



JIMMA UNIVERSITY
JIMMA INSTITUTE OF TECHNOLOGY
FACULTY OF COMPUTING AND INFORMATICS
INFORMATION SCIENCE DEPARTMENT

INVESTIGATING CHALLENGES, OPPORTUNITIES AND DIGITAL
TECHNOLOGIES IN THE DIGITAL TRANSFORMATION OF TOURISM
INDUSTRY: THE CASE OF SOUTH WEST ETHIOPIA

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JIMMA, ETHIOPIA

NOVEMBER, 2022

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DECLARATION

I declare that this thesis work entitled “Investigating Challenges, Opportunities and Digital Technologies in the Digital Transformation of Tourism Industry: The Case of South West Ethiopia” has been carried out by me in the Faculty of Computing and Informatics, Jimma Institute of Technology, Jimma University. Any sources of materials used in this thesis have been acknowledged, and a list of references provided. This thesis work has not been presented for another degree and diploma in any other universities.

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This is a thesis work entitled “Investigating Challenges, Opportunities and Digital Technologies in the Digital Transformation of Tourism Industry: The Case of South West Ethiopia” as partial fulfillment for the Degree of Master of Science in Information and Knowledge Management in the Information Science Program, Faculty of Computing and Informatics, Jimma Institute of Technology, Jimma University.

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ACRONYMS AND ABBREVIATIONS

AI: Artificial Intelligence

CGI: Computer Generated Imagery

ICT: Information Communication Technology

IOT: Internet of Things

MOCT: Ministry of Culture & Tourism

NFC: Near Filed Communication

RFID: Road Frequency Identification

OA: Online Platform

OECD: Organization for Economic Coordination

OTA: Online Trade Agency

UNESCO: United Nation Educational Scientific & Cultural Organization

WTO: World Trade Organization

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ABSTRACT

Tourism is a social, cultural, and economic phenomenon that entails the movement of people to countries or places outside their usual environment for personal or business purposes. The tourism industry has been digitalized by various trends, including mobile integration, artificial intelligence, chatbots, and the integration of the Internet of Things. Digitalization facilitated a series of innovations that contributed to the reshaping of tourism as an industry. This study aims to investigate the challenges, opportunities, and digital technologies in the digital transformation of the tourism industry in south-west Ethiopia. A combination of quantitative and qualitative research approaches with a cross-sectional research design is employed to conduct the study. In order to collect the required data, questionnaires were distributed to utility consumers of tourism services and products, tourism service and product providers, and tourism experts in south-west Ethiopia. Based on the responses obtained, this research thus reveals that tourism actors agreed that a lack of knowledge, a legal framework, or environmental or external infrastructure is perceived by them as a deterministic challenge when it comes to digitalization in the tourism industry in south-west Ethiopia. A detailed discussion about opportunities that were identified by experts within the field is presented with respect to the survey findings in south-west Ethiopia. This research thus reveals that tourism actors agreed that they perceive high-quality service, high revenues, and big data generation as major opportunities when it comes to digitalization in the tourism industry in the study area. In the study, the identified dependent variable, i.e., the digital future of tourism, and the independent variables, i.e., the online booking system, social media, online reviews, e-banking and payment systems, and artificial intelligence, were assumed to positively influence the digital transformation of the tourism industry in south-west Ethiopia. The study, on the other hand, produces a wide range of results based on multiple linear regression analysis. Based on the findings, it is highly recommended that knowledge creation regarding digitalization occur at local levels, as info sessions and social activism on the benefits of digitalisation could enhance the digital mindset of tourism actors.

CHAPTER ONE

INTRODUCTION

.1. Background of the Study

The process by which technology and data-driven management are transforming our social, economic, and personal systems is known as digitization. The influx of advanced technologies and growing social and economic connectedness are what are driving the use of digital technologies. In the highly globalized tourism industry, digitization has the potential to raise productivity, foster innovation, and provide economic and environmental efficiencies. The tourism industry is significantly impacted by technological improvements. These technological advancements range from business management tools like mobile technology, cloud computing, automation and advanced robotics, block chain, data analytics, and cloud computing, to tools that create cutting-edge travel experiences and products, as well as tools that help with, understand, and connect with markets (OECD, 2017).

Digitization in tourism companies is a long and complicated process. It is related to the cost of implementation. To meet customer expectations, some companies use technology to innovate and provide new products, services and information on their business model to their clients. Other companies use technology to reinvent themselves by improving their processes and the quality of their products. While there is a high level of ignorance and inappropriate use of new technology, digitization in the tourism industry is a lengthy and complex process that is related to implementation costs and meeting customer expectations. Some businesses use technology to innovate and provide new products, services, and information on their business model to their clients. Other companies utilize technology to reinvent themselves by improving their processes and the quality of their goods (Fundacion, 2016).

Digitization deals with information processing, and everything can be converted into information thanks to digitization, which deals with information transfer. Every aspect of human life is impacted by digitization. It permeates almost every domain, has a significant impact on both the economy and modern culture. On the one hand, an increasing number of businesses are heavily utilizing new digital technology (Curran, 2018). The travel and tourism sector is quickly embracing new technologies, particularly the rapidly evolving smartphone applications that make it easy for travelers to find information on a variety of topics, including booking hotels or

flights, learning more about destinations, and figuring out exchange rates. Applications for mobile devices, such as navigation, information search, social networks, etc., support a wide range of functionalities (Dominguez et al., 2015).

According to the most widely used concept in the study of the tourism industry, tourism industry refers to the collection of industries involved in the many human activities involved in the hospitality method is referred to as the tourism industry. Simply described, the tourist sector includes the six components we frequently list: lodging, food, transit, shopping, and entertainment (Yiamjanya & Wongleedee, 2014). Numerous factors that may enhance quality of life, including employment and investment opportunities, tax revenues, lodging services, natural and cultural attractions, festivals, and outdoor recreation opportunities, are thought to be provided by tourism as an economic development tool for the local community (Brida, Disegna, & Osti, 2014). One of the most significant global sectors in recent years is tourism. after years of exploitation and expansion of the tourism sector.

Through the growth of booking systems and global distribution systems, technology has made it easier for tourism enterprises to provide high-quality services to clients at lower rates. Additionally, reservation systems made it possible for tour operators to provide their services to travelers, helping to provide direct services to tourists in a more timely and affordable manner (Molchanova, 2014).

By emphasizing the value of data analytics, integrating technology throughout the company, and restructuring how they operate to give value to customers, digital transformation helps businesses meet the diverse and evolving requirements of their customers. This change should reorient the entire business towards a digital strategy that properly increases customer relationships (Sanchez, 2019).

A variety of e-business models have developed electronic booking platforms for various information intermediaries; electronic booking platforms for various information intermediaries, electronic platforms that integrate different firms in the tourism industry, and a virtual community model that is an Internet platform for contacting tourists have all been built using a range of e-business models. The possibilities offered by digital technologies in the tourism industry illustrate two aspects from both the producer and customer viewpoints.

First of all, adopting the internet to gain advice and expertise, evaluate and choose a tourist destination, and reduce the cost of using tourist services all save the consumer time and effort. On the other hand, digitization makes tourism service providers more competitive in the market for tourist goods (Cherevichko & Temyakova, 2019).

Digital technologies have widened the networks of distribution platforms, such as social networks, portals for tourist information, and platforms for local use, which has had a big impact on the expansion of the tourism industry. The majority of foreign nations rely on digital platforms for the growth of tourism since they are seen as a tool for appropriate interaction between various tourism actors. The platform compiles data on travel, bookings, and various providers (Skoultos & Kontis, 2019). In tourism, decision-making is linked to broad, dynamic information searches, according to Buhalis et al. (2013). Customers gather information not only to make decisions but also to compare the decisions they have already made. As a result, as information is widely used in the tourism industry, there has been a close interaction between information, communication, and technology (ICT) and tourism.

The similarity between digitization, digitalization and digital technology is that digitization refers to creating a digital representation of physical objects or attributes. For instance, we scan a paper document and save it as a digital document (e.g., PDF). In other words, digitization is about converting something non-digital into a digital representation or artifact. Computerized systems can then use it for various use cases. An example from manufacturing would be when a measurement is converted from a manual or mechanical reading to an electronic one. While Digitalization refers to enabling or improving processes by leveraging digital technologies and digitized data. Therefore, digitalization presumes digitization (Mark, 2020).

Digital technology is incorporated into all areas of the business to fundamentally improve efficiency in workflows and create value for customers. Cultural, organizational, and operational changes are implemented through the integration of digital technologies.

Digital platforms are predicted to have an impact on both the financial and non-financial costs of travel, such as the cost of lodging and airfare, the availability of more destinations, the time required to plan a trip, and even the degree of uncertainty encompassing the quality of a potential trip. The impact of digital technologies on economic activity as a whole, rather than just the tourism industry, is examined by Goldfarb and Tucker (2019), who make a distinction between the five different costs that these technologies help to lower: search prices; replication costs; transportation tracking costs; and verification costs. The impact of digital technology, on the other hand, on lowering the other three forms of cost search, tracking, and verification affects the market for tourism services directly. For the most part, cost reductions in those three areas would translate into lower prices for tourism services (Goldfarb and Tucker 2019).

Ethiopia has so many places to visit that are natural, religious, historical, and cultural, but the use of tourism as a component of the national economy dates back fifty years. When taking into account the economic impact that tourism has on Ethiopia, the first tourism bureau was set up in 1962 during the imperial administration (Ali, 2017). The sector's contribution was greatly decreased during the military administration, but starting in the 1990s, tourism increased. Nine of Ethiopia's intriguing tourism destinations are UNESCO world heritage sites (Ali, 2017). Digital technology has made it simpler to look for a tour, a travel agent, assess its benefits and drawbacks, and compare price ranges independently. So, regardless of the tour's geographic location, the consumer has the option to review it at any moment.

As a result, the purpose of this study is to investigate the challenges, opportunities, and role of digital technologies in the digital transformation of the tourism industry in South West Ethiopia's tourism industry's digital transformation.

1.2. Statement of the Problem

The utilization of tourist-related goods and services, such as accommodations, infrastructure, attractions, and support services, together forms the industry of tourism. One of the major reasons why tourists travel to a place is because of its tourism attractions, which are a subset of its essential tourism resources (Melese & Belda, 2021). Additionally, there is a lack of marketing to draw tourists and an absence of marketing of tourist attractions once visitors are in the country. The tourism infrastructure is still in its infancy. Tourist products are poorly maintained. Access to tourist products is difficult and can be unreasonably expensive (Bryan, 2014).

Tourism plays a significant role in facilitating community development through business mentoring and educational opportunities that contribute to local communities by increasing skill and knowledge in those communities as well as improving the community's economic level (Bushell&Eagles, 2007). For Ethiopia, however, there are many challenges that need to be addressed. Some of them include the lack of effective marketing, limited access to financing, and inadequate development and implementation of strategies, as well as digitization. Some stakeholders have gone as far as criticizing the failures and limitations of Tourism Ethiopia for its inability to create any significant change.

Many researchers have suggested that numerous challenges that affect the development of tourism, such as effective cooperation problems among stakeholders and tourism product diversification, (Aregu, 2016). Tourism infrastructures such as tourism accommodation facilities, transportation systems, road quality, road density, transport services, water supply, electricity, and communication are others determinants of tourism development (Imikan, 2012). Moreover, tourism development is highly affected by the quality of human resources that are employed in tourism areas (Rova, 2014). The important factor that is very much related to this study is ICT, which is a key hindrance for the growth and strengthening of local tourism as well as for the development of a destination economy as a whole (Nikolic, 2018). Tourism marketing is a fundamental challenge for tourism development (Milad & Mohammad, 2016).

The possibilities provided by digital innovations in the tourism industry show two characteristics from both the producer and customer perspectives. First of all utilizing the internet to acquire consulting services, evaluate and pick a tourist destination, and reduce the cost of using tourist

services all save the consumer time and effort. On the other side, digitalization makes businesses more competitive in the market for tourism services for producers of tourist items (Cherevichko, 2019). The connectivity of clients to both businesses and other consumers as well as to businesses is another prominent feature brought about by digitalization. Due to advancements in digital technology, consumers are now more likely to act as product or service advocates. The Internet has compelled the corporate world to exchange more than just information but also resources and infrastructure that lead to transparency (Della Corte et. al. 2016). Lack of technical knowledge among the users is one of the most common challenges in the tourism sector. Those who do not have knowledge about using the technology still depend on the classical booking method. Non availability of required digital technologies infrastructure is another major issue, and a lack of funds has been a barrier to innovation for a long time (Ani, 2019).

As a result, the purpose of this research is to investigate the problems, opportunities, and impact of digital technologies in the digital transformation of the tourism industry in South West Ethiopia. In south-west Ethiopia, questionnaires were issued to customers of tourism services and goods, tourism service and product providers, and tourism specialists in order to gather information about the difficulties, opportunities, and factors shaping the digital future of tourism.

1.3. Research Questions

- What are the challenges for the digital transformation of tourism industry in South West Ethiopia?
- What are the opportunities in the digital transformation of tourism industry in South West Ethiopia?
- To what digital technologies has impact on the digital transformation of tourism industry in South West Ethiopia?
- To what extent employers of tourism industry accepted a proposed conceptual framework?

1.4. Objectives of the Study

1.4.1. General Objective

The general objective of this research is to investigate the challenges, opportunities, and digital technologies influence in the digital transformation of tourism industry in South West Ethiopia.

1.4.2. Specific Objectives

- To identify the digital technologies that has impact on digital transformation of tourism industry in South West Ethiopia,
- To identify the challenges for the digital transformation of tourism industry in South West Ethiopia,
- To identify the opportunities in the digital transformation of tourism industry in South West Ethiopia,
- To develop a conceptual framework for digital transformation of the tourism industry in South West Ethiopia.

1.5. Significance of the Study

The outcomes of this study afford the tourism industry a unique advantage in a number of ways. A tailored process of communication between travel agencies and consumers, which enables them to preserve customers' loyalty and business profits, boost conversion rates, and raise security levels, exists for the benefit of both the consumer and the provider of tourism services. Using digital technologies makes it possible to provide and receive post-sale support. A destination for tourism offers the chance for the market promotion and sustainable reproduction of a local product. Stable Internet access and the availability of digital technology that allows for online assessments of the benefits and drawbacks of visiting particular nations are crucial components that define the tourism sector.

This study has a significant place in the development of many economic sectors, but in tourism, digital technology plays a crucial role. It will also help policy makers and stake holders to get access to deep information challenges and opportunities of tourism sector. This thesis aims to provide an in-depth understanding of the challenges and opportunities provided by digitalisation, and at the same time, the support that may be provided to increase the uptake of digital technologies by tourism businesses. The research may help future tourism actions and initiatives from national, regional and to a local destination level, and at the same time, may enhance the academic world regarding digitalisation and tourism.

The study can provide insight information on the key potential and obstacles of development of tourism at Oromia region, as well as serve to greatly raise awareness about the places that are found in Oromia region. The notion of tourist industry is vast and complicated which encompasses numerous aspects but, this research focus on the issues and to encourage positive usage of resources in expanding the country's revenue as well tourism sector.

The most significant contribution of the tourism industry to a country or nation is the immediate creation of new jobs. When people travel abroad, they want to visit places of natural beauty and historic significance. This creates new job opportunities like those for tour planners or operators, site visit guides, and travel consultants. Technology had offered travel agencies a way to create a strong relationship with their clients by utilizing social media platforms such as Facebook, Instagram, and Twitter for better understanding.

1.6. Scope, and limitation of the Study

In order to assist in the digitalization process using digital technologies, the study focuses on examining the opportunities and challenges associated with the digital transformation of the tourism business in south-west Ethiopia. As a way of gathering data, questionnaires, interviews, and document analysis were all used. The research methods used in this study were both quantitative and qualitative. This study adopted quantitative and qualitative research approaches by using a primary data source. The researcher chose south-west Ethiopia as the study area, including Jimma Zone, south-west Shawa Zone, Bedele Zone, and Ilu Aba Bora Zora. Purposive sampling was used for this study because it is mainly important to select a sample that can help to acquire the required information from utility consumers of tourism services and products, tourism service and product providers, and tourism experts in south-west Ethiopia.

The study has some limitations. First, the study does not take elements into account that can provide an understanding of why tourists develop emotional connections to tourist destinations. The other limitations did not include hotel and restaurant brands.

1.7. Operational Definitions

Tourism: means the temporary short- term movement of people to destination outside the place where they normally live and work, as well as their activities during their stay at these destinations.

Tourist: is a person who travel to destinations outside his/her residence and working place, and stay for at least 24 hours for the purpose of leisure or business.

Internet of Things: refers to a type of network to connect anything with internet based on stipulated protocol through information sensing equipment to conduct information exchange and communication.

