
- **Second time**: 32 participants (21.5%)
- **More than twice**: 16 participants (10.7%)

![Image of bar chart](image)

**Figure 17**: Participants by Participation numbers Bar Chart

### 4.4.7 Hajj Package Class

The Hajj pilgrimage in 2022 was announced as an exceptional post pandemic season that pilgrims apply to through Motawif portal offered by the Ministry of Hajj and Umrah. The selection follows an e-lottery system with packages silver, gold, platinum, and platinum plus. In this study sample, all the respondents participated in season 2022 and none from 2020 or 2021.
seasons. The frequency distribution of Hajj package in table 19 and bar chart in figure 18 showed that 52.3% participated in golden package; 26.2% participated in platinum package; 12.8% participated in silver package, and 8.7 participated in platinum plus package.

Table 19: Hajj package Frequency Distribution

<table>
<thead>
<tr>
<th>Hajj Package</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platinum +</td>
<td>13</td>
<td>8.7%</td>
</tr>
<tr>
<td>Platinum</td>
<td>39</td>
<td>26.2%</td>
</tr>
<tr>
<td>Golden</td>
<td>78</td>
<td>52.3%</td>
</tr>
<tr>
<td>Silver</td>
<td>19</td>
<td>12.8%</td>
</tr>
</tbody>
</table>

Figure 18: Participants by Hajj Package Bar Chart

4.4.8 Hajj Package Cost

The frequency distribution of Hajj package cost in table 20 and bar chart in figure 19 shows the estimated prices range. The data indicates that 49% of participants within ($13,000 – $14,000) cost range; 28.2% of participants within ($14,000 – $15,000) cost range; of participants within cost range; 8.7% of participants within (more than $15,000) cost range; 8.7% of participants within ($12,000 – $
13,000) cost range; 3.4% of participants within ($10,000 – $11,000) cost range; 1.3% of participants within ($8,000 – $9,000) cost range; and 0.7% of participants within ($6,000 - $7,000) cost range.

Table 20: Hajj package Cost Frequency Distribution

<table>
<thead>
<tr>
<th>Cost</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6,000 - $7,000</td>
<td>1</td>
<td>0.7%</td>
</tr>
<tr>
<td>$8,000 - $9,000</td>
<td>2</td>
<td>1.3%</td>
</tr>
<tr>
<td>$10,000 - $11,000</td>
<td>5</td>
<td>3.4%</td>
</tr>
<tr>
<td>$12,000 - $13,000</td>
<td>13</td>
<td>8.7%</td>
</tr>
<tr>
<td>$13,000 - $14,000</td>
<td>73</td>
<td>49.0%</td>
</tr>
<tr>
<td>$14,000 - $15,000</td>
<td>42</td>
<td>28.2%</td>
</tr>
<tr>
<td>More than $15,000</td>
<td>13</td>
<td>8.7%</td>
</tr>
</tbody>
</table>

Figure 19: Participants by Hajj Package Cost Bar Chart
4.4.9 Annual Income

Lastly, in the demographic data is the annual income of the participants with frequency distribution illustrated in table 4.15 and the bar chart in figure 4.9. Among the five ranges shown participants with more than 80,000 annual income shape 36.2%; participants with ($60,000 to $60,999) annual income shape 18.8%; participants with ($70,000 to $70,999) annual income shape 16.8%; participants with ($50,000 to $50,999) annual income shape 16.8%, and participants with less than $50,000 annual income shape 11.4%.

Table 21: Annual Income Frequency Distribution

<table>
<thead>
<tr>
<th>Annual Income</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $50K</td>
<td>17</td>
<td>11.4%</td>
</tr>
<tr>
<td>$50K to $50.99K</td>
<td>25</td>
<td>16.8%</td>
</tr>
<tr>
<td>$60K to $60.99K</td>
<td>28</td>
<td>18.8%</td>
</tr>
<tr>
<td>$70K to $70.99K</td>
<td>25</td>
<td>16.8%</td>
</tr>
<tr>
<td>$80K or over</td>
<td>54</td>
<td>36.2%</td>
</tr>
</tbody>
</table>

Figure 20: Participants by Annual Income Bar Chart
4.5 Qualitative Open-ended Question

To capture more meaningful insights about pilgrims’ experience an open-ended question was designed at the end of the research instrument. The total number of responses to this question was 35 responses which is 23.5 % response rate. This limited data will be represented to complement the research quantitative data following the qualitative thematic analysis procedure. Rouder, Saucier, Kinder, and Jans (2021) in their study suggested practical steps to address the open-ended question’s data that can authentically represent nuances respondents’ concerns. The first step to code the data to more refinable forms based on the comment and whether it has a positive, negative, or neutral nature to code each detail in the response under a specific theme.

Following the thematic code, the second step is data visualization using Gestalt principles of qualitative data visualization such as shape and color, responses size, and connection. Microsoft Excel was utilized to thematically code the responses as shown in table 22. The themes are defined to be related to the study service quality dimensions and the seven themes are Motawif portal challenges, transportation challenges, hospitality challenges, guidance challenges, Hajj facilities comments, healthcare experience, and satisfactory experience. Each theme comments broken down to subthemes with their count accordingly. The subthemes and two themes’ data visualized by word bubbles with color code and shape based on the responses size and nature of the response as illustrated in figure 21.
<table>
<thead>
<tr>
<th>Code</th>
<th>Theme</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Motawif portal challenges</td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Selection and registration processes</td>
<td>8</td>
</tr>
<tr>
<td>1.2</td>
<td>Package misassignment</td>
<td>2</td>
</tr>
<tr>
<td>1.3</td>
<td>Phone application limitations</td>
<td>2</td>
</tr>
<tr>
<td>1.4</td>
<td>Package cost</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Transportation challenges</td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Trains/routes capacity</td>
<td>11</td>
</tr>
<tr>
<td>2.2</td>
<td>Stations management</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Hospitality challenges</td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Accommodation misplacement</td>
<td>3</td>
</tr>
<tr>
<td>3.2</td>
<td>Food diversity or quality</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Guidance challenges</td>
<td></td>
</tr>
<tr>
<td>4..1</td>
<td>In camp information</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>Hajj facilities comments</td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>Cleanliness of Grand Sanctuary</td>
<td>5</td>
</tr>
<tr>
<td>5.2</td>
<td>Empathy of staff</td>
<td>2</td>
</tr>
<tr>
<td>6.</td>
<td>Healthcare experience</td>
<td>2</td>
</tr>
<tr>
<td>7.</td>
<td>Satisfactory experience</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>52</td>
</tr>
</tbody>
</table>
Partial Least Square Structural Equation Modeling as introduced in chapter three is a statistical technique that will allow the examination of the complex relationships among Hajj service quality dimensions within the conceptual framework. In this research study, PLS-SEM will be employed to explore the interdependencies and causal relationships between different constructs or variables identified in the research model. The technique provides a comprehensive analysis by assessing both the direct and indirect effects among variables, thereby facilitating a deeper understanding of the underlying relationships. The Hajj service quality dimensions identified in the study namely hospitality, guidance,
transportation, healthcare, safety and security, and Hajj facilities “the study independent variables” will act as exogenous latent variables in the SEM. The Hajj experience overall satisfaction construct the first dependent variable in the study will include a total of seven satisfaction indicators, an overall satisfaction indicator and a satisfaction indicator for each dimension. This construct will act as an exogenous and an endogenous simultaneously, where arrows get into the construct from the latent variables and an arrow to the second dependent variable willingness to extend construct. This construct will act as an endogenous manifest variable, while the overall satisfaction construct will be both latent and manifest variables. All the 73 indicators in this study PLS-SEM models are reflective indicators where the indicators define the constructs. These denoted by arrows pointing to the constructs as illustrated in the study PLS-SEM model below in figure 21. This section encompasses the assessment of both the measurement and the structural models in detail utilizing SmartPLS 4 software.
Figure 21: PLS-SEM Model Constructs and indicators for Hajj service Quality
As previously covered in chapter three the measurement model assessment includes the indicators’ reliability, constructs’ reliability, convergent validity, and discriminant validity. This will be followed by the structural model assessment anticipated to test thirteen hypotheses representing the relationships among the constructs. This will include the path coefficient, the coefficient of determination R squared, and the predictive relevance Q squared. As another step in the structural mode the demographics in the study gender, income, Hajj package, participation times, and education will be added as control variables to see their effect on the manifest variables.

4.6.1 The Measurement Model Reliability

Measurement model also known as the outer model assessment includes the examination of the quality criteria of the constructs in the study. This includes evaluation of factor loading, construct reliability (Cronbach’s Alpha and composite reliability), and construct validity (convergent and discriminant validity).