Artificial Intelligence: Artificial intelligence (AI) is kind of technology that makes the devices smart as human beings to develop the human's life by using these devices in all of the life's aspects such service robots, healthcare, education, including electronics, software, medicine, entertainment (games), engineering, communications and manufacturing.

Cloud Computing: is internet based computing where virtual shared servers provide software, infrastructure, platform, devices and other resources.

Digital Technology: refers to the digital tools, systems, devices and resources that generate, store or process data such as social media, online game, multimedia and mobile phones.

1.8. Organization of the Study

This study is presented in the following chapters and they account for how this study was addressed the research question.

Chapter One: This chapter presents background of the study, the problem statement and research questions, the general and the specific objectives of the study, and significant of the study.

Chapter Two: This chapter presents about theoretical and related works review that are relevant for this study. It discusses about digitalisation in general, digitalisation in tourism, digital innovations, and the challenges and opportunities. Following it, a discussion of a pivotal conceptual framework.

Chapter Three: This chapter presents the research methodology followed to conduct the study. It presents the research approach alongside with the methods of analysis for the collected data, in particular, semi-structured interviews.

Chapter Four: This chapter focuses on analyzing and discussing the challenges and opportunities in the digital transformation of the tourism industry in South West Ethiopia. This

chapter also analyses multiple linear regression based on digital technologies in relation to the relevant theories identified in the literature review chapter, which portray the findings of this thesis.

Chapter Five: This chapter presents conclusion and recommendations. The chapter focuses on providing a relevant answer for the research questions in order for a better understanding of the proposed study. Finally, the researcher concludes the study by forwarding recommendations.

CHAPTER TWO LITERATURE REVIEW

2.1. Introduction

The purpose of this thesis is to examine the difficulties and possibilities associated with implementing new knowledge for the transformation of the tourism sector in South-West Ethiopia. This chapter provides an overview of tourism and the changes that digitalization has brought about within it. The impacts of using new digital technology will be discussed after the digitization of the tourism industry is described. The literature that is currently available on the opportunities and problems that the tourism industry has when it comes to digitalization is identified and presented, as well as the elements that influence the digital transformation of the business. There are also references to and presentations of literature on the numerous changes occurring in tourism because of digitalization.

2.2. Definition and Types of Tourism

The WTO defines tourism as a phenomenon with cultural, social, and financial components that requires the mobilization of people to states or locations outside of their usual surroundings for personal, professional, or business reasons (UNWTO). Tourism encompasses both mainstream and niche travel. Mass tourism is defined as large groups of people traveling to well-liked resort destinations. As a result of digitization, alternative tourism also known as "special interest tourism" or "responsible tourism" involves alternate types of travel and places focus on learning locals' ways of life and the surrounding natural environment (Smith and Eadington, 1992).

Alternative tourism is defined as "types of travel designed to be environmentally responsible, respect local social and cultural norms, and allow both hosts and visitors to enjoy beneficial and worthwhile interaction and shared experiences" (Wearing and Neil, 2000). According to Cater et al. (1994), alternative tourism consists of small-scale, independently run businesses. They clarify how this differs from mass tourism, which is frequently characterized by huge multinational concerns and repatriates the revenues to foreign nations (Cater et al., 1994). Along with its dedication to fostering the local economy and agriculture, its positive effects on the environment and society characterize alternative tourism. Finally, alternative tourism encourages locals to participate in it and visits them (Smith and Eadington, 1992; Wearing and Neil, 2000).

Cater et al. (1994) describe alternative tourism as comprising small scale, locally owned activities. They explain that this contrasts with mass tourism, which is often characterized by large-scale multinational concerns and repatriates the profits to offshore countries (Cater et al., 1994). The characteristics of alternative tourism include its friendly environmental and social impacts, in addition to its commitment to developing the local economy and agriculture. Finally, alternative tourism supports the involvement of local residents and sees them as central to the tourism development process (Smith and Eadington, 1992; Wearing and Neil, 2000).

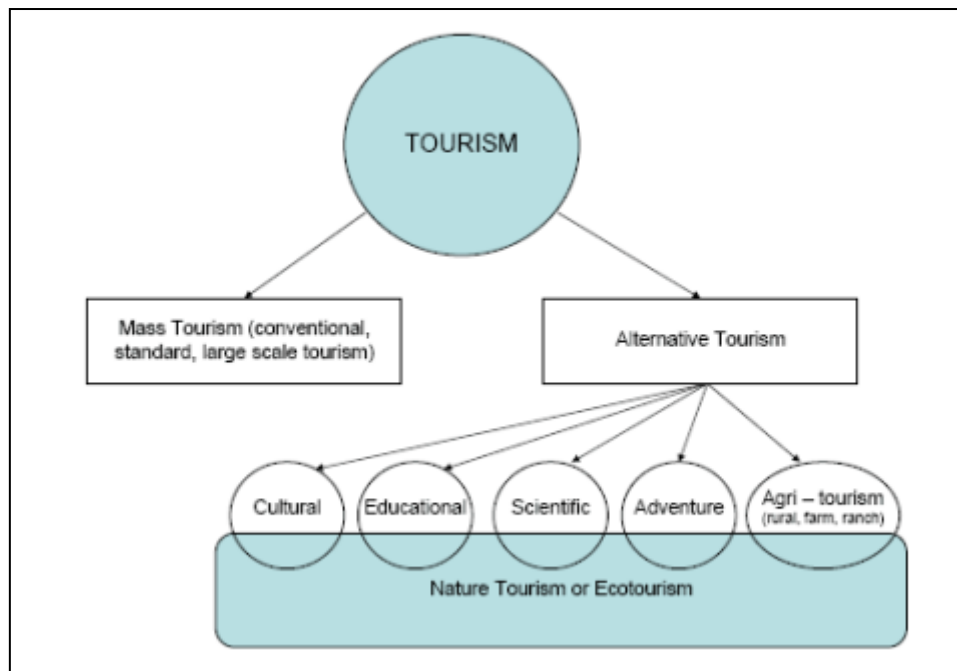


Figure 1: Types of tourism (Mieczkowski, 1995)

2.3. Digitalisation and Tourism

The usage of information technologies might be used to define digitalization in general, ambiguous terms. Autio (2017) offers a more comprehensive definition of digitalization, defining it as "the application of digital technologies and infrastructures in organizations, economy, and society." People are showing an increased dependence on electronic devices as a result of digitalization, which is also changing how we live and work. This could lead to behavioral changes (Miller, 2014). As the digital world replaces the physical one, daily contacts and experiences are diminished, which could lead to a decrease in human connectivity (The Conversation, 2018). Furthermore, the economy and industry have undergone a number of

changes because of digitalization. One of the most significant recent developments is the virtualization of practically everything.

Furthermore, the economy and industry have undergone a number of changes as a result of digitalization. One of the most significant recent trends has been the digitalization of practically everything, and technical advancements are seen as being essential to future progress (Degryse, 2016). However, in order to reduce the economic and social risks associated with implementing digitalization, digital skills are necessary. In light of this, a thorough grasp of how digitalization has affected the travel and tourist sector is required. A new industrial revolution, known as Industry 4.0, emerged because of increased Internet usage, which makes it easier for humans and robots to communicate (Brettel, Friederichsen, Keller & Rosenberg, 2014).

Industry 4.0, or the new industrial revolution, refers to transformations within the manufacturing sector driven by digitalization based on the interconnection and communication between devices along the value chain to increase management efficiency (Smit, Kreutzer, Moeller & Carlber, 2016), where information is synchronized between the physical and cyber systems (Lee, Bagheri & Kao, 2015). The new industrial revolution is having in focus the digital enhancement or re-engineering of products or services (Burmeister, Lüttgens & Piller, 2015). One of the key characteristics of Industry 4.0 is standardization, which can only be possible with collaboration between companies (Smit, Kreutzer, Moeller & Carlber, 2016).

Even though the fourth industrial revolution had its focus on digitalization in the manufacturing sector (Liao et al., 2017), its impacts can also be felt in other sectors such as tourism. In tourism, digitalization has played and will continue to play a key role, and this phenomenon can be felt on both sides of the industry, namely the consumer and the provider. From the provider side or the tourism businesses, digitalisation has offered a transformation in their ecosystem offering new business models, new communication channels with the consumers and eventually economic growth (Dredge et al., 2018). As for the consumer side, we see an increase in the use of digital platforms, which put the consumer in control of the planning and purchase of their vacation and influence other consumers (Ibid).

The increasing integration of digitalisation in tourism resulted in a new phenomenon, namely e-tourism.

With the rapid change of technological development, it can be stated that tourism as an industry is facing significant changes. It is argued that in the last two decades the information technology and tourism have faced two major eras:

Digitalisation (1997 - 2006) : The Internet is developed as an information tool. In this era, a wide variety of technologies has emerged such as www (World Wide Web), webpage, e-mail, e-commerce, etc. The main research made in this era focused on tourism marketing and business opportunities in order to understand the consumers' behavior. Digitalisation era is also the time when e-tourism developed as a discipline (Xiang, 2018).

Age of Acceleration (2007 - 2016) : This era is characterized by the emergence of Wi-Fi, Web 2.0, Internet of things, Crowdsourcing, artificial intelligence, etc. With the increase of user-generated content and the rise of collaborative tools such as Facebook and Instagram and the collaborative economy such as Airbnb and Uber (Ibid), the tourism industry is being disrupted from both sides, the consumer and the provider.

As described above, the tourism industry has faced two major changes that have implications for tourism businesses as well. The first era can be categorized as an opportunity for tourism SMEs, which could take advantage of the benefits of digitalization to understand consumers' behaviors through various information tools (Xiang, 2018). The second era may be seen as a disruption due to the emergence of new business models and the change in consumer behavior, with consumers becoming prosumers (Dredge et al., 2018). Furthermore, Dredge et al. identify three major phases produced in tourism due to technology development:

Between 1990 - 2000 : Sales and marketing - in which destination organizations and tourism businesses use technology as a market tool - businesses within tourism could improve internal operations through supporting software and facilitate transactions through web-based reservation systems;

Between 2000 – 2010 : Digital business ecosystem – Internet becomes a key source of information for travelers which resulted in the suppliers focusing on distributing more customized products. In this phase expansion in the global supply chains have developed being facilitated by tourists booking and completing electronic financial transactions online;

From 2010: Integration of systems – This phase is characterized as increase

interconnectivity between digital and physical world facilitated by the increase integration and interoperability of digital systems, and the appearance of cloud computing, mobile technologies, augmented and virtual reality and GPS (Dredge et al., 2018).

As can be seen from the above related eras identified by Xiang and phases identified by Dredge et al., tourism have faced multiple changing which have challenged the way the industry is perceived, the way that the tourism businesses operate, the shift in the customer perceptions and attributions, and the emergence of new and innovative business models (Xiang, 2018; Dredge et al., 2018). These changes facilitated the travel for consumers resulting in globalization. In this sense, tourism SMEs must adapt to these changes which may possess a challenge for them. For a more in-depth understanding of this assumption, the following pages, the digital journey of tourism will be presented following the figure developed by Dredge et al. below (Fig.1).

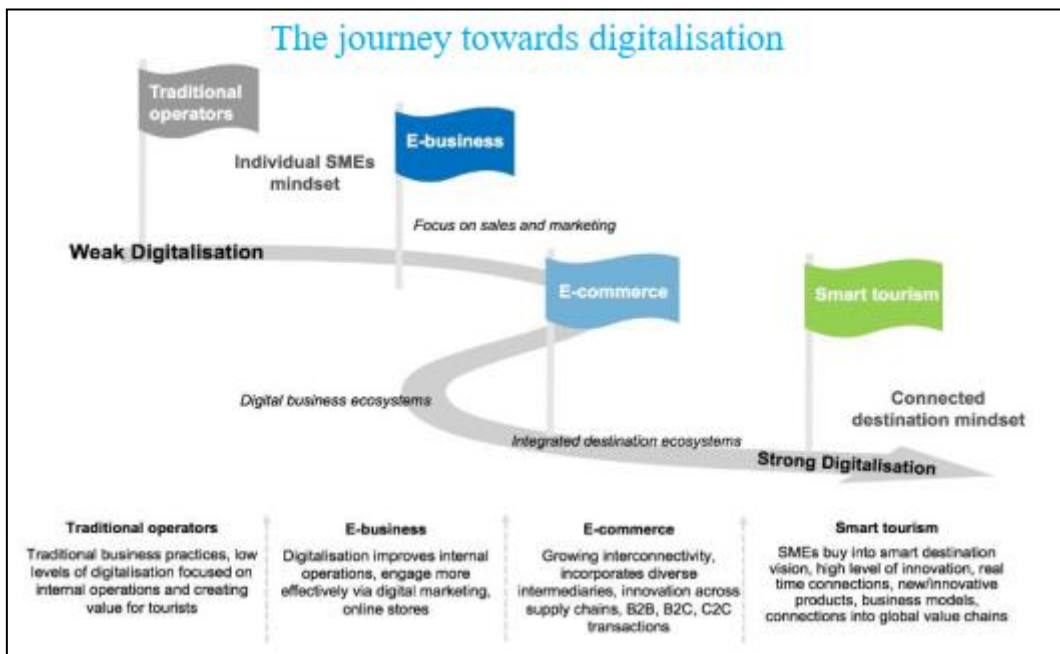


Figure 2: The journey towards digitalisation (Dredge et al. 2018)

I. Traditional operators

The journey towards digitalization starts in the first phase, namely with traditional operators. Even though there could be identified in the tourism industry a series of innovations related to Despite digitalization, the traditional methods of creating and selling tourism products are still considered to play an important role in the tourism industry (Tfaily, 2018). Furthermore, tourism SMEs are perceived as having a low level of digital adoption, with small businesses preferring person-to-person interfaces (Konstantinou, 2016). This low level of digitalization adoption by tourism SMEs could be a reflection of their lack of motivation of tourism SMEs to invest in digitalization due to their conservative nature (Buhalis & Deimezi, 2004). The conservative nature of the SMEs is perceived as having implications in their desire of maintaining a lifestyle instead of achieving growth (Thomas, Shaw & Page, 2011). But in order to maintain their lifestyle and to remain competitive on the tourism market, the tourism SMEs need to make use of digitalisation (Bocarando, Perez, & Ovando, 2017).

II. E-business

E-business, or electronic business, describes the business conducted over the internet, which has the potential of generating new wealth and, at the same time, transforming the rules of competition for traditional businesses (Amit & Zott, 2001). A positive example of e-business could be considered Amazon (Smith, n.d.), which started as an online book store and became the largest online e-commerce retailer, facilitating a B2B (business to business) opportunity for businesses of all sizes, the latter having the advantage of consumer exposure and increasing sales opportunities (Ibid). It is argued that the decision to use technological innovation within businesses is driven by technology, organization, and environment (Fuchs, Scholochov & Höpken, 2010) which also can be characterized as the drivers of e-commerce (Intan Salwani et al., 2009). Furthermore, Oliveira and Martins describe three features that may affect the decision to adopt technologies: the technological context refers to existing and new technologies that may be relevant for a business; the organizational context refers to the scope and size of the business; and the environment context refers to the industry competitors and government entities that exist in the near environment of the business (Oliveira & Martins, 2010). As a result, tourism businesses must be aware of the digital technologies that are relevant to their industry, an argument that will be expanded upon in the analysis phase of this thesis. At the same time, they

have to be open-minded to adopt digitalization and receive support from their competitors and the government in their immediate environment.

The support in the digital transformation of the tourism businesses in South West Ethiopia is intended to be identified in this thesis. The paper attempts to identify the different tourism stakeholders that could ease the transformation of tourism businesses.

III. E-commerce

E-commerce refers to "*the business of buying and selling goods and services on the internet*" (Cambridge Dictionary, 2019), and in tourism, e-commerce can be defined as: "*Tourism e-commerce is a business system that electronically operates the tourist industry and its distribution system with the application of the network, based on the tourism database and e-commerce bank.*" (Wang, Wang & Wu, 2013). E-commerce is disrupting the tourism industry by bringing new business opportunities to global travel (Mamaghani, 2009). Through collaboration, automation, flexibility, and accessibility, e-commerce is encouraging economic growth (Mamaghani, 2009). Nonetheless, the rise of e-commerce has fundamentally altered the traditional tourism industry by altering the behavior of tourism consumers and producers. From the consumers' point of view, e-commerce has changed consumer behavior from the searching for a trip stage to the payment stage, with information about a destination being collected prior to the trip (Mamaghani, 2009). From a tourism business point of view, e-commerce has the potential to form a global collaboration in order to increase efficiency and growth (Intan Salwani et al., 2009). Hence, e-commerce can improve the organization's image and reputation among SMEs on a global market (Hua, 2016), which could result in a more competitive nature for these small businesses (Hua, 2016). It is also argued that the e-commerce technology application could reduce operation costs (Hua, 2016). Nevertheless, the owners of these small businesses are playing a key role in the adoption of e-commerce, with the owners not having the willingness to adopt these new forms of commerce due to their lack of understanding of the benefits of them in the long term (see also Abou-Shouk, Megicks & Lim, 2013). Take for example a study on e-commerce among SMEs in Malaysia, in which it was identified that 72.6% of these businesses did not have knowledge of e-commerce and 69.6% did not have knowledge of what e-commerce could bring to their businesses (Intan Salwani et al., 2009). This could hinder the adoption of e-commerce by tourism SMEs in the sense that these businesses, not being able to perceive the importance of this new commerce form, may not be willing to invest in it. By not adopting these forms of commerce, the tourism SMEs may not be able to take advantage of the interconnectivity and innovative mindset that are facilitated by e-commerce (Dredge et al., 2018).

IV. Smart tourism

Due to the integration of ICT in tourism experiences, a new phenomenon, namely smart tourism. Smart tourism is "*a new buzzword applied to describe the increasing reliance of tourism destinations, their industries, and their tourists on emerging forms of ICT that allow for massive amounts of data to be transformed into value propositions*" (Gretzel et al., 2015). In this sense, the word "smart" refers to technological, economic, and social development with the help of advanced information and communication technologies (Gretzel et al., 2015). According to Gretzel et al., smart tourism comprises three layers: smart experiences, a smart business ecosystem, and a smart destination. *smart experience* in which the tourists are active participants in its creation through technology-mediated tourism experiences (Ibid.); take, for example, the user-generated platform Instagram on which the tourists are uploading their experiences and at the same time they are promoting the destination (Fotanti & Suyadnya, 2015). *Smart business* is the business ecosystem that supports and creates the exchange of touristic resources and facilitates the co-creation of experiences (Gretzel et al.). The two aforementioned layers of smart tourism constitute a smart destination or city. A smart city or place is described as a community supported by ICT in which the collaboration between citizens, businesses, and private and public sectors, and municipalities can contribute to the improvement of the quality of a citizen's life. Khan, Woo, Nam, & Chathoth, 2017; Boes, Buhalis, & Inversini, 2016). Digitalization has brought about a slew of changes in the tourism industry, fundamentally altering the industry. The tourist industry has become highly digitalized, and new business opportunities have emerged in the tourism industry. Nevertheless, in order to become smart, businesses in the tourism industry need first and foremost to develop a digital mindset.

2.4. E-Tourism Business Models

With the advent of the Internet, businesses have developed in almost every sector. The Internet decentralizes and democratizes access to the customer; there are cost savings in distribution, service, marketing, and promotion. The Internet has a tremendous impact on today's travel and tourism industries. Thus, e-tourism is considered one of the most important sectors in today's business world. In the past few years, the travel and tourism industries have grown with the explosion of e-commerce. In e-tourism, new and efficient Internet business models, including B2B, B2C, and B2B2C, have gained a strong foothold. However, a study on electronic

commerce done by APEC reported, "small and medium enterprises are significant players in business-to-business and business-to-business-to-customer electronic commerce, which constitutes more than 80 percent of all E-Commerce activities." We focus on a number of ways in which the structure and performance of the tourism industry are being influenced by the adoption and development of ICT. The typical value chain in tourism consists of four components: a travel services provider, a travel operator, a travel agent, and a traveler. Travel services provided by travel service providers can be distributed to the traveler through a joint operation of a travel operator and a travel agent, or solely by the travel operator. On the intermediary level, normally the travel operator plays the role of a wholesaler of travel services, which integrates a number of different travel services and offers them as a packaged service through a travel agent. Here, the travel agent is the retailer of travel services, which ties prospective travelers and service providers together by controlling the information flow among the different participants in the value chain, and selling the information to travelers. The value chain is based on the cooperation among travel service providers, travel operators, and travel agents. In developing countries, the intermediary function of the travel operator is weaker compared to that of the travel agent, and most travel agents take on the responsibilities of the travel operators.

A business model is the method of doing business. It is the method that allows a company to generate revenue and sustain itself. On the Internet, services are often realized by huge networks, and at the onset, it is not always clear who makes the money and how much. This is especially true in the field of e-tourism, where many different companies cooperate in order to produce the final customer's service. The Internet has given rise to new kinds of business models. This section will give an overview of the most popular business models observable in the arena of e-tourism.

A. Business to Customer Model (B2C)

In B2C Business, Tourist service providers sell their products directly to the tourists or customers. It is the most common model in E-Tourism. In this model tourist service providers have a direct communication with tourists.

B. Business to Business Model (B2B)

Tourist Service Providers (business) like airlines, hotels sell their products to other business like tour operators e.g. expedia.com. To promote tourism, this model works with the collaboration of different businesses (i.e. Airlines, Hotels, Tour Operators, Agents etc.) and can provide dynamic packages to the tourists.

C. Customer to Customer Model (C2C)

In this model, a tourist can communicate with other tourists through the Internet (forums, blogs and email groups etc.) and can develop a tourist community. Thus a tourist can make his travel plan by discussing with other tourists in the community and also can get help regarding booking hotels, airline tickets, sites etc.

D. Government to Business Model (G2B)

In this model, Government (G) plays a role by interacting, co-operating, imposing rules or giving permission to tourist service providers/agents (Businesses) so that they can work freely to promote tourism.

E. Business to Business to Customer Model (B2B2C)

B2B2C describes companies that sell products or services to companies that in turn sell to consumers, all via the Internet. In another word, it describes transactions in which a business sells a service or product to a consumer using another business as an intermediary. B2B2C E-Commerce is potentially the matched business model courted by many industries, especially the tourism. For example, Travelocity.com sells tickets and room reservations on behalf of major airlines and hotels respectively. Developed countries generally follow this business model.

F. Government to Business to Customer Model (G2B2C)

Our proposed E-Commerce model in E-Tourism for the developing or under developed countries is Government to Business to Customer (G2B2C). We functionally eliminate the agents from our model as the tourists in our model can easily communicate with the tourist service providers (As a result, the need for a middleman as the tourist agent is no longer required). In our model, tourist service providers/tour operators play the central role. Here, government (G) renders necessary

support to tourist service providers/operators (B) to operate seamlessly and thus, tourist service providers can provide better service to the tourists (C) to promote tourism.

2.5. Digital Technologies in the Digital Transformation of Tourism Industry

When it comes to digitalisation and the adoption of new technologies, there can be identified various digital innovations that have revolutionized tourism industry. In this subchapter some of the major digital innovations that have revolutionized the tourism industry are presented.

2.5.1. Online Booking System

Since the 1980s, computerized booking systems have shown a rapid expansion, affecting all tourist businesses. Initially, they emerged in the early 1960s as part of providing an efficient stock management tool. The rapid growth in demand and supply in the tourism sector over the past decades has shown that industry could be kept under control by a single powerful computer system. Airlines were the pioneers in introducing this technology because they replaced hand-written reservation systems with electronic databases. Soon, international hotel chains and tour operators became aware of the benefits of these systems and followed this trend. Reservation systems are often used as a general term to include a wide range of systems. Overall, booking systems can provide important strategic tools for tourist businesses and destinations, and allow for the creation of autonomous business strategies (Sion et al., 2013). Reservation systems are used by the tourism industry as a whole. Their use and continuous development improve the quantity and quality of the services offered to customers, while at the same time offering measurable advantages to the tourism companies (Theoharis, 2006). The continuous updating of information and the ability to provide specific information, as well as booking support, confirmation, and the purchase of a wide variety of tourist products, are the great advantages of these systems (Sion et al., 2013). For this reason, reservation systems are the most important distribution channel in tourism. Through these, tourist businesses, such as hotels, can offer their products / services 24/7/365, to a large number of customers, irrelevant of their geographical disparity, at a very low cost, improving the quantity and quality of services offered to tourists, while also obtaining measurable benefits, such as making profits by skipping intermediaries and the high commission they were required to pay (Schulz, 1996; Sion et al., 2013). According to Schulz (1996), computerized reservation systems are systems for pure logistical functions,

namely information exchange. In addition, these systems also perform additional tasks related to the distribution of services, while supporting the transport of goods by eliminating the physical distance between the producer and the intermediaries. Therefore, computerized reservation systems can be described as a distribution support process, as it can be seen from the following figure, which illustrates the architecture of such a system.

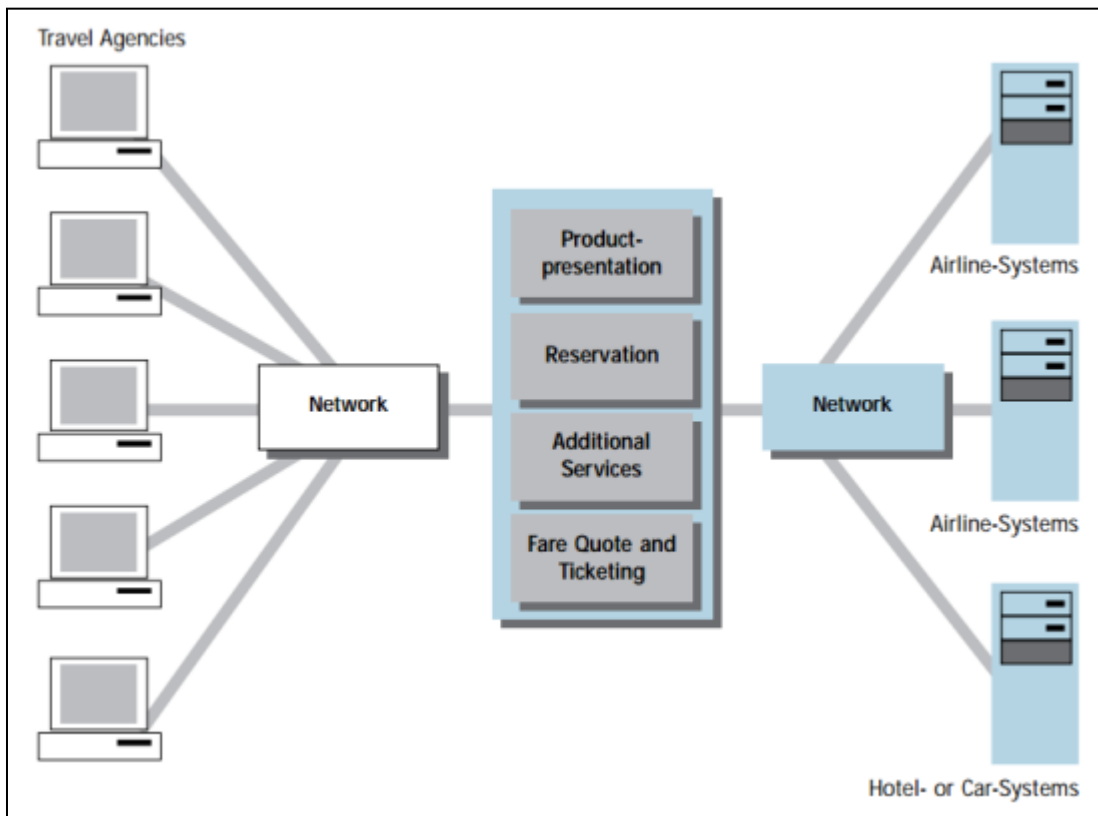


Figure 3: Architecture of a reservation system (Schulz, 1996)

2.5.2. Social Media

Several researchers (Yazdanifard and Yee, 2014; Christou, 2015; Kohli et al., 2015; Hew et al., 2016; Zhang et al., 2016) argue that social media are an important marketing tool for tourist businesses, in terms of engagement, communication, and consumer relations. Social networking sites were originally used for entertainment purposes, but increased use of communication technologies over the Internet and information has shifted the way people interact with each other, especially in the hospitality and tourism industries. For example, social networking sites, such as Facebook, allow registered users to interact globally and freely with people who have the

same interest through uploading photos, sharing posts, communicating with the organization itself, and with other consumers, commenting and taking answers to their questions (Yazdanifard and Yee, 2014). Overall, therefore, social media tools are adopted in the context of integrated marketing plans to produce a customer-centered message. With the development of platforms such as LinkedIn, Facebook, Twitter, and YouTube, hotel units can be accessed by a potential visitor. Since social media is available to anyone with an internet connection, it is a platform that can be used by the hotel industry to increase brand awareness. Social media are indispensable for the development of new businesses and the sustainability of existing ones in the current competitive and online market (Al-Msallam and Alhaddad, 2016).

Apart from the above, it is argued that social media facilitates immediate feedback from customers (Al-Msallam and Alhaddad, 2016). The great importance of social media is that it can influence consumer decisions and lead to a change in their behavior, precisely because of their communication with those who have previously visited this organization and who have experience (Anderson, 2012; Yazdanifard and Yee, 2014). In a Market Metrix survey on Trip Advisor in 2010, visitors' 'experience of customer ratings' became the dominant factor in choosing hotels by tourists, while 51% of survey respondents reported that they included the 'customer experience' 'in choosing hotel organizations (Anderson, 2012). In the same survey, a little more than a quarter (26.5%) of TripAdvisor visits took place over the last five days prior to booking, while the remaining three quarters were equally distributed over the remaining 55 days. This may be an indication of how visitor surveys are intensifying shortly before the final purchase decision is made. The consumer's visit to TripAdvisor in close proximity (to the market) may indicate that user ratings are some of the final and potentially key criteria in the hotel selection process by visitors (Anderson, 2012).

In addition, in order for a tourist business to be successful, it should make decisions based on consumer needs, changes in society, and technology development. This not only satisfies consumers, but also strengthens the relationship with customers to ensure that they continue to be customers (customer retention). Furthermore, it is argued that consumer communication assists businesses in creating a positive impression about their image (corporate image) as well as building confidence and improving relationships with new customers, leading to loyalty. However, it should be noted that a simple conversation with consumers using standard

advertisements will not help in this direction. Conversely, the debate needs to be credible so that consumers can be persuaded and interested in the tourist business's brand and services (Yazdanifard and Yee, 2014). Identifying consumers with the brand is an important determinant of consumer confidence and loyalty to a tourist business. Nevertheless, consumer loyalty to a business depends to a large extent on their positive assessment of products and services, which is again based on their identification with the brand (Fung So et al., 2013).

Overall, social media has now become a preferred low cost marketing tool, which encourages two-way communication between tourism businesses and consumers. Customers react and express their views publicly, and so social media have become more than just a simple marketing tool: they have become a channel that allows interaction and gives tourism businesses the opportunity to deal with the problems and concerns of their customers, which, if done effectively, can make a major contribution to building the brand. In the current economic climate, where many businesses cut marketing budgets, the most successful businesses have shifted from traditional marketing to social media as a means of communicating with consumers, building their brand, and generating a higher return on investment for each unit they spend on marketing. Unlike traditional marketing channels, social media provide up-to-date and valid real-time information about a business (such as the number of Facebook fans, the number of Twitter followers, and comments and registrations for subscriptions on YouTube). Tourism businesses can track the number of conversations that take place about a new product or service they offer and can respond directly to reviews, while they can also get information on how customers evaluate their services by evaluating them this way, which enhances the image of their business and their brand (Seth, 2012). In this context, social networking sites also contribute to the identification of consumer needs and demands (Callarisa et al., 2012). For example, hospitality companies and tour operators are aware of what consumers want and what their needs are, as well as which elements of the hotel did not satisfy them when they stayed there or the behavior of staff.

This also results in word-of-mouth communication, which leads to the acquisition of new clients at relatively low cost, but also to the recognition and creation of a good image and brand (Yazdanifard and Yee, 2014). In addition, it is argued that integrated marketing communication, which is greatly enhanced by the development of IT and technology, contributes greatly to the

creation and reinforcement of the brand (Seric et al., 2014). In the context of integrated marketing communication, the brand of the tourism business consists of image, perceived quality and consumer belief in the hotel (Seric et al., 2014).

2.5.3. Online Reviews

The purchasing behavior of tourists has changed with the development of new technologies and the introduction of various booking websites. These websites, in order to attract the interest and dedication of hotel customers, in general, offer evaluations to help consumers find services that meet their needs (European Commission, 2014). Online ratings play a key role in consumers' purchasing decisions. Benefits for the customer include the ability to easily compare tourist businesses, but also to gather more information (Minazzi, 2010). In addition, the ability of customers to assess the quality of services provided by hotel units is also part of the general discussion of the importance of customer involvement in the improvement of service delivery. In this way, consumers also contribute to the further upgrading and development of quality assurance standards. Standards based on the consensus of all stakeholders, including consumers, and addressing their basic needs, will be more relevant to the hotel market. This will enhance consumer confidence in the services provided (ISO, 2011). In order to provide further assessment information to prospective customers, websites often include quantitative assessments of consumers of a service. Faced with a lot of information about numerous tourist businesses and the need to make a quick and effective decision, customers can use ratings as a way to make estimates without having to search for more information. This can be particularly appealing because people use readily available information to make decisions. Consequently, consumers can turn to ratings as a quick and easy way to evaluate the quality of a hotel's services, especially when confronted with limited or ambiguous information. Therefore, it can be concluded that customers will rely on evaluations at an online site as a means of assessing and evaluating the service provided in the tourism industry (Browning and Sparks, 2013).