4.6.1.1 Factor Loading

The eight constructs in the study are attached to seventy-three indicators and the reliability of those indicators will be investigated. To realize the reliability of the indicators the loadings of the indicators must be tested. A loading value of 0.6 or above will indicate the acceptance of an indicator reliability. Any indicator’s loading below 0.6 will be eliminated from the model. Initially, the model with 73 indicators observation leaded to indicator HS6 elimination since it is the only indicator with loading below 0.6 and causing cross loading. The revised model indicators’ loadings are all equal or above 0.6 and accepted as illustrated in table 23. The PLS analysis can be carried out further after the assessment of the measurement model indicators’ reliability and the revised model yielded 72 indicators.
Table 23: Measurement Model Factor Loading

<table>
<thead>
<tr>
<th></th>
<th>Hospitality</th>
<th>Guidance</th>
<th>Transportation</th>
<th>Healthcare</th>
<th>Safety &amp; Security</th>
<th>Hajj Facilities</th>
<th>Hajj Overall Satisfaction</th>
<th>Willingness to Extend</th>
</tr>
</thead>
<tbody>
<tr>
<td>HOS1</td>
<td>0.811</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOS2</td>
<td>0.813</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOS3</td>
<td>0.851</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOS4</td>
<td>0.857</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOS5</td>
<td>0.867</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOS6</td>
<td>0.850</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOS7</td>
<td>0.890</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOS8</td>
<td>0.895</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOS9</td>
<td>0.856</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOS10</td>
<td>0.598</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUI1</td>
<td>0.839</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUI2</td>
<td>0.828</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUI3</td>
<td>0.906</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUI4</td>
<td>0.845</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUI5</td>
<td>0.881</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUI6</td>
<td>0.903</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUI7</td>
<td>0.910</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUI8</td>
<td>0.897</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUI9</td>
<td>0.900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUI10</td>
<td>0.851</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRAN S1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.660</td>
</tr>
<tr>
<td>TRAN S2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.691</td>
</tr>
<tr>
<td>TRAN S3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.862</td>
</tr>
<tr>
<td>TRAN S4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.842</td>
</tr>
<tr>
<td>TRAN S5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.909</td>
</tr>
<tr>
<td>TRAN S6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.890</td>
</tr>
<tr>
<td>TRAN S7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.874</td>
</tr>
<tr>
<td>TRAN S8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.867</td>
</tr>
<tr>
<td>TRAN S9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.897</td>
</tr>
<tr>
<td></td>
<td>Hospitality</td>
<td>Guidance</td>
<td>Transportation</td>
<td>Healthcare</td>
<td>Safety &amp; Security</td>
<td>Hajj Facilities</td>
<td>Hajj Overall Satisfaction</td>
<td>Willingness to Extend</td>
</tr>
<tr>
<td>-------</td>
<td>-------------</td>
<td>----------</td>
<td>----------------</td>
<td>------------</td>
<td>-------------------</td>
<td>----------------</td>
<td>--------------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>TRAN</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.804</td>
<td></td>
</tr>
<tr>
<td>HSER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.877</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.880</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.899</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.909</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.921</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.910</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.816</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.836</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.828</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.695</td>
<td></td>
</tr>
<tr>
<td>SS1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.883</td>
<td></td>
</tr>
<tr>
<td>SS2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.829</td>
<td></td>
</tr>
<tr>
<td>SS3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.863</td>
<td></td>
</tr>
<tr>
<td>SS4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.876</td>
<td></td>
</tr>
<tr>
<td>SS5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.908</td>
<td></td>
</tr>
<tr>
<td>SS6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.863</td>
<td></td>
</tr>
<tr>
<td>SS7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.928</td>
<td></td>
</tr>
<tr>
<td>SS8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.916</td>
<td></td>
</tr>
<tr>
<td>SS9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.878</td>
<td></td>
</tr>
<tr>
<td>SS10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.801</td>
<td></td>
</tr>
<tr>
<td>FAC1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.776</td>
<td></td>
</tr>
<tr>
<td>FAC2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.829</td>
<td></td>
</tr>
<tr>
<td>FAC3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.821</td>
<td></td>
</tr>
<tr>
<td>FAC4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.775</td>
<td></td>
</tr>
<tr>
<td>FAC5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.756</td>
<td></td>
</tr>
<tr>
<td>FAC6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.833</td>
<td></td>
</tr>
<tr>
<td>FAC7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.664</td>
<td></td>
</tr>
<tr>
<td>FAC8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.753</td>
<td></td>
</tr>
<tr>
<td>FAC9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.817</td>
<td></td>
</tr>
</tbody>
</table>

139
<table>
<thead>
<tr>
<th></th>
<th>Hospitality</th>
<th>Guidance</th>
<th>Transportation</th>
<th>Healthcare</th>
<th>Safety &amp; Security</th>
<th>Hajj Facilities</th>
<th>Hajj Overall Satisfaction</th>
<th>Willingness to Extend</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAC1 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.802</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAC1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.802</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAC1 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.851</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAC1 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.772</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAC1 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.850</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FAC1 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.728</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.846</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.810</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.780</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.718</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.863</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HS7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.905</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willingness to Extend</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4.6.1.2 Construct Reliability

The construct reliability is also known as internal consistency reliability, was investigated by utilizing Cronbach’s Alpha and Composite Reliability (CR). As presented in chapter three a value of 0.7 and above is acceptable value for Cronbach’s alpha and CR and value of 0.6 and below is rejected. Table 24 illustrated the values of Cronbach’s alpha and CR for the study constructs to range from 0.90 to 0.97 and from 0.91 to 0.97 respectively. Therefore the PLS-SEM model has an acceptable internal consistency reliability or construct reliability judging by the values of Cronbach’s alpha and CR.
4.6.2 The Measurement Model Validity

4.6.2.1 Convergent Validity

The model convergent validity revolves around the score of Average Variance Extracted (AVE). Each construct items in the study should assign half of their variance with the construct, which means that the AVE standard score should score at least 0.5. Table 25 below shows the PLS-SEM model constructs AVE scores varying from 0.62 to 0.77, which are above the acceptable value of 0.5. The values represented support convergent validity of the model and implies that the measures utilized are robust.

Table 25: Measurement Model Convergent Validity

<table>
<thead>
<tr>
<th>Average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hospitality</td>
</tr>
<tr>
<td>0.694</td>
</tr>
<tr>
<td>3. Guidance</td>
</tr>
<tr>
<td>0.768</td>
</tr>
<tr>
<td>3. Transportation</td>
</tr>
<tr>
<td>0.695</td>
</tr>
</tbody>
</table>
### Average variance extracted (AVE)

<table>
<thead>
<tr>
<th>Constructs</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Health Care</td>
<td>0.739</td>
</tr>
<tr>
<td>5. Safety &amp; Security</td>
<td>0.766</td>
</tr>
<tr>
<td>6. Hajj Facilities</td>
<td>0.624</td>
</tr>
<tr>
<td>7. Hajj Overall Satisfaction</td>
<td>0.676</td>
</tr>
</tbody>
</table>

#### 4.6.2.2 Discriminant Validity

There are multiple approaches to assess discriminant validity within PLS-SEM including HTMT, Fornell & Larcker criterion, and cross-loadings. Those three measures are applied for reflective constructs only and in this study all the constructs hold reflective indicators. The first two measures will be utilized to assess the discriminant validity. Discriminant validity basically secures that each construct is distinct from the other constructs involved in the model and accepted assessment to realize the relationships between latent variables in variance-based SEM. In the upcoming subsections the HTMT ratio and Fornell & Larcker criterion will be displayed.

Henseler et al. (2015) proposed HTMT measure for discriminant validity and supported the superiority of the approach via Monte Carlo simulation study comparing the tool specificity and sensitivity rates with the other two techniques. The researchers also argued the robustness of Fornell & Larcker criterion and doubted the measure ability to realize discrepancy between constructs. They supported HTMT superiority and outlined that the acceptable threshold for HTMT to be 0.90 or less to achieve discriminant validity (Henseler et al., 2015). Table 26 below shows HTMT ratio for the study measurement model to range from 0.36 to 0.89 and the discriminant validity has been met.

Table 26: HTMT Ratios
Another approach to check discriminant validity is Fornell & Larcker criterion where the squared root of AVE value of each construct should be larger than the correlation value with any other construct in the model. Table 27 reflects that every construct AVE root is greater than the correlation values with
other constructs in the model except for a few relationships (safety and security with Hajj facilities, Hajj overall satisfaction with Hajj facilities, Safety and Security with guidance) where the square root of AVE is slightly lower than the correlation of the two constructs. However, the HTMT ratio revealed that the ratio of correlation is less than the required threshold. Therefore, it is concluded that the discriminant validity can be referred for as established. Figure 22 in the next page shows the PLS model with variables’ path coefficients.