An individual's perception that a hotel brand has a good reputation from other tourists (e.g., ex-clients) leads to an increase in that person's confidence in the organization. Consequently, communication via social media can lead to an increased reputation and, therefore, higher consumer confidence (Christou, 2015). Using social media, tourists can express their views on the services provided, the elements, and the behavior of the staff in a hotel, meaning that

consumers can share their experience. The dynamics of social media virtually strengthen and encourage consumers to express their positive or negative experiences about interacting with a hotel organization, even rating these hotels, thus influencing the purchasing decisions of prospective and potential customers (Alalwan et al., 2017).

It is claimed that tourists show confidence in websites such as Booking.com and TripAdvisor (Verma et al., 2012). In particular, customers who have fulfilled their initial expectations and who tend to be more satisfied with the services offered them can positively influence the views of future consumers, contributing through their positive experience to the increase of the tourism business' reputation and brand (Hew et al., 2016). Most of the tourists seek information and comments on social media (Verma et al., 2012). In addition, it is argued that consumer confidence in the reviews and advice of other travelers overrides the views and advice of travel agents (Ong, 2012). Developing and maintaining customer brand awareness will enhance knowledge of the brand, resulting in a more intimate and positive response to it (Xu and Chan, 2010). Apart from the above, brand understanding is defined both by the company's branding and external brand communication, such as advertising, promotions, publicity, and word of mouth, which is facilitated and enhanced by various means of social networking (Fung So and King, 2010).

Additionally, the meaning of a particular brand is influenced by the customer's immediate experience, while at the same time it depends on internally focused promotions such as employee behavior, overall design and service structure, and the ability to deliver brand's commitments (Xu and Chan, 2010). However, the subjectivity of the hotel quality assessment affects customer feedback. One question raised in this regard concerns the criteria for consumer assessments. Each website has its own classification system based on different requirements that do not necessarily coincide with the official requirements of the national governments of the countries where the hotel is located. As a result, web site evaluation sometimes comes in contradiction with nationally-based rating systems, but also to other web sites. Therefore, these ratings, coupled with customer feedback, are confusing, as the necessary information on rating standards may not be provided. In addition, sometimes the situation is further complicated by the use of a symbol used by other official rating systems (Minazzi, 2010).

2.5.4. E-Banking and Payment System

Digital tourism is not only about being on the internet or using mobile apps but also using other digital resources such as mobile payments, which are receiving growing interest globally as an alternative to using cash, checks, or credit cards (Oliveira et al., 2016). Peng et al. (2012) describe mobile payments as the use of a mobile device to conduct a tourism payment transaction in which money or funds are transferred from a payer to a receiver via an intermediary, or directly, without an intermediary, in the tourist destination. The tourists make mobile payments using a mobile wallet, which consists of a mobile phone with consumer-specific information that allows guests to make payments (da Costa Liberato et al., 2018) via various wireless technologies (Oliveira et al., 2016). such as near field communication (NFC), radio frequency identification (RFID), and unstructured supplementary service data (USSD) (da Costa Liberato et al., 2018).

2.5.5. Artificial Intelligence

Tourism businesses also must take into account the newest results of robotization, the success of experimental self-driving cars and innovative transport solutions, VR glasses, and other ICT developments like tourism-related smartphone applications that appear by the thousand every day. The popularity of Facebook Messenger chatbots (which are connected with other deep text analysis systems on Facebook) is growing rapidly among the customer service centers of state-of-the-art airline companies (Alaska Airlines, Lufthansa Group, KLM, Aero Mexico) and travel agencies (Neckermann, TSI). The development of technology cannot be stopped or slowed down; however, businesses can prepare for and adapt to it with organizational flexibility and openness. The next generation of consumers will have different demands. The members of the Internet of People (IoP) community offer their free time to achieve common goals, where community-based new frameworks are set up for a non-specific target group (Miranda et al. 2015). Similar incentives will make it very difficult for companies that are not ready to serve the needs of consumers in a flexible way and insist on only selling their own products on the market in a traditional way.

Today, AI plays a huge role in creating personalized offers for users (Russel et al 2010). These tailor-made solutions make travelling more cost effective; ensure that the reservations are made

with regards to personal preferences; offer the favorite foods and drinks and preferred programmes for the user; in short, they enable the organization of the perfect trip, based on the traveller's demands.

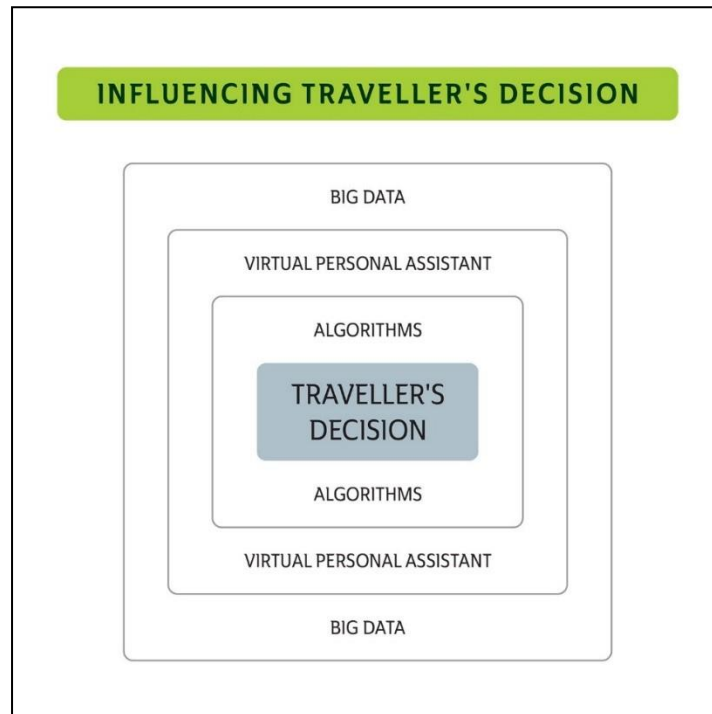


Figure 4: Influence of traveller's decision by AI

The new decision making system (including Virtual Personal Assistant – VPN) is also beneficial for the service providers, because they can align their operation to the existing capacities (Fig. 1). AI knows personal preferences and individual demands much better than travel agencies. Travel agents might know more about the market as a whole, but no matter how long they'd been working together, they cannot know all the preferences and motivations of the traveller. In addition, AI takes into account positive ideologies like sustainability and climate change awareness (Zsarnoczky 2017b), which at the same time represents a challenge and a huge opportunity for increased efficiency in the tourism industry. In today's fierce competition within the industry, AI offers a huge advantage; however, not every stakeholder in the tourism industry is ready for its exploitation. While conglomerates and industrial giants are idly watching the evolution of the future, it is the creativity mindset of small innovative businesses that make the economy move forward (Musk 2015). In the future, the uniform offers of today's supply side of the market will be undertaken by personalized services, provided with the help of AI.

Instead of today's uniformed services, the tourism industry should focus on individual preferences in the future (Ricci et al., 2002). For instance, today, most service providers cannot imagine that during "happy hours," they would serve something their guest prefers instead of what they have on offer. However, services like that are exactly what the tourists of the future are looking for, and providing them is a huge advance in the competition. The use of AI is not likely to dramatically change the relationships between the actors and stakeholders in tourism. The fundamental activities in the industry are likely to remain the same: travelers will make decisions on the details of their trip, and they will arrive at their chosen destination using their preferred means of travel (Fesenmaier et al. 2000). It is clear even today that tourists and local citizens have quite different expectations of the offer of travel portals—influenced by marketing objectives—and what these sites recommend as "must-see" attractions (Zsarnoczky 2017c). In the future, these "must-see" offers can also be personalized, and travel options will be brought to consumers in 3D (with devices like Google Glass), so that they can choose between offers especially made for them.

In the technological revolution of the tourism industry, AI-controlled chatbots play an important role. The first chatbot, called ELIZA, was developed in 1964 (Weizenbaum 1976). Chatbots, developed for automating communication, have evolved enormously since the introduction of the first model; their most popular versions are counseling and personal assistant applications. Their main fields of use are retail, customer services, decision-making support, state-of-the-art payment systems, and online community building.

2.6. Challenges and Opportunities in the Digital Transformation of Tourism Industry

This sub-chapter presents the challenges and opportunities in the digital transformation of tourism industry along with various innovations that occurred in tourism due to digitalisation.

2.6.1. Challenges

Digitalization is not only limited to e-businesses or digital start-ups, but it will also affect small businesses, which, in order to be competitive on the market, have to adapt to a changing world (Autio, 2017). In order for the already established SMEs to digitalize, Autio has identified two policy actions that can contribute to the digitalization of small businesses, namely, facilitating the reinvention and digital transformation of the already existing SMEs (Autio, 2017). In order for these policy actions to achieve their goals, a better understanding of the challenges perceived

by SMEs when it comes to digitalization needs to be identified. Thus, this sub-chapter identifies the internal and external barriers that the tourism SME faces when adopting new digital technologies. Internal barriers refer to those that arise inside the company, while external barriers refer to those that arise from the external environment (Cordeiro & Vieira, 2012).

Internal barriers include a lack of time and money to invest in the reinvention of their business models (Jensen, Tofalletti, Thornley, & Murnane, 2016). Lack of financial resources is characterized by the slow adoption of new digital technologies by tourism SMEs, resulting in small firms not being able to realize the benefits provided by digitalization (Mbuyisa & Leonard, 2017). This assumption relates to another challenge that SMEs face when it comes to digitalization, namely a lack of knowledge. In relation to the internal barriers, another study demonstrates that low ICT infrastructure, lack of awareness of new technologies, and financial resources may affect SMEs in their digital transformation (Chiwere & Dick, 2008). Moreover, Najda-Janoszka and Kopera argue that the tourism industry is characterized as being modest innovativeness due to the existing of a large proportion of SMEs in tourism, the latter struggling with the lack of resources and low awareness of the importance of adaptation of innovation (Najda-Janoszka & Kopera, 2014). Considering that the tourism industry of the European Union is mostly comprised of SMEs, there is a need for awareness of the importance of digital transformation in order for the industry to better innovate. Nevertheless, a case study on SMEs conducted by McCamley and Gilmore concluded that SMEs have the potential to increase the innovativeness of the tourism industry by providing a sense of authenticity at the destination level when integrated into the tourism marketing system (McCamley & Gilmore, 2017).

When it comes to external barriers, legal frameworks and ICT infrastructure can play a key role in the adoption of digitalization by tourism SMEs (Mbuyisa, & Leonard, 2017). The legal framework can play a significant role in the adoption of digitalization, which could be reflected in barriers such as massive paperwork or different levels of legislation for tourism SMEs. There may be differences in regional and local government levels among European Union member states (European Committee of the Regions, 2018), which may result in a more intense struggle for tourism SMEs in their digital transformation. Other external barriers for SMEs to digitalization identified among scholars are environmental, industry, and supplier or consumer pressures as external challenges that can affect the uptake of digitalization by tourism SMEs

(Konstantinou, 2016). Environmental pressure and infrastructure can significantly impact the adoption of new digital technologies by tourism SMEs due to the very fragmentation of a country, for example, the SMEs situated in an urban environment may benefit from a better ICT infrastructure than the SMEs situated in rural or remote areas (Dredge et al., 2018). In order to overcome these barriers, the European Commission is continuously launching strategies to support SMEs, such as up skilling programs (e.g., the Digital Single Market, 2018), offering tourism SMEs a better position in the global tourism market (TOURISMLink, 2012), and raising the level of digital skills in the workforce (Jensen, Tofalleti, Thornley, & Murnane, 2016), just to name a few. Nevertheless, the strategies proposed by the European Commission are generalized for the entire European Union, and in this sense, it has to be taken into consideration that among member states one can encounter different ICT infrastructure, economic support, legislation, and so on. Furthermore, the willingness and even unwillingness of the tourism SMEs to digitalize has to be taken into consideration. Buhalis and Deimezi identify that tourism SMEs may have short-term profitability; they are characterized as having individualistic behavior and an unwillingness to collaborate on a destination level (Buhalis & Deimezi, 2004).

Furthermore, it is argued that social and demographic factors play a key role in the willingness of business owners to adopt new digital technologies (Dredge et al., 2018). Hence, the individual mindset, the long-term perception, and the demographic factors may influence the uptake of digitalization by tourism SMEs in the European Union. Thus, this thesis aims to identify the support that could be provided in order for European SMEs to overcome the aforementioned challenges in their digital transformation. Nevertheless, tourism SMEs may benefit from adopting digitalization to innovate in the sense that various innovations occurred due to digitalization that could play a significant role in the visibility of the tourism SMEs on the international market, which could further result in reaching new customers and implicitly contribute to the economic growth of the tourism SMEs.

There are however some challenges with tourism development in developing regions which include; lack of skills, poor cooperation between stakeholders and safety conditions (UNWTO, 2006).

2.6.2. Opportunities

According to Barashok, I. V., et al. (2021), digitization has brought new possibilities for the tourism industry. The author's intention was to study the state of digitalization in the tourism sector, the potential news, and the impact that digitalization has on tourism development. As a result, digitalization in tourism makes the tourist business more flexible, adapted to modern conditions, and competitive in a dynamic digital world. Digitization offers new opportunities that can be exploited by providers in the tourism industry. At the same time, competition is intensifying, and companies have to keep pace with digitization in order to remain at the same level. In the age of the internet economy, digitization has the potential to be the driving force behind tourism industry transformation (Bauer, 2008). Especially for companies in the service sector like in the tourism industry, new technologies of digitization offer a great potential to achieve high sales (Dellarocas, 2003).

Technology will play an even more important role in the tourism industry. Before visiting a place, we will have all the information using computer-generated imagery (CGI). The tourism industry will be more effective if our visions are implemented in the IT sector, the entertainment industry, and travel consultants for dissemination of our initiatives worldwide. Digital technologies and platforms can help developing economies leapfrog conventional destination management challenges and boost their competitiveness. They can also provide new opportunities for women and rural entrepreneurs to improve their market access and financial inclusion. However, many developing destinations have limited knowledge on how to take advantage of digital platforms and mitigate risks. Either constrained by lack of understanding or know how and resources (Martin, 2018).

The tourism sector has a relevant role in the global economy. It generates economic benefits for local economies and creates and fuels small and medium enterprises, thus generating millions of jobs. It also helps emerging economies develop economically (Robin & Pedroche 2017). Tourism is playing an increasingly significant role in the economies of many developing countries. The sector contributes to economic growth, employment, and income (Reddy et al., 2014). According to the Organization for Economic Coordination and Development (OECD), the tourism sector is labor-intensive and allows for relative ease of entry into the market with limited barriers. Policy makers have identified tourism development as a solution to employ large

numbers of unemployed youth and lowly skilled people. This is dependent on people and factors such as natural resources, infrastructure, and capital investment to ensure that quality services and products are delivered. A well-trained labor force will ensure greater competitiveness for this sector and potentially increase the effectiveness of rapidly changing markets.

The development of tourism would be sustainable when it was planned strategically to achieve goals that had long-term effects. Changes that continue to occur in the digital world, especially in information and communication technologies (ICT), are becoming necessary. It is believed that globalization is the reason for interest in and schemes to shift to various forms of tourism. Context-free and capacity-free tourism is becoming a supposition to meet different global visitors' expectations in which lifestyles are promoted as more than simple illustrations (Atun et al., 2019). The tourism sector has strong linkages with other economic sectors, and these linkages need to be optimized for accelerated economic development. Linkages with sectors such as retail, agriculture, transport, and construction will enhance the local multiplier effect and eventually create better economic growth and employment opportunities (Akama & Kieti, 2007).

On a global scale, tourism has proven to be an economic sector that is essential for increasing employment in both the formal and informal sectors, improving quality of life, and attracting foreign exchange. The sector also serves as an alternative form of export, the improvement of a country's or region's balance of payments, and a general increase in economic activities. For these reasons, most developing countries have been focusing on tourism as an alternative for economic growth (Khalil, Kakar, and Malik, 2007; Valle & Yobesia, 2009; Kruja, Lufi, and Kruja, 2012).