Table 27: Constructs Correlation and Diagonal AVE root

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hospitality</td>
<td><strong>0.833</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Guidance</td>
<td>0.803</td>
<td><strong>0.877</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Transportation</td>
<td>0.602</td>
<td>0.753</td>
<td><strong>0.834</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Health Care</td>
<td>0.691</td>
<td>0.635</td>
<td>0.628</td>
<td><strong>0.859</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Safety &amp; Security</td>
<td>0.626</td>
<td>0.657</td>
<td>0.636</td>
<td>0.734</td>
<td><strong>0.875</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Hajj Facilities</td>
<td>0.626</td>
<td>0.614</td>
<td>0.68</td>
<td>0.751</td>
<td>0.819</td>
<td><strong>0.79</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Hajj Overall Satisfaction</td>
<td>0.808</td>
<td>0.828</td>
<td>0.794</td>
<td>0.797</td>
<td>0.841</td>
<td>0.828</td>
<td><strong>0.822</strong></td>
<td></td>
</tr>
<tr>
<td>8. Willingness to Extend</td>
<td>0.408</td>
<td>0.355</td>
<td>0.377</td>
<td>0.448</td>
<td>0.42</td>
<td>0.503</td>
<td>0.444</td>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>
Figure 22: SEM-PLS Model Algorithm Standardized Coefficients Results
4.6.3 The Structural Model Hypothesis Testing

The hypothesis causal relationships between the exogenous and endogenous constructs revealed by the structural model. In addition, it provides insights about how the study conceptual framework foresees the hypothesis paths. The study conceptual framework is intended to test thirteen hypotheses. The six Hajj service quality dimensions impact on Hajj overall satisfaction on one side and the six constructs impact on willingness to extend on the other side. The last hypothesis is the impact of Hajj overall satisfaction on willingness to extend. The Smart PLS bootstrapping approach was applied to get the path coefficient $\beta$, t-values, standard deviation, and p-values. These values are displayed in table 28 and will enable interpretations of the hypotheses’ paths significance of the structural model. Figure 23 illustrates the bootstrapping procedure with path coefficients and hidden indicators that represent the structural model.

<table>
<thead>
<tr>
<th>Path</th>
<th>Path Coefficient ($\beta$)</th>
<th>Standard deviation</th>
<th>T statistics</th>
<th>P values</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitality $\rightarrow$ Hajj Overall Satisfaction</td>
<td>0.216</td>
<td>0.048</td>
<td>4.495</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>Guidance $\rightarrow$ Hajj Overall Satisfaction</td>
<td>0.174</td>
<td>0.052</td>
<td>3.331</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>Transportation $\rightarrow$ Hajj Overall Satisfaction</td>
<td>0.191</td>
<td>0.043</td>
<td>4.468</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>Path</td>
<td>Path Coefficient (β)</td>
<td>Standard deviation</td>
<td>T statistics</td>
<td>P values</td>
<td>Decision</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>----------------------</td>
<td>--------------------</td>
<td>--------------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>Health Care -&gt; Hajj Overall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0.099</td>
<td>0.045</td>
<td>2.187</td>
<td>0.014</td>
<td>Supported</td>
</tr>
<tr>
<td>Safety &amp; Security -&gt; Hajj</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Satisfaction</td>
<td>0.260</td>
<td>0.050</td>
<td>5.235</td>
<td>0.000</td>
<td>Supported</td>
</tr>
<tr>
<td>Hajj Facilities -&gt; Hajj Overall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>0.168</td>
<td>0.066</td>
<td>2.547</td>
<td>0.005</td>
<td>Supported</td>
</tr>
<tr>
<td>Hospitality -&gt; Willingness to Extend</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extend</td>
<td>0.209</td>
<td>0.146</td>
<td>1.432</td>
<td>0.076</td>
<td>Not supported</td>
</tr>
<tr>
<td>Guidance -&gt; Willingness to Extend</td>
<td>-0.044</td>
<td>0.155</td>
<td>0.285</td>
<td>0.388</td>
<td>Not supported</td>
</tr>
<tr>
<td>Transportation -&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willingness to Extend</td>
<td>0.081</td>
<td>0.142</td>
<td>0.568</td>
<td>0.285</td>
<td>Not supported</td>
</tr>
<tr>
<td>Health Care -&gt; Willingness to Extend</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to Extend</td>
<td>0.129</td>
<td>0.138</td>
<td>0.932</td>
<td>0.176</td>
<td>Not supported</td>
</tr>
<tr>
<td>Safety &amp; Security -&gt;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Willingness to Extend</td>
<td>0.002</td>
<td>0.190</td>
<td>0.009</td>
<td>0.497</td>
<td>Not supported</td>
</tr>
<tr>
<td>Hajj Facilities -&gt; Willingness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to Extend</td>
<td>0.414</td>
<td>0.164</td>
<td>2.529</td>
<td>0.006</td>
<td>Supported</td>
</tr>
<tr>
<td>Path</td>
<td>Path Coefficient (β)</td>
<td>Standard deviation</td>
<td>T statistics</td>
<td>P values</td>
<td>Decision</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------</td>
<td>--------------------</td>
<td>--------------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td>Hajj Overall Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not supported</td>
</tr>
<tr>
<td>Willingness to Extend</td>
<td>-0.199</td>
<td>0.281</td>
<td>0.709</td>
<td>0.239</td>
<td></td>
</tr>
</tbody>
</table>
After obtaining the total effects each of the thirteen hypotheses will be evaluated for significance. To verify significance a p-value greater than 0.05 shows that the relationship is insignificant, and the hypothesis is therefore not supported.

**H1:** There is a significant and positive impact of Hospitality on Hajj overall satisfaction.
The hypothesis seeks to examine whether hospitality (HOS) has a significant impact on Hajj overall satisfaction (HS). The results revealed that there is a significant impact of HOS on HS (H1: $\beta = 0.216$, $t = 4.495$, $p < 0.001$). Hence H1 is supported.

H2: There is a significant and positive impact of Guidance on Hajj overall satisfaction.

The hypothesis seeks to examine whether guidance (Guiry, Scott, & Vequist) has a significant impact on Hajj overall satisfaction (HS). The results revealed that there is a significant impact of GUI on HS (H2: $\beta = 0.174$, $t = 3.331$, $p < 0.001$). Hence H2 is supported.

H3: There is a significant and positive impact of Transportation on Hajj overall satisfaction.

The hypothesis seeks to examine whether transportation (TRANS) has a significant impact on Hajj overall satisfaction (HS). The results revealed that there is a significant impact of TRANS on HS (H3: $\beta = 0.191$, $t = 4.468$, $p < 0.001$). Hence H3 is supported.

H4: There is a significant and positive impact of Healthcare on Hajj overall satisfaction.

The hypothesis seeks to examine whether guidance (HSER) has a significant impact on Hajj overall satisfaction (HS). The results revealed that there is a significant impact of HSER on HS (H4: $\beta = 0.099$, $t = 2.187$, $p = 0.014$). Since p-value < 0.05, then H4 is supported.

H5: There is a significant and positive impact of Safety and Security on Hajj overall satisfaction.
The hypothesis seeks to examine whether safety and security (SS) has a significant impact on Hajj overall satisfaction (HS). The results revealed that there is a significant impact of SS on HS (H5: $\beta = 0.260$, $t = 5.235$, $p < 0.001$). Hence H5 is supported.

**H6:** There is a significant and positive impact of Hajj facilities on Hajj overall satisfaction.

The hypothesis seeks to examine whether Hajj facilities (FAC) has a significant impact on Hajj overall satisfaction (HS). The results revealed that there is a significant impact of FAC on HS (H6: $\beta = 0.168$, $t = 2.547$, $p = 0.005$). Since $p$-value < 0.05, then H6 is supported.

**H7:** There is a significant and positive impact of Hospitality on Willingness to extend visits to heritage sites.

The hypothesis seeks to examine whether hospitality (HOS) has a significant impact on willingness to extend. The results revealed that there is no significant impact of HOS on willingness to extend (H7: $\beta = 0.209$, $t = 1.432$, $p = 0.076$). Since $p > 0.05$, then H7 is not supported.

**H8:** There is a significant and positive impact of Guidance on Willingness to extend visits to heritage sites.

The hypothesis seeks to examine whether guidance (Guiry et al.) has a significant impact on willingness to extend. The results revealed that there is no significant impact of GUI on willingness to extend (H8: $\beta = -0.044$, $t = 0.285$, $p = 0.388$). Since $p > 0.05$, then H8 is not supported.

**H9:** There is a significant and positive impact of Transportation on Willingness to extend visits to heritage sites.
The hypothesis seeks to examine whether transportation (TRANS) has a significant impact on willingness to extend. The results revealed that there is no significant impact of TRANS on willingness to extend (H9: $\beta = 0.081$, $t = 0.568$, $p = 0.285$). Since p-value > 0.05, then H9 is not supported.

H10: There is a significant and positive impact of Healthcare on Willingness to extend visits to heritage sites.

The hypothesis seeks to examine whether healthcare (HSER) has a significant impact on willingness to extend. The results revealed that there is no significant impact of HSER on willingness to extend (H10: $\beta = 0.129$, $t = 0.932$, $p = 0.176$). Since p-value > 0.05, then H10 is not supported.

H11: There is a significant and positive impact of Safety and Security on Willingness to extend visits to heritage sites.

The hypothesis seeks to examine whether safety and security (SS) has a significant impact on willingness to extend. The results revealed that there is no significant impact of SS on willingness to extend (H11: $\beta = 0.002$, $t = 0.009$, $p = 0.497$). Since p-value > 0.05, then H11 is not supported.

H12: There is a significant and positive impact of Hajj facilities on Willingness to extend visits to heritage sites.

The hypothesis seeks to examine whether Hajj facilities (FAC) has a significant impact on willingness to extend. The results revealed that there is a significant impact of FAC on willingness to extend (H12: $\beta = 0.414$, $t = 2.529$, $p = 0.006$). Since p-value < 0.05, then H12 is supported.

H13: There is a significant and positive impact of Hajj overall satisfaction on Willingness to extend visits to heritage sites.
The hypothesis seeks to examine whether Hajj overall satisfaction (HS) has a significant impact on willingness to extend. The results revealed that there is no significant impact of HS on willingness to extend \( (H13: \beta = -0.199, t = 0.709, p = 0.239) \). Since p-value > 0.05, then H13 is not supported.

### 4.5.4 Explanatory Power and Predictive Relevance

To assess the structural model R-squared statistics were utilized to reveal the explanatory power. The results revealed an R-squared of 0.908 for Hajj overall satisfaction. This shows that 90.8% change in Hajj overall satisfaction has been accounted for by hospitality, guidance, transportation, healthcare, safety & security, and hajj facilities. Furthermore, the R-squared for willingness to extend is 0.28. This showed that 28% of change in Willingness to extend caused by Hajj overall satisfaction, hospitality, guidance, transportation, healthcare, safety & security, and hajj facilities. According to Hair Jr, Hair Jr, Hult, Ringle, and Sarstedt (2021) the results for R square statistics show that the predictors has a substantial explanatory power (> 0.10).

Furthermore, Q-squared statistics were analyzed to assess the predictive relevance. PLSpredict contrasts the prediction errors of the model path versus simple mean predictions. The Q-squared predictive error compares the indicators’ original values with the predicted values. A Q-squared value of over zero shows that the predictors are relevant in predicting the outcomes. The Q-squared statistic in the study for Hajj overall satisfaction and willingness to extend is greater than zero. Hence the predictors in the study can be referred to as relevant in predicting the outcomes as presented in table 29.
Table 29: The Structural model $R^2$ and $Q^2$ Results

<table>
<thead>
<tr>
<th>Endogenous Variable</th>
<th>$R^2$</th>
<th>$Q^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hajj Overall Satisfaction</td>
<td>0.908</td>
<td>0.898</td>
</tr>
<tr>
<td>Willingness to Extend</td>
<td>0.28</td>
<td>0.192</td>
</tr>
</tbody>
</table>

4.6.5 Control Variables

As part of the structural model assessment control variables including gender, income, Hajj package, participation numbers, and education, were included in the model to assess whether the proposed relationships significantly change with the inclusion of the controls in the model figure 24. The results are illustrated in table 30 and revealed that there is no significant change in the proposed relationships, the relationships that were significant without the inclusion of control variables were still found significant with the inclusion of control variables in the model. Furthermore, the results revealed that males have a higher willingness to extend in comparison to the female respondents. Hajj package was found to have significant impact on willingness to extend. This shows that the higher the quality of Hajj package the higher is the willingness to extend. The income was found to have significant impact on the hajj overall satisfaction showing that with an increase in income there is a higher probability of achieving satisfaction in Hajj. The results revealed the education has no significant impact on Hajj overall satisfaction. Likewise, the participation numbers have no significant impact on the Hajj overall satisfaction or the willingness to extend the visit to heritage sites. The structural model with control variables R-squared statistics revealed an explanatory power of 0.912 for Hajj overall satisfaction. This shows that 91.2 % change in Hajj overall satisfaction has been accounted for by hospitality, guidance, transportation, healthcare, safety & security, hajj facilities, and income. Furthermore, the R-squared for
willingness to extend is 0.328. This showed that 32.8% of change in Willingness to extend caused by Hajj overall satisfaction, hospitality, guidance, transportation, healthcare, safety & security, hajj facilities, gender, and Hajj package.

Table 30: Hypotheses Testing Results with the Inclusion of Control Variables

<table>
<thead>
<tr>
<th>Path</th>
<th>Path Coefficient (β)</th>
<th>Standard deviation</th>
<th>T statistic</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitality -&gt; Hajj Overall Satisfaction</td>
<td>0.214</td>
<td>0.051</td>
<td>4.214</td>
<td>0</td>
</tr>
<tr>
<td>Guidance -&gt; Hajj Overall Satisfaction</td>
<td>0.181</td>
<td>0.057</td>
<td>3.189</td>
<td>0.001</td>
</tr>
<tr>
<td>Transportation -&gt; Hajj Overall Satisfaction</td>
<td>0.172</td>
<td>0.046</td>
<td>3.719</td>
<td>0</td>
</tr>
<tr>
<td>Healthcare -&gt; Hajj Overall Satisfaction</td>
<td>0.096</td>
<td>0.045</td>
<td>2.124</td>
<td>0.017</td>
</tr>
<tr>
<td>Safety &amp; Security -&gt; Hajj Overall Satisfaction</td>
<td>0.24</td>
<td>0.049</td>
<td>4.923</td>
<td>0</td>
</tr>
<tr>
<td>Hajj Facilities -&gt; Hajj Overall Satisfaction</td>
<td>0.186</td>
<td>0.064</td>
<td>2.905</td>
<td>0.002</td>
</tr>
<tr>
<td>Hajj Overall Satisfaction -&gt; Willingness to Extend</td>
<td>-0.21</td>
<td>0.284</td>
<td>0.741</td>
<td>0.229</td>
</tr>
<tr>
<td>Hospitality -&gt; Willingness to Extend</td>
<td>0.162</td>
<td>0.145</td>
<td>1.118</td>
<td>0.132</td>
</tr>
<tr>
<td>Guidance -&gt; Willingness to Extend</td>
<td>-0.026</td>
<td>0.153</td>
<td>0.171</td>
<td>0.432</td>
</tr>
<tr>
<td>Transportation -&gt; Willingness to Extend</td>
<td>0.054</td>
<td>0.139</td>
<td>0.387</td>
<td>0.349</td>
</tr>
<tr>
<td>Healthcare -&gt; Willingness to Extend</td>
<td>0.151</td>
<td>0.144</td>
<td>1.05</td>
<td>0.147</td>
</tr>
<tr>
<td>Safety &amp; Security -&gt; Willingness to Extend</td>
<td>-0.001</td>
<td>0.191</td>
<td>0.007</td>
<td>0.497</td>
</tr>
<tr>
<td>Path</td>
<td>Path Coefficient $(\beta)$</td>
<td>Standard deviation</td>
<td>T</td>
<td>P</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>----------------------------</td>
<td>--------------------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>Hajj Facilities $\rightarrow$ Willingness to Extend</td>
<td>0.418</td>
<td>0.163</td>
<td>2.567</td>
<td>0.005</td>
</tr>
<tr>
<td>Gender $\rightarrow$ Hajj Overall Satisfaction</td>
<td>-0.023</td>
<td>0.049</td>
<td>0.47</td>
<td>0.319</td>
</tr>
<tr>
<td>Gender $\rightarrow$ Willingness to Extend</td>
<td>-0.321</td>
<td>0.173</td>
<td>1.85</td>
<td>0.032</td>
</tr>
<tr>
<td>Education $\rightarrow$ Hajj Overall Satisfaction</td>
<td>-0.014</td>
<td>0.035</td>
<td>0.417</td>
<td>0.338</td>
</tr>
<tr>
<td>Education $\rightarrow$ Willingness to Extend</td>
<td>-0.085</td>
<td>0.091</td>
<td>0.937</td>
<td>0.174</td>
</tr>
<tr>
<td>Participation Numbers $\rightarrow$ Hajj Overall Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satisfaction</td>
<td>-0.048</td>
<td>0.036</td>
<td>1.305</td>
<td>0.096</td>
</tr>
<tr>
<td>Participation Numbers $\rightarrow$ Willingness to Extend</td>
<td>0.06</td>
<td>0.083</td>
<td>0.727</td>
<td>0.234</td>
</tr>
<tr>
<td>Income $\rightarrow$ Hajj Overall Satisfaction</td>
<td>-0.041</td>
<td>0.027</td>
<td>1.525</td>
<td>0.050</td>
</tr>
<tr>
<td>Income $\rightarrow$ Willingness to Extend</td>
<td>-0.055</td>
<td>0.088</td>
<td>0.622</td>
<td>0.267</td>
</tr>
<tr>
<td>Hajj Package $\rightarrow$ Hajj Overall Satisfaction</td>
<td>-0.003</td>
<td>0.022</td>
<td>0.124</td>
<td>0.451</td>
</tr>
<tr>
<td>Hajj Package $\rightarrow$ Willingness to Extend</td>
<td>-0.146</td>
<td>0.076</td>
<td>1.912</td>
<td>0.028</td>
</tr>
</tbody>
</table>
4.7 Data Analysis and Findings Summary

After the identification of Hajj service quality dimensions hospitality, guidance, transportation, healthcare, safety and security, and Hajj facilities, the efforts were made to grasp insights about Hajj service quality and how they impact Hajj overall satisfaction and willingness to extend the visit to heritage sites. The included collected data through Qualtrics platform was 149 usable responses with 80.97% response rate.
The descriptive statistics showed that the data was normally distributed for all dimensions and revealed the variation of means for the dimensions’ items. The means of the dimensions of service quality performance by descending order are healthcare, safety and security, Hajj facilities, hospitality, transportation, and guidance for the acquired study sample. The data purification, the descriptive statistics, and the following frequency distribution were assessed by SPSS 28 statistical package.