Online platforms or intermediaries such as OTAs (online travel agencies) like Expedia, Booking.com, TripAdvisor, etc., which represent a threat to the traditional tourism agencies offering the same quality products and, in some cases, higher quality for less money. Due to their nature of user-generated content, these platforms contribute to the decision making of the consumers of the tourism products and, at the same time, having a significant impact on tourism planning (Xiang et al., 2015). To this day, TripAdvisor alone claims that there are 730 million reviews and opinions generated on the website, covering 8.1 million accommodations, airlines, experiences, and restaurants, claiming itself the world's largest travel site (Media Center:

TripAdvisor, 2018). The choice to book through an OTA instead of a traditional tour operator due to the flexible nature of the online platforms, which provide the consumers with all necessary ways to book a trip down to the last detail (Coyle, 2016). Nevertheless, tourism SMEs may take advantage of the facilities provided by OTA. A study on the adoption of interoperability solutions for online tourism distribution identified some of the advantages that tourism SMEs can encounter when considering collaborating with OTAs (see also Reino, Alcuasorzabal, & Baggio, 2015). These advantages may be represented as cost-effectiveness (e.g., adopting a new set of standards can be effective in terms of costs for tourism businesses), ease of use (e.g., Booking.com), and a low level of security issues (Ibid). Moreover, online wholesalers can benefit the distribution of products and services on a global scale, and by promoting their businesses online, the owners may benefit from increased visibility and exposure (Hua, 2016).

Sharing platforms, or digital platforms, and the sharing economy, such as Airbnb and Uber, continuously disrupting the way in which the tourism stakeholders, such as accommodation and transportation,

Transportation providers are offering their services to consumers (Dredge & Gyimóthy, 2015). Despite claims that they violate applicable legislation that registered businesses must follow (EFFAT, 2015), Airbnb has grown into a global community with hosts in over 191 countries and 81.000 cities (Airbnb, 2019). Nevertheless, scholars argue that the rise of the sharing platforms may affect the tourism industry, but they may also be perceived as drivers for tourism businesses in the sense that the business owners may be more willing to innovate and to form collaborations in order to maintain their place on the market.

Generic search engines such as Google or YouTube and social media platforms such as Facebook or Instagram are being considered among scholars as two of the main "megatrends" that

have impacted the tourism system (Leung et al., 2013). Search engines are playing a key role in The tourism industry is considered a tool to connect travelers and operators within the industry. where tourism business owners can market their businesses online (Pan et al., 2010). Take for example Google My Business, which is free of charge and could be a useful tool in maintaining customers and attracting new ones (Google My Business, n. d.). As for social media platforms, It is argued that having user-generated content can contribute to tourism firms increasing online

revenues through increased online presence (Leung et al., 2013). Take for example Instagram which is considered a current trend in the tourism industry, could improve the promotion and marketing of a destination (Hanan & Putit, 2014) and thus increase revenue through online presence. With the emergence of Web 2.0 which refers to “... *the second generation of web-based services letting people collaborate and share information online in more sophisticated ways.*” (Goyal & Sharma, 2013), an increasing number of businesses make use of websites such as Facebook, TripAdvisor or YouTube in order to increase their competitiveness (Goyal & Sharma, 2013). The websites provide a cheaper and time-saving modality to interact with the consumer by increasing the enterprise-consumer relations, brand value and allow the creation of tourist image (Ibid).

2.7. Related Works

According to Barashok, I. V., et al. (2021), digitization has brought new possibilities for the tourism industry. The author's intention was to study the state of digitalization in the tourism sector, the potential news, and the impact that digitalization has on tourism development. The opportunities offered by digital technologies in tourism demonstrate two aspects from the consumer point of view and the producer of tourist services. First of all, the consumer spends a minimum of effort to search for a tourist product, can receive consulting services online, evaluate and select a tourist destination, and minimize the cost of using tourist services.

Jember (2020) stated the challenges and opportunities of the Ethiopian tourism industry. The Author's believed that tourism as a major ingredient in the economic development strategy, there are various internal and external factors the sustainable development of tourism industry in Ethiopia. And also lack of skilled human resources, lack of integration and weak promotions are the challenges under tourism industry.

A study according to Harting, et al., (2017) conducted with the objectives of the potential benefits of digitization for tourism industry. In the age of the internet economy, digitization can be viewed as a motor of transformation for the tourism industry. Digitization offers promising potential in the tourism industry, both from the supplier and customer perspectives.

Mayer et al., (2019) stated that the role and impact of the tourism sector on local development . The study's goal was to look into the role of tourism in economic development. Tourism is specifically seen as a tool to promote economic development. The result of the study showed that tourism trips had grown from year to year. The study sought to ascertain whether tourism is regarded as an important tool for promoting economic development and alleviating poverty.

According to Tekabe, in Ethiopia, where the tourism sector is at its early stages and tourism tour operators are not enough to meet the demand of their customers, it has become mandatory for a nation to pay special attention to this sector. Supplying this sector will require infrastructure and allocating financial resources, and also setting and practicing policies on how to deliver service in the tourism sector could be taken into consideration (Tekabe, 2015).

According to Gizachew (2013), his findings mention that a lack of infrastructure, problems with securities, a lack of service facilities, a lack of museums, a lack of preservation and protection of cultural heritage, and financial constraints are the major challenges of tourism development. Additionally, the Nabil Debour, on his study he has mentioned that lacking knowledge and awareness about tourism industry benefits, lack of technical knowhow and weak promotion activities, lack of tourism related infrastructure, lack of constant tourism strategies and policy, lacking safety and lastly tourism diversification of tourism products are considered as major problems of tourism industry.

According to Md. Mosharraf (2020), the aim of the paper is to explore the tourism prospects and challenges. The paper is based on secondary data. The data and information have been collected and examined mainly from different published articles, reports, and research papers. The study also displayed that the major challenges in this area are the lack of infrastructure facilities, modern and sufficient recreation facilities, security and safety, and proper training. The results exhibited that the dynamic tourism prospects of this region are to flourish the economy, earn a lot of foreign currency, increase household income, create employment, develop essential infrastructures, reduce the economic gap, create a better image, reduce regional disparity, create goodwill, and build regional cooperation, etc.

Table: Comparison of the finding with related works

Author's name	Title	Methodology	Result
Barashok, I. V., et al. (2021)	Digitization: The new possibility for tourism industry.	Descriptive analysis	Offer new digital opportunities for tourism businesses.
Jember (2020)	Challenges and opportunities of the Ethiopian tourism industry	it is a qualitative descriptive analysis	Improved economic and social well-being for the communities where corporations operate, maximize their social responsibility, while creating support and encouragement to maintain and improve the quality of their operation.
Harting, et al., (2017)	The potential benefits of digitization for tourism industry.	a qualitative research study	New digital technologies allow access to necessary information from all around the world.
Mayer et al., (2019)	The role and impact of the tourism sector on local development.	Both qualitative and quantitative approaches were used in this study.	Benefits of tourism for development of local regions such as economic growth, poverty alleviation, an improved trade balance, job creation and a more diverse local economy.

Tekabe, (2015).	Challenges and Prospectus of Ethiopian Tourism Industry.	a qualitative research study	The result of the study show that lack of promotion, lack of physical infrastructure (road, transportation system, network facility, availability of hotel accommodations especially tourist site), misperceptions the images of Ethiopia.
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CHAPTER THREE RESEARCH METHODOLOGY

This chapter stretches an outline of the research design and methodology that was used in the study. Therefore, research design, data source of the study, sampling procedure and sample size determination, and collection method, method of data analysis, model specification, and reliability of the instrument and description of study variable were discussed respectively. In general, cross-section research design was employed.

3.1. Research Design

The general objective of the study was to investigate the challenges and opportunities of digitization for tourism industry transformation in South West Ethiopia. This study adopted quantitative and qualitative research approaches by using a primary data source. The quantitative approach uses statistical methods for describing patterns of behavior and generalizing findings from samples to populations of interest and employs strategies of inquiry such as experiments and surveys (Creswell 2003). A qualitative approach encompasses the set of processes and techniques that try to explain or interpret qualitative (non-numeric) data such as interview transcripts, images, and documents. The process of performing a qualitative approach involves having to iteratively and progressively notice, collect, and think about things.

3.2. Study Area

The study area for this research was South West Ethiopia, in particular, Jimma Zone, South West Shewa Zone, Buno Bedele Zone and Ilu Aba Bora Zone. The main reason to select this study area was in believing to get the required data and suitability of the areas for the tourism industry in South West Ethiopia.

Jimma Zone: It is a zone in the Oromia Region of Ethiopia. Jimma is named after the former Kingdom of Jimma, which was absorbed into the former province of Kaffa in 1932. Jimma Zone is divided into 13 woredas (with a total population of more than 2.2 million people) and has an agro-ecological setting of highlands (15%), midlands (67%), and lowlands (18%). The zone is one of the major coffee-growing areas of the Oromia region, well-endowed with natural resources that contribute significantly to the national economy of the country. Other than coffee,

the major crops grown are maize, teff, sorghum, barley, pulses (beans and peas), root crops (enset-false banana, and potato), and fruits (Bahru, 2001).

South West Shewa Zone: It is one of the zones in the Oromia Region of Ethiopia. This zone takes its name from the kingdom or former province of Shewa. Between 2002 and 2005, a number of districts were separated from West Shewa Zone to create South West Shewa Zone. Towns in this zone include Tulu Bolo, Weliso etc.

Buno Bedele Zone: It is one of the zones in the Oromia Region of Ethiopia. Located in western Oromia, Buno Bedele is bordered on the south by Southern Nations, Nationalities, and Peoples Region, on the west by the Ilu Aba Bora Zone, on the north by the East Wollega Zone and West Wollega Zone and on the east by the Jimma Zone. Its administrative center is Bedele city.

Ilu Aba Bora Zone: It is one of the zones in the Oromia Region of Ethiopia. The zone is named after the former province of Illubabor. It is bordered on the south by the Southern Nations, Nationalities, and Peoples Region; on the southwest by the Gambela Region; on the west by Kelem Wollega Zone; on the north by West Wollega Zone and the Benishangul-Gumuz Region; on the northwest by East Wollega Zone; and on the east by Jimma Zone. Towns and cities in the Ilu Aba Bora Zone include Bedele, Gore, and Metu.

3.3. Target Population

In research methods, population is the entire aggregation of items from which samples can be drawn. In this study, the target population is comprised of utility consumers of tourism services and products, tourism service and product providers, and tourism experts in South West Ethiopia.

3.4. Sampling Techniques and Sampling Size

Purposive sampling technique was used to conduct the study mainly because it is one of the most common sampling techniques in qualitative research, in which participants are grouped according to pre-selected criteria relevant to a particular research question. It helps the researcher to use different characteristics to select the subject of the study. Therefore, purposive sampling is important to select a sample that can help to acquire the required information from utility consumers of tourism services and products, tourism service and product providers, and tourism experts in south-west Ethiopia.

Because the total number of utility consumers of tourism services and products, tourism service and product providers, and tourism experts in South West Ethiopia was unknown at the time of conducting the research, therefore, with 95% confidence level a minimum of 388 respondents were needed as a sample size and so the research took 400 samples from the various sites. Hence, 100 respondents were selected from each Zones of the study area.

3.5. Data Collection Methods and Instruments

There are different types of data collection methods when conducting research. The goal of data collection is to gain rich data that suits the research objective and research design. Hence, the selection of data collection methods depends on the research objective and research design. In essence, there are two types of data sources: primary data sources and secondary sources. Primary data sources are first-hand information collected from their original sources using various methods such as observation, mailing, questionnaires, focus group and so on. Secondary data sources are the types of information sources that already exist in some form but were not primarily collected. The technique for acquiring secondary data sources is document analysis.

For this study, the primary data were collected from selected utility consumers of tourism services and products, tourism service and product providers, and tourism experts through a structured questionnaire. Likewise, the researcher reviewed and checked different types of literature, such as articles, journals, conference papers, textbooks, useful research reports, and official websites, as secondary data.

3.6. Validity and Reliability Test

Harper and Thompson (2011) note that for data collection tools to provide useful results, the questions must be both valid and reliable. According to Creswell (2009), the standard procedure for assessing the content validity of a measure is to use a professional or expert in a specific field to assist in discovering question content, correcting wording, and resolving sequencing issues prior to the actual study, as well as exploring ways to improve the overall quality of the study. For the sake of this study, the researcher used the opinions of experts in the field of study, especially university research instructors, in particular the main advisor and the co-advisor, to establish the validity of the research instrument. In addition, the researcher relied on the opinions

of tourism experts to determine whether the questionnaires were correctly processed. This facilitated the necessary revision and modification of the research instrument, thereby enhancing its validity.

The consistency of measurement is measured by the reliability of the data collection instrument, which is frequently assessed using a test-retest reliability method (Cooper and Schinder, 2014). Reliability enables the researcher to identify the ambiguities and inadequate items in the research instrument, where the instrument's reliability is the dependability, consistency, or trustworthiness of a test. The scores will be tested using Cronbach's Alpha for the data to be reliable for those questionnaires raised by the Likert scale. According to George & Mallery (2003), it is recommended that if a Cronbach's coefficient of measurement scale exceeds 0.70, it is acceptable as an internally consistent measure so that further analysis can be carried out unless it is unacceptable.

They indicated the alpha in the following rule of thumb concerning reliability coefficient: Alpha > 0.9 – Excellent, Alpha > 0.8 – Good, Alpha > 0.7 – Acceptable, Alpha > 0.6 – Questionable, Alpha > 0.5 – Poor and Alpha < 0.5 – Unacceptable.

3.7. Data Analysis Methods

In this study, both descriptive and inferential statistical methods were employed for data analysis. Descriptive statistics refers to a discipline that quantitatively describes the important characteristics of the sample data. For the purpose of describing properties, it uses measures of central tendency, i.e., mean, median, mode, and measures of dispersion, i.e., range, standard deviation, quartile deviation, variance, etc. The data is summarized by the researcher, in a useful way, with the help of numerical and graphical tools such as charts, tables, and graphs, to represent data in an accurate way. Moreover, the text is presented in support of the diagrams to explain what they represent. Inferential statistics is used to determine the probability of properties in the population on the basis of the properties of the sample by employing probability theory. The major inferential statistics are based on statistical models such as analysis of variance (ANOVA), linear regression analysis, etc. Inferential statistics compares data, tests hypotheses, and makes predictions of future outcomes.

Once the questionnaires were collected by the researcher, they were coded and fed into the SPSS computer software for analysis. Initially, sort functions were used to screen data. Quantitative data collected was analyzed using descriptive statistical techniques such as frequencies, mean, and standard deviation. Qualitative data were categorized and reported according to emergent themes. Measures of central tendency provide expected summary statistics for the variables being tested. The findings were presented using frequency distribution tables that showed a record of the number of times a score or a response occurs. Descriptive statistics gave the profile of the target population, i.e., frequencies and percentages, means, and standard deviations, whereas inferential statistics to be used were the ANOVA/T test, Pearson correlation, and the Multiple Regression Analysis Model used to determine factors affecting digitization for the tourism industry transformation in south-west Ethiopia. Multiple regressions and correlation as a form of inferential statistical analysis were used in determining the relationship between the dependent and independent variables.

The model will be used:

$$DFT = \beta_0 + \beta_1OBS + \beta_2SM + \beta_3OR + \beta_4EPS + \beta_5AI + e$$

Where:

DFT = Digital Future of Tourism

β_0 = Constant term

β_1 β_6 = Regression Coefficient to be estimated

OBS=Online Booking System

SM = Social Medias

OLR= Online Reviews

EPS= E-Banking and Payment System

AI= Artificial Intelligence

e = stochastic term.

All the above statistical tests were done using the Statistical Package for Social Sciences (SPSS) version 25. Significant levels measured at 95% confidence level, with significant differences recorded at $p < 0.01$.

3.8. Study Variables

The study dependent variable is the "Digital Future of Tourism," while independent variables are those factors affecting digitization for tourism industry transformation, such as online booking systems, social media, online reviews, e-banking and payment systems, and artificial intelligence, where be measured using a 5-point Likert scale.

I. Independent variables

In this study, the independent variables online booking systems, social media, online reviews, e-banking and payment systems, and artificial intelligence are identified as the major digital innovations that have revolutionized the tourism industry. Each independent variable extracted from the literature review, as well as the established relationship between these independent variables and tourism's digital future because these variables influence the transformation of the tourism industry, they are classified as first-order independent variables.

II. Dependent Variable

The dependent variable is the Digital Future of Tourism.

3.9. Ethical Consideration

The proposed study findings should benefit and cause no harm to the participants and society. Permission to carry out the research study was sought from ethical review board of Jimma University and a letter of cooperation was obtained from the Department of Information Science. This research would not enforce and deceives the participants and the respondents shall feel free and express their ideas without any internal and external pressures. Generally, all activities in this study were conducted in a legal way.

CHAPTER FOUR RESULT AND DISCUSSION

This chapter covers the presentation, analysis, and interpretation of data collected from primary sources. In order to collect data about challenges, and opportunities in the digital transformation of the tourism industry, along with the digital technologies affecting the digital future of tourism, A total of 400 questionnaires were distributed to utility consumers of tourism services and products, tourism service and product providers, and tourism experts in south-west Ethiopia. Out of the questionnaires distributed, 388 questionnaires were returned. Hence this chapter presents the analysis of the challenges, opportunities, and variables of the study and the results of the regression analysis that constitute the main findings of the study. All the data were coded and entered into SPSS version 25. Finally, inferences were made based on the statistical results.

4.1. Reliability Test

To ensure internal consistency among the items included in each of the scales, Cronbach's coefficient alpha is estimated. Higher Alpha coefficients indicate higher scale reliability. Specifically, (George & Mallery 2003) suggested that scales with 0.60 Alpha coefficients and above are considered acceptable. As shown in table 4.1 for the reliability test, Cronbach's Alpha coefficients for each variable range from 0.669 to 0.901, except to EPS variable which is recorded 0.544 which is very slightly less from the acceptable 0.60 Cronbach's Alpha coefficient. Based on the examination of the research scales and constructs, it can be concluded that each variable represents a reliable and valid construct.

Table 1: Results of the reliability test

Variables	Cronbach's Alpha Coefficient
Online Booking System (OBS)	0.901
Social Medias (SM)	0.848
Online Reviews (OLR)	0.847
E-Banking and Payment System (EPS)	0.544
Artificial Intelligence (AI)	0.669
Digital Future of Tourism (DFT)	0.850

4.2. Demographic Characteristics of the Respondents

As is shown in table 4.2 below, 303 of the respondents were male, which represents 78.1% of the total respondents, while 85 were females, which are 21.9% of the total respondents. Considering the age groups of the respondents, the highest number of respondents was in the range of 31–40 years, which represents 71.1%, followed by the age groups of 20–30 years, 41–50 years, and 51–60 years, which represent 15.2%, 12.6%, and 1.1%, respectively. When it comes to education level of the respondents, majority of the respondents were first degree holder which comprises 72.7%. Following it, holders of diplomas, master’s degrees, and high school complete represent 17.5%, 5.9%, and 3.9%, respectively. In terms of occupation, 78.9% of the respondents were employed (salaried), while the rest were students, businesspeople, unemployed and pensioners, which represent 8.2%, 7.2%, 3.6%, and 2.1%, respectively.

Table 2: Demographic characteristics of the respondents

Variables	Category	Frequency	Percent
Gender	Male	303	78.1
	Female	85	21.9
Age	20-30	59	15.2
	31-40	276	71.1
	41-50	49	12.6
	51-60	4	1.1
	>60	0	0
Education level	High school complete	15	3.9
	Diploma	68	17.5
	First degree	282	72.7
	Master’s degree	23	5.9
	Above Masters	0	0
Occupation	Business person	28	7.2
	Student	32	8.2
	Pensioner	8	2.1
	Unemployed	14	3.6
	Salaried	306	78.9

4.3. Challenges in the Digital Transformation of Tourism Industry

There are many challenges in the digital transformation of tourism industry, which are related to the different aspects of it. Some of these challenges are observed from the organizational point of view (internal barriers) and some are observed from the environmental point of view (external barriers). The figure below summarizes some of these challenges.

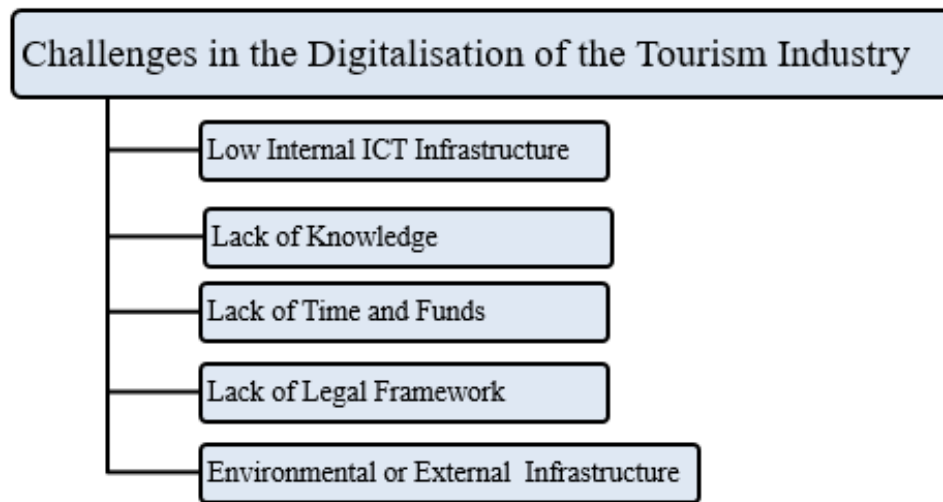


Figure 5: Challenges in the digital transformation of tourism industry

In what follows, a more detailed discussion about these challenges that were identified by leading experts within the field are presented with respect to the findings by the survey in South West Ethiopia. Thus, this section identifies internal and external barriers that the tourism businesses face when adopting new digital technologies. Internal barriers refer to barriers that arise inside the company and external barriers refer to the ones that arise from the external environment (Cordeiro & Vieira, 2012).

Table 3: Summary of survey findings for challenges

No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Lack of digital technology materials for digitization	4.4%	5.2%	47.4%	25.5%	17.5%
2	Lack of professionals to digitize the tourism sector	3.6%	48.5%	38.9%	9.0%	0
3	Lack of time and funds to support digitization in the tourism sector	4.4%	5.2%	47.4%	25.5%	17.5

4	Lack of digitization plan, policy and procedures in the tourism sector	20.1%	65.2%	13.4%	1.3%	0
5	Lack of concern from higher officials on digitization in the tourism sector	34.5%	36.3%	18.3%	9.3%	1.5%
6	There are technological, economic, political, environmental, infrastructural, and social problems	38.4%	35.3%	14.9%	11.3%	0

Digitalization is not only limited to e-businesses or digital start-ups in other industries; it will also affect tourism businesses, which, in order to be competitive on the market, have to adapt to a changing world. In order for these tourism businesses to achieve their goals, a better understanding of the challenges perceived by them when it comes to digitalization needs to be identified (Autio, 2017). An intensive study of the literature reveals that there are three major challenges identified as internal barriers, namely: low internal ICT infrastructure, lack of knowledge, and lack of time and financial funds. On the other hand, there are two major external barriers, namely, a lack of legal framework, and environmental or external infrastructure.

a) Low internal ICT infrastructure

In relation to the internal barriers, a study demonstrates that low ICT infrastructure, lack of awareness of new technologies, and financial resources may affect tourism businesses in the digital transformation (Chiwara & Dick, 2008). Moreover, Najda-Janoszka and Kopera argue that the tourism industry is characterized as being modest innovativeness due to the existing of a large proportion of them in tourism, and lack of resources and low awareness of the importance of adaptation of innovation (Najda-Janoszka & Kopera, 2014).

Respondents provide varying information, as shown in the table above, to assess the extent to which low internal ICT infrastructure affects tourism business. However, from the responses above, it can be seen that a significant number of respondents, i.e., around 47.4%, remained neutral to the challenge stated as "lack of digital technology materials for digitization," which is assumed to be one of the challenges in the digital transformation of the tourism industry. Among the respondents, 4.4% strongly agreed, and 5.2% agreed. The results from these attitude scales indicate a state of confusion among the respondents and a need for a better understanding of the challenge perceived by them when it comes to digitalization in the tourism industry.

b) Lack of knowledge

This challenge, namely the lack of knowledge, is another assumption that the tourism industry faces when it comes to digitalization. There is a need for awareness of the importance of digital transformation in order for the tourism industry to better innovate. A case study on tourism businesses conducted by McCamley and Gilmore (2017), concluded that tourism businesses have the potential to increase the innovativeness of the tourism industry by providing a sense of authenticity at the destination level when integrated into the tourism marketing system.

To assess to what extent a lack of knowledge affects the tourism business, respondents provide varying information as displayed in the above table. Thus, from the above responses, it can be seen that a significant number of the respondents, i.e., around 48.5%, agreed to the challenge stated as "lack of professionals to digitize the tourism sector," which is assumed to be one of the challenges in the digital transformation of the tourism industry. Among the respondents, 3.6% strongly agreed, and 38.9% remained neutral. The results from these attitude scales indicate that respondents agreed that a lack of knowledge is perceived by them as a deterministic challenge when it comes to digitalization in the tourism industry.

c) Lack of time and funds

Internal barriers include lack of time and funds to invest in the reinvention of tourism business models (Jensen, Tofalleti, Thornley, & Murnane, 2016). Lack of financial resources is characterizing the slow adoption of new digital technologies by tourism businesses resulting in small firms not being able to realize the benefits provided by digitalisation in the tourism industry (Mbuyisa, & Leonard, 2017).

To assess to what extent lack of time and funds affect tourism business, respondents provide varying information as displayed in the above table. However, from the above responses, it can be seen that a significant number of the respondents, i.e., around 47.4%, remained neutral to the challenge stated as "lack of time and funds to support digitization in the tourism sector," which is assumed to be one of the challenges in the digital transformation of the tourism industry. Among the respondents, 4.4% strongly agreed, and 5.2% agreed. The results from these attitude scales indicate a state of confusion among the respondents and a need for a better understanding of the challenge perceived by them when it comes to digitalization in the tourism industry.

d) Legal frameworks

When it comes to external barriers, legal frameworks can play a key role in the adoption of digitalization by tourism businesses (Mbuyisa, & Leonard, 2017). The legal framework can play a significant role in the adoption of digitalization, which could be reflected in barriers such as massive paperwork or different levels of legislation for tourism businesses. A case study reveals, for example, that among European Union member states, differences in regional and local government levels may be identified (European Committee of the Regions, 2018), which may result in a more in-depth struggle for tourism businesses in their digital transformation.

To assess to what extent the legal framework affects the tourism business, in this study, respondents provided varying information as displayed in the above table. Thus, from the above responses, it can be seen that a significant number of the respondents, i.e., around 65.2%, agreed to the challenge stated as "lack of digitization plan, policy, and procedures in the tourism sector," which is assumed to be one of the challenges in the digital transformation of the tourism industry. Likewise, around 36.3% agreed to the challenge stated as "a lack of concern from higher officials on digitization in the tourism sector," while 34.5% strongly agreed. According to the results of these attitude scales, respondents see the legal framework as a deterministic challenge when it comes to digitalization in the tourism industry.

e) Environmental or external infrastructure

Other external barriers for tourism businesses to digitalization identified among scholars are environmental, industry, and supplier or consumer pressures as external challenges that can affect the uptake of digitalization by tourism businesses (Konstantinou, 2016). Environmental pressure and infrastructure can significantly impact the adoption of new digital technologies by tourism businesses due to the very fragmentation of a country; for example, businesses situated in an urban environment may benefit from a better ICT infrastructure than those situated in rural or remote areas (Dredge et al., 2018).

To assess to what extent environmental or external infrastructure affects tourism business, the respondents provided varying information, as displayed in the above table. Thus, from the above responses, it can be seen that a significant number of the respondents, i.e., around 38.4%, strongly agreed to the challenge stated as "There are technological, economic, political,

environmental, infrastructural, and social problems," which is assumed to be one of the challenges in the digital transformation of the tourism industry. Among the respondents, 35.3% agreed, and 14.9% remained neutral. The results from these attitude scales indicate that environmental or external infrastructure is perceived as a deterministic challenge by the respondents when it comes to digitalization in the tourism industry.

In addition to the above quantitative analysis, a qualitative analysis was also made after analyzing the interesting assumptions made in response to the question, "What are other challenges you think people are facing when adopting digital technologies in the tourism industry?" Various respondents stated their different assumptions as one of the major possible challenges perceived by them when it comes to digitalization in the tourism industry. Their assumptions are summarized and presented as follows:

Peace and security issues: Intra-state conflict, terrorism, and the on-going war are the major security issues assumed as a challenge perceived by the respondents.

Lack of good governance: Deeper underlying lack of good governance or low quality public administration issues are also perceived by the respondents as a major challenge.

Corruption: Lack of transparency and accountability or corruption in public administration are also perceived by the respondents as a major challenge.

Lack of activism: Tourism related lack of activism or social movements is also perceived by the respondents as a major challenge.

Overall, an extensive study of the literature review reveals that various experts within the field forwarded several suggestions to overcome the above-mentioned challenges. In order to overcome these barriers, for instance, the European Commission is continuously launching strategies to support tourism businesses, such as upskilling programs (e.g., Digital Single Market, 2018), offering tourism businesses a better position in the global tourism market (TOURISMLink, 2012), and raising the level of digital skills in the workforce (Jensen, Tofalletti, Thornley, & Murnane, 2016), just to name a few. Nevertheless, the strategies proposed by the European Commission are generalized for the entire European Union, and in this sense, it has to be taken into consideration that among member states one can encounter different ICT

infrastructure, economic support, legislation, and so on. Furthermore, the willingness and even unwillingness of the tourism businesses to digitalise has to be taken into consideration. Buhalis and Deimezi identify that tourism businesses may have short-term profitability; they are characterized as having individualistic behavior and an unwillingness to collaborate on a destination level (Buhalis & Deimezi, 2004). Furthermore, it is argued that social and demographic factors play a key role in the willingness of business owners to adopt new digital technologies (Dredge et al., 2018). Hence, the individual mindset, the longterm perception, and the demographic factors may influence the uptake of digitalisation by tourism businesses.

4.4. Opportunities in the Digital Transformation of Tourism Industry

Though the digital transformation of the tourism industry was hampered by the above-mentioned major challenges, it may benefit from adopting digitalization to innovate in the sense that various innovations occurred due to digitalization. This could play a significant role in the visibility of the tourism businesses on the international market, which could further result in reaching new customers and implicitly contribute to the economic growth of the tourism businesses. This section discusses the opportunities created by digitalization in the tourism industry's digital transformation. In essence, a more detailed discussion about these opportunities that were identified by experts within the field is presented with respect to the survey findings in south-west Ethiopia.

Table 4: Summary of survey findings for opportunities

No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Digitization of the tourism sector enables accurate and on time dissemination of information about tourism sites	27.6%	49.2%	17.0%	4.4%	1.8%
2	Digitization of the tourism sector increases accessibility	26.5%	42.5%	17.0%	11.3%	2.6%
3	Digitization of the tourism sector creates job opportunity for youths	12.1%	23.2%	34.3%	21.6%	8.8%
4	Digitization of the tourism sector increases revenue	25.3%	51.5%	16.2%	5.2%	1.8%
5	Digitization of the tourism sector promotes online visits and online selling	35.1%	40.2%	12.4%	9.3%	3.1%
6	Digitization creates solutions regarding	0.8%	23.5%	37.4%	25.5%	12.9%

	travelling packages and services that suit personal needs and preferences					
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According to Barashok, I. V., et al. (2021) digitalisation has brought new possibilities for the Tourism industry. As a result, digitalisation in tourism makes the tourist business more flexible, adapted to modern condition and competitive in a dynamic digital world. Digitalisation offers new opportunities that can be exploited by providers in the tourism industry. At the same time competition is being intensified and companies have to keep pace with digitalisation in order to remain in the same level. Digitalisation can be the motor transformation for the tourism industry in the age of internet economy (Bauer, 2008). Especially for companies in the service sector like in the tourism industry, new digital technologies offer a great potential to achieve high sales (Dellarocas, 2003). Intensive study of the literature reveals that there are five major opportunities identified, namely as: High quality service, Job opportunity, high revenues, Big data generation, and Personalisation.



Figure 6: Opportunities in the digital transformation of the tourism industry

a) High quality service

A company with high service quality offers services that match or exceed its customers' expectations. Online platforms or intermediaries such as OTAs (Online Travel Agencies) like Expedia, Booking.com, TripAdvisor, etc., which represent a threat to traditional tourism agencies, offer the same quality products and, in some cases, higher quality for less money. Due to their nature as platforms for user-generated content, these platforms contribute to the decision

making of the consumers of tourism products while also having a significant impact on tourism planning (Xiang et al., 2015). Moreover, online wholesalers can benefit the distribution of products and services on a global scale, and by promoting their businesses online, the owners may benefit from increased visibility and exposure (Hua, 2016).