The respondents’ demographics frequency distribution revealed that 69.1% of the participants were males and 30.95% were females. They are scattered in 17 states and combined by regions to streamline the data as 47% South states, 27.6% Midwest states, 12.75% Northeast states, and 9.4% West states. The respondents’ age range representations are (41-50) 38.3%, (31-40) 25.5%, (51-60) 20.1%, (18-30) 10.7%, and 61 or older 5.4% respectively. Moreover, the participants’ educational level can be summarized as master’s degree 47.0%, doctoral degree 16.1%, bachelor’s degree 19.5%, and the remainder 8.7% varies between associate degrees, some college, high school, or less. The data also revealed the status of the participation with 67.8% first time participation, 21.5% second time participation, and 10.7% with more. 57% of the sample participated alone, 33.6% participated with family, and 9.4% participated with friends. The last part was the participants annual income and their package class and cost. The participants’ income ranges as follows ($ 80,000 or over) 36.2%, ($ 60,000 to $ 60.99,000) 18.8%, ($ 50,000 to $ 50.99,000) 16.8%, ($ 70,000 to $ 70.99K) 16.8%, and (less than $ 50 K) 11.4%. From the offered Hajj packages’ classes, the golden package was 52.3%, the platinum package was 34.9%, and the silver package was 12.8%. Those packages’ cost range are mostly $ 12,000 or above with 94.6% of the sample.

The data was then inserted into SmartPLS 4 SEM variance-based software deploys a combination of path modeling and factor analysis. First, the measurement model was assessed to inspect the model reliability and validity. The indicators’ reliability, also known as factor loading, showed consistent
indicators’ reliability. All the indicators in the model showed consistency except HS6 indicator that was eliminated from the model. Following the indicator reliability, the construct reliability Cronbach’s Alpha and CR values exceeded 0.7 the accepted threshold. The validity of the model has two sides the convergent validity and the discriminant validity. All the model dimensions AVE values are above 0.5 and that indicates a fulfilment of the convergent validity. The last part of the measurement model assessment is the discriminant validity, and it was realized through Fornell & Larcker criterion and HTMT criterion. Fornell & Larcker test showed AVE root higher than the correlations with other constructs aside from few relations that are slightly higher than the AVE root. Those arrear relations are safety and security with Hajj facilities, Hajj overall satisfaction with Hajj facilities, and safety and security with guidance. Counter to HTMT ratio which are below 0.9 for all constructs and that means the discriminant validity has been established.

The hypothesized casual relationships between the exogenous and endogenous constructs had been identified by the structural model. All the proposed Hajj service quality dimensions have a significant impact on Hajj overall satisfaction with p value lower than 0.05. On the other hand, none of the dimensions have significant impact on willingness to extend the visit except Hajj facilities that showed positive impact. The explanatory power R-squared and predictive relevance Q-squared were also exhibited for the study endogenous variables. R-squared for Hajj overall satisfaction showed that 90.8% change in this variable is caused by Hajj service quality dimensions presented in the study. In addition, Willingness to extend R-squared showed that 28% of change in it was caused by Hajj service quality dimensions. The predictive relevance Q-squared for the two endogenous variables are above zero which means that the values are well reconstructed, and that the model has predictive relevance.

To conclude, the demographics were inserted as control variables to the structural model to see if there are any changes on the hypotheses. In gender, males showed higher tendency to extend. Hajj
package was found to have significant impact on willingness to extend. Same wise, the income was positively impacting the hajj overall satisfaction. In the upcoming chapter a conclusion will be drawn from the represented results and a discussion around the implications will be outlined.
CHAPTER FIVE: DISCUSSION AND CONCLUSION

The main objective of this research is to identify Hajj Service Quality (HSQ) dimensions and to explore the impact of each dimension on pilgrims’ overall satisfaction and willingness to extend the visit to heritage sites in the environment of the event. The chapter draws the research conclusion by connecting the literature review and the study finding. Furthermore, a discussion revolves around the implications that appeared from the study and the limitations involved. This chapter will end with future research directions in Hajj context or similar massive gathering settings in any tourism sector.

5.1 Discussion

The conceptual framework in the study represented six HSQ dimensions namely hospitality, guidance, transportation, healthcare, safety and security, and Hajj facilities and explored service quality performance to give directions to Hajj quality improvement as one of the Vision 2030 DARP program’s objectives. The impact of each dimension on pilgrims’ overall satisfaction was investigated through PLS-SEM model. In addition, the pilgrims’ willingness to extend the visit to heritage sites or related activities was involved in the research framework. Based on the conducted literature review there is no universal service quality tool that fits all service settings and research instruments should be modified to fit the purpose of the research. The extracted dimensions from literature review applied to a three rounds Delphi procedure including a panel of fifteen experts in Hajj context. The conducted step was to confirm the research instrument’s dimensionality and face validate the incorporated items. The confirmed research instrument included 83 items as follow 73 items includes 10 similar items for five dimensions, 15 items for Hajj facilities dimension, 6 items for Hajj overall satisfaction, a single item for willingness to extend the visit, 12 items demographics, and a single open-ended question to capture additional comments. The six HSQ dimensions acted as independent variables and exogenous variables in the PLS-
SEM. On the other hand, the Hajj overall satisfaction and the wiliness to extend visit variables acted as dependent variables and endogenous variables in the PLS-SEM model. The demographic items applied as control variables in PLS-SEM model to realize any effects. The research survey ended with an open-ended question to capture any additional insights and the results followed a thematic analysis. The study applied a mixed method, and the qualitative findings will be discussed followed by the quantitative finding where each dimension will be discussed briefly based on the study findings.

5.1.1 Qualitative Results Discussion

The qualitative incorporation can aid researchers realize the study participants’ feelings and views addressing how and why they addressed the quantitative questions (Sutton & Austin, 2015). In this research the qualitative research applied sequentially in the Delphi study and the open-ended question during data collection.

First the instrument dimensionality and hierarchy were influenced by confirmatory calls with the experts panel for the structure and items validations. The communication findings captured the experts’ concerns and led to third-round consent after attending to their adjustments. One of the anticipated dimensions was accessibility, a main concern in all massive gathering events and from the retrieved insights accessibility should be a subdimension or questions under HSQ dimensions. Another direction aided the introduction of a new factor digitalization that represents the harness of technology within the provided services. Digitalization was an anticipated dimension based on literature in electronic services assessments. The discussion led to avoidance of technical aspects of the e services and to focus on the availability and adequacy of such services in each HSQ dimension. In line with the literature the experts also attended to redundancy between empathy and responsiveness questions and clarity of questions that added to the robustness of the research instrument.
Next, is the open-ended question tailed the research instrument with a relatively limited responses pointed to the HSQ dimensions transportation and hospitality challenges and outreached the digitalization element limitations in general and in the pre-Hajj registration process. The Hajj season addressed in this study (2022) introduced a portal for selection and registration processes directly through the ministry of Hajj and Umrah and Hajj tourism agencies were excluded from the process. The scope of this research did not include the registration services and it might be an opportunity for further research as an essential element in HSQ assessment. According to Darfoon (2013) research findings transportation service in Hajj is the most important service and there is space for improvement in this area. According to the conducted research around 31% of the additional comments were transportation concerns and 25 % were related to IT limitations. As suggested by the framework, the use of information technology can mitigate challenges within Hajj and improve services management, particularly intense services like transportation that will always be a challenge for any massive gathering event.

5.1.2 Quantitative Results Discussion

The service quality performance mean score for each HSQ dimension was represented in chapter four followed by PLS-SEM multivariate technique to model the effects of the study variables. The first step in PLS-SEM modeling was fulfilling the measurement model reliability and validity followed by the structural model to realize the hypothesized effects of each HSQ dimension on the Hajj overall satisfaction and the willingness to extend the visit to further heritage programs. Each construct in the model will be discussed briefly in the following subsections.

5.1.2.1 Hospitality

The hospitality dimension in this study joined the accommodation and food services since those services are selected by pilgrims or their country Hajj delegation. As previously discussed in the literature
review, the Smith (1992) tourism continuum holds hospitality dimension activities around religious tourism where the pilgrims control the activities prior to participation in the event. The study data is limited to season 2022 where the Hajj tourism agencies were not involved in the processes and the Hajj officials experienced a direct assignment of pilgrims’ services through Motawif portal. The Hospitality service quality performance mean score was 3.68, the fourth highest among the HSQ dimensions showing strength in the tangible aspects of hospitality and weakness within the digitalization aspects of the service. The hospitality dimension as a latent variable in the PLS-SEM structural model showed positive impact on Hajj overall satisfaction with significant path coefficient ($\beta = 0.214$, $t = 4.21$, $p = 0.00$). On the other hand, the hospitality latent variable has no significant impact on the willingness to extend manifest variable.

5.1.2.2 Guidance

The guidance dimension responsible for any informative support within the Hajj journey either religious or legislative. The first-time participants have a higher chance to perceive guidance services, while the pilgrims with repeated experience will include a cognitive comparison between the post pandemic and prior pandemic Hajj experience. The results revealed that 32.2 % of the study sample participated more than once and the guidance with local guides offered by Hajj tourism agencies is not offered due to facilitative changes to avoid complaints from tourism agencies in services fulfilment. In addition, the ministry of Hajj initiated packages and experiencing how to optimize the Hajj pilgrimage and reach pilgrims satisfaction. It was observed from the conducted literature review that researchers preferred in Hajj service quality to include only first-time participant, if possible, to avoid the effect of the experience variation. The service quality performance mean score in guidance dimension showed Transportation, the lowest score among the HSQ dimensions with strength in some of the tangible aspects of the service and weakness in the empathy and digitalization aspects of the service. As a latent
variable guidance in the PLS-SEM structural model showed positive impact on Hajj overall satisfaction with significant path coefficient ($\beta =0.181$, $t =3.18$, $p = 0.001$) and has no significant impact on the willingness to extend variable.

5.1.2.3 Transportation

The transportation dimension covers an array of services from the port of entry to the departure in Hajj pilgrimage excluding the airlines that was included in some of the studies in literature. Comes to mind the challenging nature of massive gatherings in confined provinces of the pilgrimage and the first post pandemic season 2022 the numbers of participants around a million. This participation limitation allowed the Hajj facilitators to execute an exceptional crowd management plan for the first season after the pandemic to ensure the safety of the pilgrims. The transportation in Hajj is the backbone of the crowd management plan and deploy trains and buses. As expected, the transportation services are challenging in any similar settings and the service quality performance mean scored 3.35 lurking behind guidance dimension. The tangible aspects of the service showed the highest scores while the assurance, responsiveness, and digitalization were the weaknesses of the services. As a latent variable, transportation showed significant impact on overall satisfaction with ($\beta =0.17$, $t =3.72$, $p = 0.000$) and with no significant impact on the willingness to extend.

5.1.2.4 Healthcare

The healthcare dimension includes all the medical services offered in Hajj pilgrimage and it took considerable consideration in post pandemic season. The full vaccination against COVID-19 and other immunizations with valid Polymerase Chain Reaction PCR and age restriction up to 65 years old. With that been said, the participants are mostly healthy and followed strict health precautions as part of the pandemic global awareness. The study sample showed 74.5% below the age of 50 and 20.1 % below 60
and mostly when participants are healthy and don’t experience the service, they tend to score neutral responses. Even though the healthcare service quality performance mean scored, 3.83, the highest among the HSQ dimensions with strength in tangible and assurance aspects of the service and weakness within the digitalization deployment of the service. As a latent exogenous variable, the healthcare showed a positive significant impact on Hajj overall satisfaction with significant path coefficient ($\beta = 0.090$, $t = 2.12$, $p = 0.017$) and with no supported effect on the willingness to extend the visit endogenous variable. Those results reflected a great attention to various medical services in line with the prioritized wellbeing of pilgrims.

5.1.2.5 Safety and Security

Saudi Arabia declares the success of Hajj season when the pilgrims fulfil the pilgrimage rites safe and secure from any health risks of any sort. This declaration tides to the successful implementation of each stakeholder plan under the supreme committee of Hajj. The safety and security dimension in this research includes the teams who deploy the crowd management plan from point zero to the last milestone in the event. This dimension falls in the pilgrimage area of the tourism continuum where there are intense activities requiring planned stewardship to avoid stampedes and ensure the wellbeing of the pilgrims. Another vital factor is to keep the order and harmony between pilgrims despite their differences and keep the event a resemblance of peace and unity and clear of any conflicts of any sort. The service quality performance mean score for this dimension was 3.73, the second highest among HSQ dimensions with strength in the assurance aspect of the service and weakness within the digitalization and some of the tangibles of the service. As a latent variable the safety and security showed the highest
significant impact on Hajj overall satisfaction and like its predecessors has no significant impact on the willingness to extend the visit. The significant path coefficients were ($\beta = 0.24$, $t = 4.92$, $p = 0.00$) and they indicate that the pilgrims have an installed confidence in the crowd management plan execution.

5.1.2.6 Hajj Facilities

The facilities in Hajj dimension cover an array of rites focal points in Makkah, Arafah, Mina, and Muzdalifah. It holds sixteen items, and it covers the tangible aspects of those facilities including hygiene and accessibility. The service quality performance mean score for this dimension was 3.72 the third highest and nearly equal to the previous dimension with strength in the hygiene of the Grand Mosque and the modernity of equipment with visually appealing facilities. The digitalization aspect of the dimension is still the weakest and that might be addressed in an upcoming subsection. In the initial measurement model one of the items from Hajj facilities is eliminated for cross loading and the revised structural model showed a significant path coefficient ($\beta = 0.186$, $t = 2.90$, $p = 0.002$) on Hajj overall satisfaction and a significant path coefficient ($\beta = 0.418$, $t = 2.56$, $p = 0.005$) on willingness to extend the visit.

5.1.2.7 Hajj Overall Satisfaction

To begin with the overall satisfaction item in the research instrument showed a mean score of 3.7 which indicates an agreeable level of satisfaction among the study sample. The Hajj overall satisfaction variable is the first of the two manifest variables in the study PLS-SEM model and from the path coefficients it did not show a significant moderator effect on the other manifest variable willingness to extend. Results showed that the explanatory power $R$-squared that 90.8 % proportion of variance in Hajj overall satisfaction variable explained by hospitality, guidance, transportation, healthcare, safety and security, and Hajj facilities. This explanatory power raised to 91.2 % by the significant effect of
participants’ income control variable on the Hajj overall satisfaction. Indeed, there are other intellectual factors or physical factors that might contribute to the pilgrims’ satisfaction that require more research.

5.1.2.8 Willingness to Extend Visit

As for their willingness to extend the visit to other heritage sites or related activities, the participants showed great interest in further activities with a mean score of 4.11. Moving to the multivariate analysis of the PLS-SEM model, this manifest variable has not been significantly impacted by the latent variables of the study except Hajj facilities that showed a significant impact on willingness to extend visits. It was observed that the latent variables have a significant impact on this manifest variable combined. The explanatory power R-squared variance proportion was 28% explained by hospitality, guidance, transportation, healthcare, safety and security, and Hajj facilities and reach 32.8% with the consideration of significant control variables gender and Hajj package. This endogenous variable was represented by a single item in the research instrument and is not three items or more as suggested by Henseler et al. (2009) for a better predictor relevance.

5.2 Study Implications

The study identified key dimensions namely hospitality, guidance, transportation, healthcare, safety and security, and facilities influencing Hajj overall satisfaction and can be applied to similar massive gathering events with similar settings. Those HSQ dimensions and the framework can be a launching pad for further research in upcoming seasons with space for modifications to address the research scope.

The framework showed the capability to explore the efficiency of the crowd management plan the backbone of Hajj and how the safety precautions contribute to the success of the Hajj season. Such research implications could include suggestions to optimize the operations in Hajj and emergency
response in crowd management. Other implications are the identified gaps in technology deployment within the HSQ dimensions and how digitization advancements improve communication, information dissemination, and service monitoring and delivery.

The research instrument scope did not directly approach the regulatory aspects and registration processes in Hajj that were served through an online platform/application in post pandemic seasons, giving an opportunity to the pilgrims to interact with one stop Hajj package registration service. Implications could include recommendations for changes to the digital ecosystem governance structures and regulations to be part of all HSQ dimensions and to improve service quality. An integral part of service quality is the service delivery processes and that open the door for Hajj service providers training programs, capacity building initiatives, and continuous professional development to connect the stakeholders and raise the qualification level of the Hajj workforce.

KSA has a long experience with disease prevention strategies and emergency response protocols from a cumulative Hajj experience and the kingdom approach in handling COVID-19 pandemic was a global benchmark. This study touched on the first post pandemic Hajj season and both the safety and security, and healthcare dimensions showed the highest impact on pilgrims’ satisfaction implying the importance of health and safety measures as key success factors.

Hajj pilgrimage is cosmopolitan in nature and host pilgrims from more than 185 countries. With that been said the cultural diversity realization could contribute to a positive pilgrimage experience with inclusive services accommodating various cultural backgrounds. This cultural diversity understanding is an integral part of Tiwafah establishments’ role as addressed previously in chapter two. In Hajj all local community levels have a level of engagement in the pilgrimage and there is space for communities to adopt responsibilities for cultural awareness. In this research the cultural effect was considered in
sampling as suggested in literature and passing down this cultural sensitivity to be a considerable part of services structure and delivery.

The framework showed the potential of assessing the impact of transportation dimension and hygiene within the Hajj facilities dimension. Such capability of the developed framework can be linked to the objectives of the Saudi Green Initiative (SGI), a part of the Vision 2030 objectives and environmental sustainability. Suggestions may include sustainable practices, waste management, and green initiatives to reduce the environmental impact of the pilgrimage. Environmental innovations could supply the hygiene of facilities and provide sustainable solutions for the seasonal pilgrimage. In addition, green initiative can support transportation with efficient projects align with global climate targets and minimize the load on coaches and trains.

5.3 Study Limitations and Future Directions

The study provided a framework that can assess the quality of Hajj services considering the DARP objectives within Vision 2030. To be specific the study touch based the service quality improvement objective by a framework with HSQ dimensions and their impact on overall satisfaction. The pilgrims showed an agreeable level of overall satisfaction significantly impacted by the framework dimensions. The second objective was to enrich the pilgrims’ spiritual and cultural experience that was explored in the framework by realizing their willingness to extend the visit. The pilgrims showed high agreement in their willingness to extend. The third objective to facilitate more pilgrims to attend Hajj with ease of access was addressed by questions about accessibility to Hajj facilities only. This research did not cover the realization of number of pilgrims to increase the participation opportunities safely. Further research in depth to address accessibility with sufficient representable sample is a vacancy that needs to be filled in the future. There are more aspects to realize the facilitation of more pilgrims like
capacity in delivered services that was not addressed. More research in the future is recommended with higher statistical power and a more specific framework to realize optimal accessibility and capacity in HSQ.