In this study, respondents provided varying information to assess the extent to which the opportunity for high-quality service is perceived in tourism businesses, as shown in the above table. Thus, from the above responses, it can be seen that a significant number of respondents, i.e., around 49.2%, agreed to the statement "Digitization of the tourism sector enables accurate and on-time dissemination of information about tourism sites," which is assumed to be one of the metrics used to provide high service quality in the digital transformation of the tourism industry. Likewise, around 42.5% agreed to the statement "Digitization of the tourism sector increases accessibility," while 26.5% strongly agreed. The results from these attitude scales indicate that high-quality service is perceived as an opportunity by the respondents when it comes to digitalization in the tourism industry.

b) Job opportunity

On a global scale, tourism has proven to be an economic sector that is essential for increasing employment in both the formal and informal sectors, improving quality of life, and attracting foreign exchange. The sector also serves as an alternative form of export, the improvement of a country's or region's balance of payments, and a general increase in economic activities. For these reasons, most developing countries have been focusing on tourism as an alternative for economic growth (Khalil, Kakar, & Malik, 2007; Valle & Yobesia, 2009; Kruja, Lufi, & Kruja, 2012).

To assess to what extent the creation of job opportunities is perceived in the digitalization of the tourism industry, respondents provide varying information, as displayed in the above table. However, from the above responses, it can be seen that a significant number of respondents, i.e., around 34.3%, remained neutral to the statement stated as "Digitization of the tourism sector creates job opportunities for youths," which is assumed to be one of the opportunities in the digital transformation of the tourism industry. Among the respondents, 12.1% strongly agreed, and 23.2% agreed. The results from these attitude scales indicate a state of confusion among the

respondents regarding a better understanding of the creation of job opportunities when it comes to digitalization in the tourism industry.

b) High Revenues

The tourism sector serves as an alternative form of export, the improvement of a country's or region's balance of payments, and a general increase in economic activities. For these reasons, most developing countries have been focusing on tourism as an alternative for economic growth (Khalil, Kakar, and Malik, 2007; Valle & Yobesia, 2009; Kruja, Lufi, and Kruja, 2012). In terms of social media platforms, it is argued that having user-generated content contributes to increased online revenues for tourism firms through increased online presence (Leung et al., 2013). Take, for example, Instagram, which is considered a current trend in the tourism industry and could improve the promotion and marketing of a destination (Hanan & Putit, 2014) and thus increase revenue through an online presence. With the emergence of Web 2.0, which refers to "the second generation of web-based services letting people collaborate and share information online in more sophisticated ways," (Goyal & Sharma, 2013, p. 45) An increasing number of businesses make use of websites such as Facebook, TripAdvisor, or YouTube in order to increase their competitiveness (Goyal & Sharma, 2013).

To assess to what extent the opportunity of high revenues is perceived in the tourism businesses, respondents provide varies information as displayed in the above table. Thus, from the above responses it can be seen that significant number of respondents i.e. around 51.5% agreed to the statement stated as "Digitization of the tourism sector increases revenue" which is assumed as one of the opportunities in the digital transformation of tourism industry. Among the respondents, 25.3% strongly agreed, and 16.2% remained neutral. The results from these attitude scales indicates that respondents agreed high revenues is perceived by them as an opportunity when it comes to digitalisation in the tourism industry.

c) Big data generation

With the proliferation of technology, digitalization in the tourism industry has garnered significant attention, mainly because it has allowed users from around the world to access new information. This has added to the growing amount of collected data that is already being generated through different devices and sensors employed around the world. One of the most

important benefits provided by digitalization is the use of big data, or the data left behind by tourists, with the digital footprint providing indicators of tourism demand at a destination level (Onder, Koerbitz, & Hubmann-Haidvogel, 2014). Thus, big data could be a pillar for tourism businesses to elaborate strategies in order to achieve visitor satisfaction.

Respondents provide varying information, as shown in the above table, to assess the extent to which the opportunity of big data generation is perceived in tourism businesses. Thus, from the above responses, it can be seen that a significant number of respondents, i.e., around 40.2%, agreed to the statement "Digitization of the tourism sector promotes online visits and online selling," which is assumed to be one of the main reasons for big data generation in the digital transformation of the tourism industry. Among the respondents, 35.1% strongly agreed, and 12.4% remained neutral. The results from these attitude scales indicates that respondents agreed the promotion of online visits and online selling as an opportunity when it comes to digitalisation in the tourism industry.

d) Personalization

The era of digital tourism started with the emergence of information websites; however, this targeted information flow used to be one-directional with narrow choices. In today's digital era, the new generation of commercial activities take place in VR or AR spaces, and the instant analysis of the customer's reactions and behavior support the enhancement of their buying willingness. The traditional decision making processes are gradually being replaced with personalized offers, further increasing the importance of artificial intelligence.

To assess to what extent the creation of job opportunities is perceived in the digitalization of the tourism industry, respondents provide varying information, as displayed in the above table. However, from the above responses, it can be seen that a significant number of respondents, i.e., around 37.4%, remained neutral to the statement "Digitization creates solutions regarding travel packages and services that suit personal needs and preferences," which is assumed to be one of the opportunities in the digital transformation of the tourism industry. Among the respondents, 0.8% strongly agreed, and 23.5% agreed. The results from these attitude scales indicate a state of confusion among the respondents when it comes to a better understanding of personalization opportunities when it comes to digitalization in the tourism industry.

In addition to the above quantitative analysis, qualitative analysis was also made after analyzing the forwarded interesting assumptions to the question “What are other opportunities you think when adopting digital technologies in the tourism industry?”. Various respondents stated their different assumptions as one of the major possible opportunities perceived by them when it comes to digitalisation in the tourism industry. Their assumptions are summarized and presented as follows:

Branding: Some of the respondents perceived that branding can be one of the major opportunities in the digital transformation of the tourism industry. Digitalisation of tourism industry brings opportunity of branding in the digital world. Branding can be for a company, country or a specific area.

Distance Working: Some of the respondents perceived that distance working can be one of the major opportunities in the digital transformation of the tourism industry. Digital transformation of the tourism industry enables tourism professional do their job effectively remotely.

Digital marketing: Some of the respondents perceived that digital marketing can be one of the major opportunities in the digital transformation of the tourism industry. Digital marketing is concerned with the marketing of products online through electronic devices. It is the easiest and most cost-effective way to reach large numbers of customers and enables you to target the people most likely to be interested in your product.

4.5. Digital Technologies in the Digital Transformation of Tourism Industry

There have been numerous identified digital innovations that have revolutionized the tourism industry when it comes to digitalization and the adoption of new technologies. In this subchapter, the quantitative analysis of the major digital innovations that have revolutionized the tourism industry is presented. In the study, the dependent variable is the digital future of tourism, while the independent variables are those digital technologies that are assumed to positively influence the digital transformation of the tourism industry in south-west Ethiopia. The digital technologies i.e., online booking system, social medias, online reviews, e-banking and payment system, and artificial intelligence were measured using 5-point Likert Scale. They are discussed in the literature review, and here below presented the quantitative analysis.

4.5.1. Online Booking System

To assess the level of awareness of the respondents about the benefits of an online booking system, nine statements were formulated, and the respondents were asked to state their level of agreement. The majority of them strongly agreed to almost all the statements. Among the respondents, 53.4% strongly agreed with the statement ‘I use online booking through the official site of the tourist business when booking a hotel/flight, etc.’ and 58.2% strongly agreed that they compare various tourist providers through online reservation systems. This result indicates that respondents are aware of the availability of online booking systems and their advantages and disadvantages. As stated on (Sathye 1999) an important characteristic for any adoption of an innovative service or product is creating awareness among the customers about the service or product.

Table 5: Summary of survey findings for online booking system

No.	Online Booking System (OBS)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I use tour operator when booking a hotel/flight etc.	42.0%	35.3%	9.0%	7.7%	5.9%
2	I use travel agency when booking a hotel/flight etc.	43.8%	34.5%	10.6%	9.0%	2.1%
3	I use online booking through the official site of the tourist business when booking a hotel/flight etc.	53.4%	21.9%	16.2%	6.7%	1.8%
4	I use online booking through third party platform (e.g. Booking.com) when booking a hotel/flight etc.	48.5%	13.1%	22.9%	13.7%	1.8%
5	Online booking gives more flexibility	34.5%	36.3%	18.3%	9.3%	1.5%
6	Online booking offers more attractive prices	38.4%	35.3%	14.9%	11.3%	0
7	Through online booking I can design my own travel based on my needs and interests	45.9%	33.5%	16.5%	3.9%	3%
8	Through online reservation systems I can obtain more information	41.8%	28.4%	23.5%	6.2%	3%
9	Through online reservation systems I can compare between various tourist providers	58.2%	29.6%	8.0%	3.9%	0.3%

4.5.2. Social Medias

To assess to what extent social media affects tourism business, respondents provide varying information, as displayed in the table below. Therefore, from the responses below, it can be seen that a significant number of respondents agreed that social media influences their decisions in the tourism business. Among the respondents, 50% strongly agreed that the presence of a tourism business on a social media platform affects their decision-making process. Similarly, the largest number of respondents, i.e., 62.1%, strongly agreed that the presence of a tourism business on social media platforms helps to conduct customer research. However, about 30.2% of them disagreed with the assumption that the presence of tourism businesses on social media platforms would create communities. This indicates that the trustworthiness of social media is under question when it comes to creating a strong community in south-west Ethiopia.

Table 6: Summary of survey findings for Social Medias

No.	Social Medias (SM)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I usually use social media platforms such as Facebook, Twitter, Instagram, YouTube, Pinterest, LinkedIn, Blogs, etc. in order to be in touch with the tourism business.	27.6%	43.8%	14.2%	14.2%	0.3%
2	The presence of a tourism business in social media platform helps to build a brand name	23.2%	39.7%	17.3%	17.8%	2.1%
3	The presence of a tourism business in social media platform helps to build consumer loyalty	40.7%	34.5%	11.3%	11.6%	1.8%
4	The presence of a tourism business in social media platform helps to influence consumer purchase intention	22.9%	37.4%	29.6%	9.5%	0.5%
5	The presence of a tourism business in social media platform helps to create a community	12.4%	27.6%	27.3%	30.2%	2.6%
6	The presence of a tourism business in social media platform helps to attract new advertisers	8.2%	26.8%	50.5%	13.7%	0.8%
7	The presence of a tourism business in social media platform helps to enhance word of mouth	21.9%	21.9%	28.1%	24.2%	3.9%
8	The presence of a tourism business in social media platform helps to get	8.8%	22.4%	40.5%	25.8%	2.6%

	feedback (Reviews and rankings)about customers' opinion on service quality					
9	The presence of a tourism business in social media platform helps to submit ideas for new services/products/discounts/offers	7.5%	27.8%	38.4%	20.4%	5.9%
10	The presence of a tourism business in social media platform helps to obtain general information about costumers' needs and wants	34.5%	21.6%	20.6%	22.2%	1.0%
11	The presence of a tourism business in social media platform helps to conduct customer researches	62.1%	22.9%	9.5%	5.2%	0.3%
12	The presence of a tourism business in social media platform affects my decision making process	50.0%	22.4%	21.1%	5.9%	0.5%

4.5.3. Online Reviews

To assess to what extent online reviews affect tourism business, respondents provide varies information as displayed in the table below. Hence, from the responses below it can be seen that significant number of respondents strongly agreed to all of the statements stated as items. Among the respondents, 55.4% strongly agreed that reviews of other customers in various social media platforms affect their decision-making process, and 74.5% of the respondents strongly agreed that they trust reviews, rankings and ratings concerning a tourism business in a social media platform. This result indicates that respondents trust the reviews given by others who experienced the services of tourism business.

Table 7: Summary of survey findings for Online Reviews (OLR)

No.	Online Reviews (OLR)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I usually participate in social communities in order to make reviews and comments about a tourism business after your tourist experience	73.7%	14.9%	6.4%	4.6%	.3%
2	I trust reviews, rankings and ratings concerning a tourism business in a social media platform	74.5%	16.8%	5.7%	2.6%	.5%
3	The reviews of other customers in	55.4%	27.8%	7.2%	8.2%	1.3%

various social media platforms affect my decision-making process					
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4.5.4. E-Banking and Payment System

According to the table below, 51.5% of respondents chose online banking services because of the convenience (24-hour service, anywhere connectivity) and ease of maintaining their banking transaction activity. 41.5% of the respondents strongly agreed when asked if using e-banking and payment systems would enable them to complete their activities more quickly and easily for their day to day needs. These result implies that using e-banking and payment system helps to perform day to day activities within a short period of time and also customers can access their account any time with no time limit. However, about 46.1% of them were neutral when asked if they would trust the security of e-banking and payment services.

Table 8: Summary of survey findings for Online Reviews (OLR)

No.	E-Banking and Payment System (EPS)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I choose online banking services due to its convenient services (24 hours service, anywhere connectivity) and easy to maintain my banking transaction activity	37.6%	51.5%	9.8%	0.8%	0.3%
2	I usually conduct personal financial transactions online such as purchases and services	44.1%	41.0%	12.9%	2.6%	2.1%
3	I trust the security of e-banking and payment services	9.3%	39.4%	46.1%	5.2%	0
4	Using e-banking and payment systems make my life easier	15.5%	41.5%	33.8%	9.0%	0.3%

4.5.5. Artificial Intelligence

To assess the level of awareness of the respondents about the role of artificial intelligence in the digital world, three statements were formulated, and the respondents were asked to state their level of agreement. The majority of them agreed to all the statements. Among the respondents, 39.2% agreed that they usually use their mobile phone for communication with their virtual personal assistant. 58.2% of the respondents agreed that AI based solutions regarding travelling packages and services suits their need and preferences. This result indicates that respondents are aware of the role AI plays in creating personalized offers for consumers.

Table 9: Summary of survey findings for Artificial Intelligence (AI)

No.	Artificial Intelligence (AI)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I usually use my Mobile phone for communication with virtual personal assistant such as chatbot	17.0%	39.2%	20.4%	21.1%	2.3%
2	I am aware that AI plays a huge role in creating personalized offers for consumers	3.6%	48.5%	38.9%	9.0%	0
3	AI based solutions regarding travelling packages and services suits my needs and preferences	20.1%	65.2%	13.4%	1.3%	0

4.6. Influence of the Digital Technologies to the Digital Future of Tourism

In-depth analysis of the literature reveals that, according to the forecasts of product development strategies in various industries, almost all of our everyday objects and equipment will be accessible through the internet in the future. As a result, all devices that are capable of two-way communication will fall under the framework of the IoT (Internet of Things). The devices of the future, unlike the devices of today, will communicate in a bidirectional way, where robust, safe data handling, personalized differentiation, and sufficient decision management will be part of the user experience. As a result of the continuous data collection during the use of these devices, all relevant information will eventually end up in a final, centralized system at the top of the dataset.

Therefore, in the study, information about the dependent variable, i.e., the digital future of tourism, was also collected from the survey participants to analyze the influence of digital technologies on the digital future of tourism. To assess the level of the respondent's interest in the digital future of tourism, ten statements were formulated, and the respondents were asked to state their level of agreement. The majority of them agreed to almost all the statements. As it is shown in the table below, 51% of the respondents agreed that they are interested in mobile applications that would allow them to share their visit with other people (e.g., see where others are, communicate, use hypermedia related to the locations in the destination, and share information about the visit). 62.1% of the respondents strongly agreed when asked if they were interested in mobile electronic guides and maps. These results imply that respondents are interested in the use of digital technologies, which are assumed to have an influence on the digital future of tourism, in their tourism-related activities.

Table 10: Summary of survey findings for the Digital Future of Tourism (DFT)

No.	The Digital Future of Tourism (DFT)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	I am interested in Mobile application that would allow me to share my visit with other people (e.g. see where others are, communicate, use hypermedia related to the locations in the destination, and share information about the visit)	27.6%	51.0%	17.0%	4.1%	.3%
2	I am interested in Mobile electronic guides and maps	62.1%	26.8%	8.8%	2.3%	0
3	I am interested in Mobile system allowing the tourists to communicate and discuss their visit when they got home	34.5%	36.3%	18.3%	9.3%	1.5
4	I am interested and attracted by overlaying icons representing attractions onto maps	34.8	40.2	21.1	3.9	
5	I am interested in Mobile systems presenting the positions of tourist	12.1	23.2	34.3	21.6	8.8
6	I am interested in Mobile System that would allow the destination to monitor tourist flows	3.6	42.0	48.7	5.7	
7	I am interested in a global platform	25.3	51.5	16.2	5.2	1.8

	for tourism to generate information and provide cloud services to tourist businesses					
8	I am interested in a transmedia storytelling tour guide	66.0	23.5	7.2	3.1	.3
9	I am interested in a game developed for tourists providing experiences	38.4	35.3	14.9	11.3	
10	I am interested in solutions regarding travelling packages and services that suit my personal needs and preferences	57.2	36.3	5.7	0.5	.3

The researcher also used descriptive statistics to analyze the digital technologies that determine the digital future of tourism. The results for each variable are shown in the table below.