This study explored HSQ in a post pandemic period which has significantly impacted various operational settings globally including the experience with several emerged logistics, regulations, and service in Hajj. As a result, Hajj seasons 2020 and 2021 were limited to be performed by pilgrims residing in Saudi Arabia and that has limited the access to this group of participants. The season 2022 was the first post pandemic season welcoming participants from abroad. Nonetheless, it was declared an exceptional season with limited attendees due to the post pandemic precautions. This situation required the sampling technique to follow the path of convenience judgmental sampling supplemented by snowball sampling to reach the research sophisticated audience. This approach led to limited responses below the targeted sample, and it was only confined to season 2022 where the participation in the study was voluntary in nature. This voluntary status might limit the encouragement of participation in such a study with a sophisticated survey tool. This limitation can be mitigated in the future by collaborative efforts of research teams’ commitment and sufficient grants to aid the research quality and quantity of responses. With enough data, more complex models can hold each subdimension as a latent variable.

Hajj, as an annual pilgrimage, holds variety of stakeholders and this study reached one side of the spectrum of the pilgrimage only. Nonetheless, due to the massive number of stakeholders included, this study is macro in nature. Further research can take advantage of Ministry of Hajj and Umrah initiatives and conferences to capture a holistic insight into the services provided with access to data from different angles. Each stakeholder is a main service provider in the studied HSQ dimensions, and some might hold various service providers. Micro scale research can tackle in depth one of the dimensions with specific details about the quality of Hajj services. For instance, the framework
dimensions of transportation and guidance, which showed less effect on satisfaction, could be taken separately in further research.

The current study was limited to US pilgrims for the multicultural nature of this unique segment of pilgrims, but comparative behavioral studies take the study framework further with different languages to reach different groups of pilgrims. The pilgrim’s satisfaction variation is not only caused by the HSQ dimensions, but there are also elements like the spiritual experience or the sense of accomplishment that were not incorporated in this research and leave the door open for further investigation.

5.4 Conclusion

The outcomes of this study could be added to the quality management efforts monitored by the Ministry of Hajj and Umrah from one side and an endeavor for sequential studies. The study provided a framework that can assess the quality of Hajj services considering two of PEP objectives within Vision 2030. The suggested set of HSQ dimensions had a positive impact on the pilgrimage overall satisfaction. These dimensions, ordered by their highest impact on level of satisfaction, are safety and security, hospitality, Hajj facilities, guidance, transportation, and healthcare. Among those dimensions, only Hajj facilities showed a positive impact on pilgrims’ willingness to extend visits to heritage sites. There was no mediator significant effect found between the study manifest variables. The explanatory power of those variables is statistically significant and supported by a significant predictive relevance. The demographics captured by the research instrument acted as control variables in the model and did not show changes in the study hypothesis testing. The limited sample size was the main challenge in the study, and it could suit the exploratory nature of the research and further attempts will hopefully build a
deep understanding of the nature of the pilgrimage and add more insights to the multifaced nature of its services.
APPENDIX A: IRB APPROVAL
May 12, 2022

Dear Majd Alshaibi:

On 5/12/2022, the IRB determined the following submission to be human subjects research that is exempt from regulation:

<table>
<thead>
<tr>
<th>Type of Review</th>
<th>Initial Study, Initial Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Exploring Service Quality and Satisfaction among US Haj Pilgrims in Compliance with Vision 2030 Objectives</td>
</tr>
<tr>
<td>Investigator</td>
<td>Majd Alshaibi</td>
</tr>
<tr>
<td>IRB ID</td>
<td>STUDY00004081</td>
</tr>
<tr>
<td>Funding</td>
<td>None</td>
</tr>
<tr>
<td>Grant ID</td>
<td>None</td>
</tr>
<tr>
<td>Documents Reviewed</td>
<td>HRP-251, Category: Faculty Research Approval; HRP-254-FORM Explanation of Research Majd Alshaibi.pdf, Category: Consent Form; HRP-255, Category: IRB Protocol; Research Contact Letter .docx, Category: Recruitment Materials; Research Instrument , Category: Survey / Questionnaire; Survey Invitation Email Majd Alshaibi .docx, Category: Recruitment Materials</td>
</tr>
</tbody>
</table>

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-100), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

Jonathar Coker
Designated Reviewer
APPENDIX B: RESEARCH SURVEY
Survey

Exploring Service Quality and Satisfaction among US Hajj Pilgrims in Compliance with Vision 2030 Objectives Survey

Dear Respondent,

This survey study is part of a Ph D dissertation at University of Central Florida to explore service quality and satisfaction among US Hajj pilgrims. This research will aid Saudi Vision 2030 Hajj and Umrah program objectives and directions to the realization of the program objectives. By taking part in this survey, you will be able to share your experience in Hajj to assess the status of services and give directions to future studies and shed light on areas that require more attention.

This survey consists of ten sections with a total of 83 items. The first six sections are comprehensive six Hajj service quality dimensions represent the whole spectrum of service providers and use 71 “level of agreement” Likert scale of 1-5 (where 1= Strongly Disagree and 5= Strongly Agree). Section seven is an experience overall satisfaction question followed by section eight that consists of a question about the willingness of participation in future extended heritage events after the completion of Hajj. Both sections follow Likert scale 1-5 level of agreement questions. Section nine contains nine demographic questions combining both selection and open-ended questions. The last section is an optional open-ended question to allow the participants to share any additional information and comments about their experience. Your thoughtful insights and participation are highly appreciated.

Your participation in this study is voluntary and you may choose not to participate. If you decide to participate in this survey, you can withdraw at any time with no commitment. The procedure includes an online survey that will take approximately 10 minutes and responses are confidential and don’t involve any identifying data such as names, emails, or IPs.

If you have any additional inquiries about the survey, please feel free to contact me. Thank you in advance for your valuable participation,

Majid Alshaibi,
Principal Investigator
Doctoral Candidate
Industrial Engineering & Management Systems
University of Central Florida
Email: m_alshaibi@knights.ucf.edu
Please rate the following in terms of how much you agree or disagree with each statement.

<table>
<thead>
<tr>
<th>Hajj Service Quality Dimension</th>
<th>Questions</th>
<th>Question Original Dimension</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hospitality</td>
<td>1. Hajj hospitality providers have modern equipment and visually appealing facilities.</td>
<td>Tangibles</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Accommodation and food services provided to pilgrims.</td>
<td>2. Hajj hospitality providers have professionally dressed staff.</td>
<td>Tangibles</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>3. Hajj hospitality providers have sufficient information means (screens, signs, and materials).</td>
<td>Tangibles</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>4. Hajj hospitality providers provide clean, healthy, and comfortable services as promised.</td>
<td>Tangibles</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>5. Hajj hospitality providers understand pilgrims’ needs and have the knowledge to answer their questions.</td>
<td>Assurance</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td>6. Hajj hospitality providers are continuously courteous to pilgrims, instill confidence in pilgrims, and let them feel safe.</td>
<td>Assurance</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>7. Hajj hospitality providers provide services promptly with sincere interest in solving the matter from the first time as promised.</td>
<td>Reliability</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>8. Hajj hospitality providers tell when the service will be performed promptly with personal attention to help the pilgrims and never busy to respond to requests.</td>
<td>Responsive ness</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>9. Hajj hospitality providers give individual attention and have the pilgrims’ interest in mind with convenient hours of operations available.</td>
<td>Empathy</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>10. Hajj hospitality is offered using sufficient digital services (e.g., mobile application and digital bracelet).</td>
<td>Digitalization</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>11. I am satisfied with hospitality services offered during Hajj.</td>
<td>Satisfaction</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>

**2. Guidance**

All guidance services offered in Hajj journey including regulatory instructions,

| 12. Hajj guides have modern equipment and visually appealing facilities. | Tangibles | ○ | ○ | ○ | ○ | ○ |
| 13. Hajj guides have professionally dressed staff. | Tangibles | ○ | ○ | ○ | ○ | ○ |
| 14. Hajj guides have sufficient information means (screens, signs, and materials). | Tangibles | ○ | ○ | ○ | ○ | ○ |
| 15. Hajj guides provide helpful services as needed. | Tangibles | ○ | ○ | ○ | ○ | ○ |
| 16. Hajj guides are easy to contact, understand pilgrims’ needs, and have the knowledge to answer their questions. | Assurance | ☐ ☐ ☐ ☐ ☐ |
| 17. Hajj guides are continuously courteous to pilgrims, instill confidence in pilgrims, and let them feel safe. | Assurance | ☐ ☐ ☐ ☐ ☐ |
| 18. Hajj guides provide services promptly with sincere interest in solving the matter from the first time. | Reliability | ☐ ☐ ☐ ☐ ☐ |
| 19. Hajj guides tell when the service will be performed promptly with personal attention to help the pilgrims and never busy to respond to requests. | Responsive ness | ☐ ☐ ☐ ☐ ☐ |
| 20. Hajj guides give individual attention and have the pilgrims’ interest in mind with convenient hours of operations available. | Empathy | ☐ ☐ ☐ ☐ ☐ |
| 21. Hajj guidance is offered using sufficient digital services (e.g., mobile application and digital bracelet). | Digitalization | ☐ ☐ ☐ ☐ ☐ |
| 22. I am satisfied with guidance services offered during Hajj. | Satisfaction | ☐ ☐ ☐ ☐ ☐ |

### Transportation

| 23. Hajj transportation has modern equipment and visually appealing facilities. | Tangibles | ☐ ☐ ☐ ☐ ☐ |
| 24. Hajj transportation has professionally dressed staff. | Tangibles | ☐ ☐ ☐ ☐ ☐ |
Various transportation means used to move from ports of entry and perform rituals including trains, buses, and monorails.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>Hajj transportation has sufficient information means (screens, signs, and materials).</td>
</tr>
<tr>
<td>26.</td>
<td>Hajj transportation provides sufficient and comfortable services as promised.</td>
</tr>
<tr>
<td>27.</td>
<td>Hajj transportation providers are easy to contact, understand pilgrims’ needs, and have the knowledge to answer their questions.</td>
</tr>
<tr>
<td>28.</td>
<td>Hajj transportation are continuously courteous to pilgrims, instill confidence in pilgrims, and let them feel safe.</td>
</tr>
<tr>
<td>29.</td>
<td>Hajj transportation provides services promptly with sincere interest in solving the matter from the first time as promised.</td>
</tr>
<tr>
<td>30.</td>
<td>Hajj transportation tells when the service will be performed promptly with personal attention to help the pilgrims and never busy to respond to requests.</td>
</tr>
<tr>
<td>31.</td>
<td>Hajj transportation give individual attention and have the pilgrims’ interest in mind with convenient hours of operations available.</td>
</tr>
</tbody>
</table>
32. Hajj transportation is offered using sufficient digital services (e.g., mobile application and digital bracelet).

33. I am satisfied with transportation services offered during Hajj.

### 4. Hajj Facilities

Hajj facilities including include port of entry, sanctuary in Makkah (Grand Mosque), Mina camps, Jamrat bridge, Arafat camps, and Muzdalifa rest station.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Satisfaction</th>
<th>Tangibles</th>
<th>Accessibility (Hygiene)</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.</td>
<td>Hajj facilities have modern equipment and visually appealing facilities.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>35.</td>
<td>Hajj facilities have professionally dressed staff.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>36.</td>
<td>Hajj facilities have sufficient information means (screens, signs, and materials).</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>37.</td>
<td>Hajj facilities are organized to ease performing various activities.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>38.</td>
<td>Reception/farewelling port facilities are reasonably accessible.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>39.</td>
<td>Reception/farewelling port facilities are regularly clean.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>40.</td>
<td>Grand Mosque (Haram) facilities are reasonably accessible.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>41.</td>
<td>Grand Mosque (Haram) facilities are regularly clean.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>42.</td>
<td>Mina facilities are reasonably accessible.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>43.</td>
<td>Mina facilities are regularly clean.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>44.</td>
<td>Muzdalifah facilities are reasonably accessible and clean.</td>
<td>Accessibility</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>45.</td>
<td>Muzdalifah facilities are regularly clean.</td>
<td>Tangibles (Hygiene)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>46.</td>
<td>Arafat facilities are reasonably accessible.</td>
<td>Accessibility</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>47.</td>
<td>Arafat facilities are regularly clean.</td>
<td>Tangibles (Hygiene)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>48.</td>
<td>Hajj facilities are run using sufficient digital services (e.g., mobile application and digital bracelet).</td>
<td>Digitalization</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>49.</td>
<td>I am satisfied with Hajj facilities services offered during Hajj.</td>
<td>Satisfaction</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**5. Safety & Security**

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>50.</td>
<td>Hajj Safety &amp; Security have modern equipment and visually appealing facilities.</td>
<td>Tangibles</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>51.</td>
<td>Hajj Safety &amp; Security have professionally dressed staff.</td>
<td>Tangibles</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>52.</td>
<td>Hajj Safety &amp; Security have sufficient information means (screens, signs, and materials).</td>
<td>Tangibles</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>53.</td>
<td>Hajj Safety &amp; Security are organized to safely manage crowds in Hajj as expected.</td>
<td>Tangibles</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>54.</td>
<td>Hajj Safety &amp; Security staff are easy to contact, understand pilgrims’ needs, and have the knowledge to answer their questions.</td>
<td>Assurance</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55. Hajj Safety &amp; Security staff are continuously courteous to pilgrims, instill confidence in pilgrims, and let them feel safe.</td>
<td>Assurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56. Hajj Safety &amp; Security provides services promptly with sincere interest in solving the matter from the first time.</td>
<td>Reliability</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57. Hajj Safety &amp; Security tells when the service will be performed promptly with personal attention to help the pilgrims and never busy to respond to requests.</td>
<td>Responsiveness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58. Hajj Safety &amp; Security give individual attention and have the pilgrims’ interest in mind with convenient hours of operations available.</td>
<td>Empathy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59. Hajj Safety &amp; Security services are offered using sufficient digital services (e.g., mobile application and digital bracelet).</td>
<td>Digitalization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60. I am satisfied with safety &amp; security services offered during Hajj.</td>
<td>Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>6. Healthcare</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>61. Hajj Healthcare have modern equipment and visually appealing facilities.</td>
<td>Tangibles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>62. Hajj Healthcare have professionally dressed staff.</td>
<td>Tangibles</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All medical measures and units provided from the point of entry and through the pilgrimage activities.</td>
<td>63. Hajj Healthcare have sufficient information means (screens, signs, and materials).</td>
<td>Tangibles</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>64. Hajj Healthcare providers are organized to treat any health emergencies in Hajj as expected.</td>
<td>Tangibles</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>65. Hajj Healthcare staff are easy to contact, understand pilgrims’ needs, and have the knowledge to answer their questions.</td>
<td>Assurance</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>66. Hajj Healthcare staff are continuously courteous to pilgrims, instill confidence in pilgrims, and let them feel safe.</td>
<td>Assurance</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>67. Hajj Healthcare provides services promptly with sincere interest in solving the matter from the first time.</td>
<td>Reliability</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>68. Hajj Healthcare tells when the service will be performed promptly with personal attention to help the pilgrims and never busy to respond to requests.</td>
<td>Responsive</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>69. Hajj Healthcare providers give individual attention and have the pilgrims’ interest in mind with convenient hours of operations available.</td>
<td>Empathy</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
70. Hajj Healthcare is offered using sufficient digital services (e.g., mobile application and digital bracelet).

71. I am satisfied with healthcare services offered during Hajj.

7. Pilgrims’ Overall Satisfaction

72. I am satisfied with the overall Hajj experience and the services provided.

8. Willingness to extend visits to Islamic heritage sites

73. I am willing to participate in extended visits programs associated with Hajj experience to Islamic heritage sites or related events.

9. Demographics.

All gathered information will be strictly confidential and to be used for the purpose of the study.

74. Resident of which city and state and in which Hajj season did you participate? City .......... State

.......................... Hajj Season 2020 ○ 2021 ○ 2022 ○

75. Gender: ○ Male ○ Female

76. Age range: ○ 18-30 ○ 31-40 ○ 41-50 ○ 51-60 ○ 61 and more
77. Educational level: ○ Less than high school ○ High school ○ Associate degree/Technical school ○ College ○ Postgraduate education

78. Participation status: ○ Alone ○ With family/friends

79. Household Income range: ○ Under $30,000 ○ $30,000 – $40,000 ○ $40,000 – $50,000 ○ $50,000 – $60,000 ○ $60,000 or more

80. Number of Hajj pilgrimage participation: ○ First time ○ More than once

81. Hajj agency and package name: Agency ................................... Package ...........................................

82. Hajj package cost range: $6,000 – $7,000 ○ $8,000 – $9,000 ○ $10,000 – $11,000 ○ $12,000 – $13,000 ○ More than $13,000 ○

10. Additional comments (optional)

83. Any additional comments or suggestions to improve Hajj services delivery that you would like to share?
LIST OF REFERENCES


Al-Abdali, A. (1996). An investigation into the overall impact of the season of Hajj on the economy of Makkah with special investigation into The trade of consumer goods. University of Wales Trinity Saint David,


192


198


Nyeck, S., Morales, M., Ladhari, R., & Pons, F. (2002). 10 years of service quality measurement: reviewing the use of the SERVQUAL instrument. The bi-annual academic publication of Universidad ESAN, 7(13).


Othman, F. M. (2003). A system of mobile service units for the large-scale event industry: an implementation for the Hajj, the pilgrimage to Makkah, Saudi Arabia. Loughborough University,


SHUKRI, A. N. M., SET, K., & YAAKOP, A. Y. (2019). MUSLIM TRAVELLERS’PERCEPTION ON QUALITY OF SERVICE BY UMRAH AND HAJJ TRAVEL AGENCIES IN MALAYSIA.