Table 11: Summary of the descriptive statistics

Variables	Mean	Std. Deviation
Digital Future of Tourism (DFT)	3.9559	.55809
Online Booking System (OBS)	4.0905	.76001
Social Medias (SM)	3.6198	.62452
Online Reviews (OLR)	4.4905	.75752
E-Payment Systems (EPS)	3.9207	.49546
Artificial Intelligence (AI)	3.6579	.61717

With regard to respondents' level of agreement, the results presented in the above table show the overall score. On variable-by-variable basis, it is noted that the mean values range from 3.6198 to 4.4905 with 4.0 as a level of agree in the scale. These mean values are high, which suggests that respondents agreed that they have sound awareness and interest in the use of digital technologies that influence the digital future of tourism.

4.7. Diagnostic Test Results of Multiple Linear Regression Model Assumptions

Before further analysis is made on the collected data, the basic assumptions of multiple linear regression model have to be tested. The following sections discuss the results of the diagnostic tests (i.e. normality, linearity, multicollinearity, heteroscedasticity and autocorrelation) that ensure whether the data fits the basic assumptions of multiple linear regression model or not.

4.7.1. Normality

Normality test is used to determine whether the error term is normally distributed. In other words, it requires a normal distribution applies to the residuals. In this study, histogram and Q-Q plot are used for normality test. From the plots shown below, the residuals show high normality of distribution. This confirms that there was no evidence for the presence of abnormality in the data.

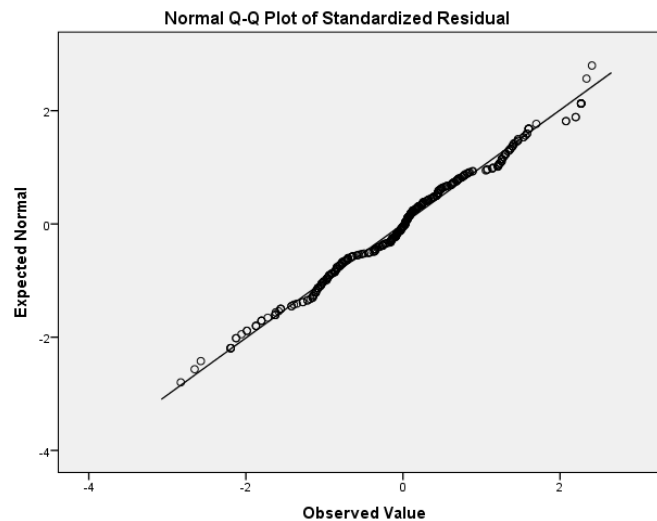
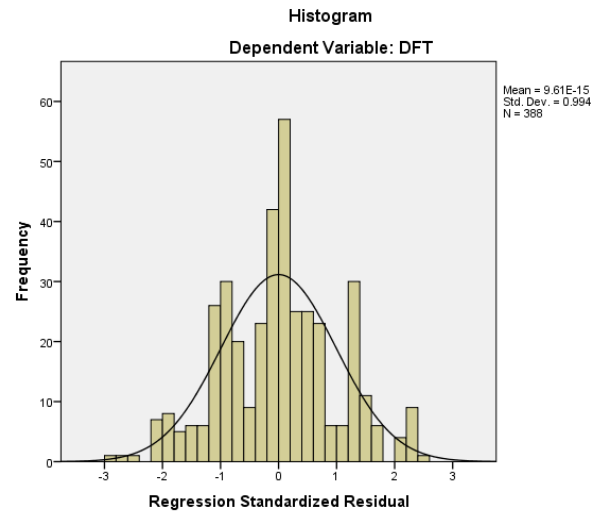


Figure 7: Normality test using histogram plot and Q-Q plot

4.7.2. Linearity

Linearity means that the predictor variables in the regression have a straight-line relationship with the outcome variable. It is assumed that there is a linear relationship between the predictors and the outcome. In this study, P-P plot is used for linearity test.

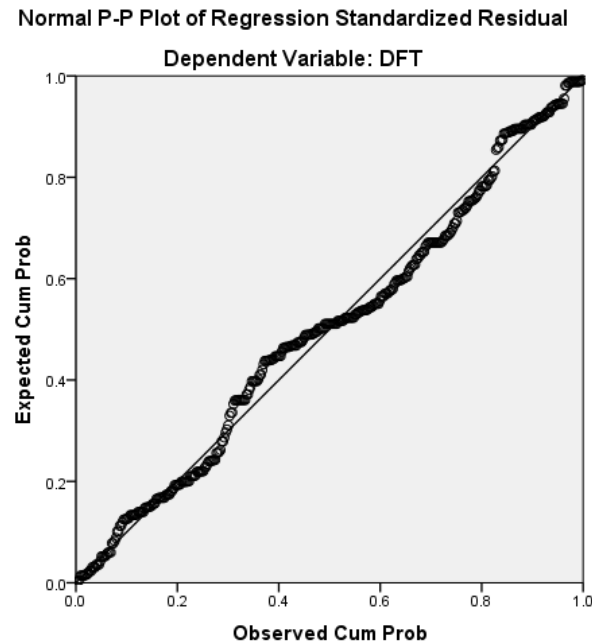


Figure 8: Linearity test using P-P plot

If we examine a normal Predicted Probability (P-P) plot, it can be determined if the residuals are normally distributed. If they are, they will conform to the diagonal normality line indicated in the plot. From the P-P plot shown above, the residuals show high normality of distribution. This confirms that there is a linear relationship between the predictors and the outcome.

4.7.3. Multicollinearity

According to Brooks (2008), multicollinearity will occur if some or all of the independent variables are highly correlated with one another. It shows the regression model has difficulty in explaining which independent variables are affecting the dependent variable. If multicollinearity problem is too serious in a model, either additional important variable should be added or unimportant independent variable should be dropped. This study uses VIF and Tolerance to detect the existence of multicollinearity. Generally, a VIF above 4 or Tolerance below 0.25 indicates that multicollinearity might exist, and further investigation is required. When VIF is

higher than 10 or Tolerance is lower than 0.1, there is significant multicollinearity that needs to be corrected.

Table 12: Multicollinearity

		Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.972	.140		6.958	.000		
	OBS	.381	.032	.519	12.015	.000	.435	2.300
	SM	-.129	.045	-.144	-2.863	.004	.322	3.105
	OLR	.226	.029	.307	7.866	.000	.534	1.873
	EPS	.086	.041	.076	2.115	.035	.622	1.608
	AI	.146	.051	.162	2.872	.004	.256	3.913

a. Dependent Variable: DFT

Table 12 above shows that there is no value of VIF higher than 10, in fact, the maximum value of VIF is below 4. Likewise, there is no value of Tolerance less than 0.1. Thus, it can be concluded that there is no multicollinearity problem in the explanatory variables selected to investigate the influence of digital technologies in the digital future of tourism in South West Ethiopia.

The Pearson correlation analysis is also given in the table below. The correlation values in this study are in the range of 0.343 to 0.811 between the variables which signify a positive correlation. As a result, no multicollinearity problem was revealed since none of the correlation values have higher than 0.90 coefficient in this research.

Table 13: Pearson correlation to test multicollinearity

		Correlations					
		DFT	OBS	SM	OLR	EPS	AI
Pearson Correlation	DFT	1.000	.782	.460	.694	.530	.591
	OBS	.782	1.000	.564	.645	.524	.653
	SM	.460	.564	1.000	.500	.343	.811
	OLR	.694	.645	.500	1.000	.475	.541
	EPS	.530	.524	.343	.475	1.000	.522
	AI	.591	.653	.811	.541	.522	1.000

4.7.4. Heteroscedasticity

When the distribute of the errors is different, varying depending on the value of one or more of the independent variables, the error terms are heteroskedastic (Brooks 2008). Heteroscedasticity test is very important because if the model consists of heteroscedasticity problem, the OLS (Ordinary Least Square) estimators are no longer best and error variances are incorrect, therefore the hypothesis testing, standard error and confident level will be invalid. To detect the presence or absence of heteroscedasticity in a data, can be done in several ways, one of them is by looking at the scatterplot graph output. The principle of heteroscedasticity test with this method is to see the scatterplot graph between the predictive value of the independent variable that is ZPRED with the residue of SRESID. If there is a particular pattern in the scatterplot graph, such as the points that form a rectangular pattern, it can be concluded that there has been a problem of heteroscedasticity.

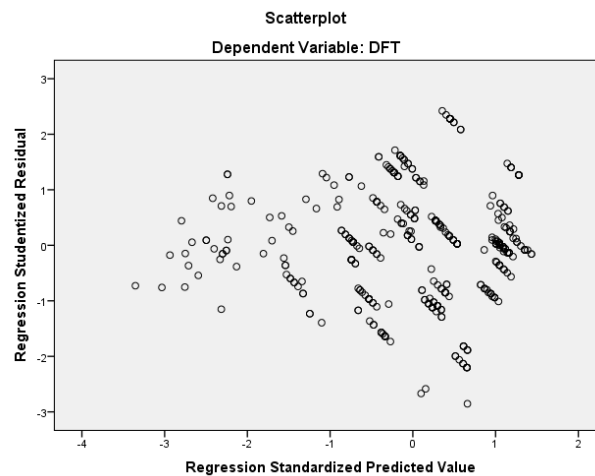


Figure 9: Scatter plot for heteroscedasticity test

Based on the scatterplot output above, it appears that the spots are diffused and do not form a clear specific pattern. So it can be concluded that the regression model does not occur heteroscedasticity problem in this particular study.

4.7.5. Autocorrelation Error

It is assumed that the distribution errors are uncorrelated with one another and that the errors are linearly independent of one another. Autocorrelation error occurs when the error term for any observation is related to the error term of other observation. In this study, the Durbin-Watson Test is used to carry out the autocorrelation test. The Durbin-Watson test produces a test statistic

that ranges from 0 to 4. Ideally its value should be near 2. Values above 3 or below 1 are strong indicators of correlated residuals.

The hypothesis for the autocorrelation test was formulated as follows:

H0: There is no autocorrelation problem.

H1: There is autocorrelation problem.

Decision Rule: Reject H0 if DW value is less than 1 or above 3. Otherwise, do not reject H0.

Table 14: Autocorrelation error using the Durbin-Watson test

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.830 ^a	.690	.685	.31299	1.870

a. Predictors: (Constant), AI, EPS, OLR, OBS, SM

b. Dependent Variable: DFT

From the above table it can be concluded that this research does not reject the null hypothesis (H0), since the DW value is 1.870. Thus it can be concluded that the model does not consist of autocorrelation problem.

4.8. Hypothesis Testing Using Multiple Linear Regression

Since correlation analysis do not provide enough information to make a proper decision regarding the relationships between the variables, multiple regression has been used to test the hypothesis for the independent and dependent variables. The study was done based on the following research hypothesis which were derived from the conceptual framework and tested in this study.

H1: Online booking system has a positive influence on the digital Future of Tourism.

H2: Social medias has a positive influence on the digital Future of Tourism.

H3: Online reviews has a positive influence on the digital Future of Tourism.

H4: E-banking and payment system has a positive influence on the digital Future of Tourism.

H5: Artificial intelligence has a positive influence on the digital Future of Tourism.

This section discusses in detail the analysis of the results for each independent variable and their significance in influencing the digital future of tourism. Furthermore, the discussion analyzes the statistical findings of the study in relation to the previous empirical evidences. The result for each set of influencing digital technologies is discussed as follows.

Table 15: Multiple Linear Regression Model Summary

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.830 ^a	.690	.685	.31299	1.870

a. Predictors: (Constant), AI, EPS, OLR, OBS, SM

b. Dependent Variable: DFT

In the above table 15 the regression model presents how much of the variance in the digital future of tourism is explained by the underlying influencing factors. The model or the predictor variables have accounted for 69% of the variability. This means more than 69% of variations in the digital future of tourism in South West Ethiopia were explained by the independent variables included in the model. However, the remaining 31% changes in the digital future of tourism in South West Ethiopia are caused by other factors that are not included in the model.

Table 16: ANOVA

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	83.112	5	16.622	169.676	.000 ^b
	Residual	37.423	382	.098		
	Total	120.535	387			

a. Dependent Variable: DFT

b. Predictors: (Constant), AI, EPS, OLR, OBS, SM

The overall significance or acceptability of the model from a statistical perspective can be measured using the significance value of F statistic (.0000), which is less than $p < 0.05$, meaning the model is significant. This indicates that the variation explained by the model is not due to probability and is valid.

The Beta coefficients are important for both prediction and interpretive purposes; however, analysts usually look first to the t test to determine which independent variables are significantly related to the outcome variable. Because all variables are in the equation to be tested if there is a linear relationship between each independent variable and the dependent variable after adjusting for the effects of the other independent variables.

Table 17: The Beta coefficients

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.972	.140		6.958	.000
	OBS	.381	.032	.519	12.015	.000
	SM	-.129	.045	-.144	-2.863	.004
	OLR	.226	.029	.307	7.866	.000
	EPS	.086	.041	.076	2.115	.035
	AI	.146	.051	.162	2.872	.004

a. Dependent Variable: DFT

Betas are standardized regression coefficients (values range between -1 and +1) and are used to judge the relative importance of each of the independent variables. The larger the value, the greater the importance of the variable. The result point to a positive linear relationship between the Digital Future of Tourism and the independent variables employed in the study. From the analysis, in South West Ethiopia, the most important predictor from the digital technologies is Online Booking System (OBS). It is the most significant determinant of the Digital Future of Tourism in South West Ethiopia. This is evident from the fact that the independent variable Online Booking System has the highest beta coefficient values of 0.519 compared to all the other variables. Following it, Online Reviews (OLR), Artificial Intelligence (AI) and Social Medias (SM) are the remaining most significant determinant. However, E-Payment System (EPS) is insignificant determinant of the Digital Future of Tourism in South West Ethiopia. Further investigation needs to be done to grasp the reason behind it.

The b-coefficients dictate our regression model:

$$DFT = 0.972 + 0.519*OBS - 0.144*SM + 0.307*OLR + 0.076*EPS + 0.162*AI$$

4.8.1. Online Booking System

As it can be seen on table 17 the coefficient of online booking system (OBS) is 0.519 and P-value is 0.000. Holding other explanatory variables constant, online booking system digital technology was found to have a positive and statistically significant influence on the digital Future of Tourism. Therefore, the researcher failed to reject the null hypothesis that stated online booking system has a positive effect on the digital future of Tourism. This means, there is sufficient evidence to support the positive relationship between online booking system and the digital future of Tourism.

4.8.2. Social Medias

The results in Table 17 show that social media has a coefficient of -0.144 and a p-value of 0.000. Holding other explanatory variables constant, social media was found to have a negative and statistically significant influence on the digital future of tourism. Therefore, this leads to the rejection of the null hypothesis that stated social media would have a positive effect on the digital future of tourism. The possible reason for the adverse effect of social media on the digital future of tourism could be attributed to the fact that the trustworthiness of social media is under question when it comes to creating a strong community.

4.8.3. Online Reviews

As it can be seen in the above table 17, the coefficient of online reviews is 0.307 and its P-value is 0.000. Holding other explanatory variables constant, online reviews was found to have a positive and statistically significant influence on the digital Future of Tourism. Therefore, the researcher failed to reject the null hypothesis that stated online reviews has a positive effect on the digital future of Tourism. This means, there is sufficient evidence to support the positive relationship between online booking system and the digital future of Tourism.

4.8.4. E-Banking and Payment System

As it is shown in table 17, the coefficient of e-banking and payment systems is 0.076 with a p-value of 0.35. It can be seen that maintaining other explanatory variables constant, such as e-banking and payment systems, had a positive but statistically insignificant impact on the digital future of tourism, as its value of significance was greater than 0.05. Therefore, the researcher failed to reject the null hypothesis that stated e-banking and payment systems have a positive effect on the digital future of tourism. This implies that there is no significant relationship between e-banking and payment systems and the digital future of tourism. This suggests that this variable is not an essential factor in influencing the digital future of tourism in south-west Ethiopia.

4.8.5. Artificial Intelligence

As it can be seen in the above table 17, the coefficient of artificial intelligence is 0.162 and its P-value is 0.000. Holding other explanatory variables constant, artificial intelligence was found to have a positive and statistically significant influence on the digital future of tourism. Therefore, the researcher failed to reject the null hypothesis that stated artificial intelligence has a positive effect on the digital future of tourism. This means, there is sufficient evidence to support the positive relationship between artificial intelligence and the digital future of tourism.

4.8.6. Conceptual Framework of the Study

It is argued that the decision to use technological innovation within businesses is driven by technology, organization, and environment (Fuchs, Scholochov&Höpken, 2010) which also can be characterized as the drivers of e-commerce (IntanSalwani et al., 2009). Furthermore, Oliveira and Martins describe three features that may affect the decision of adoption of technologies: technological context referring to existing and new technologies that may be relevant for a business, organizational context referring to the scope and size of the business, and the environment context referring to the industry competitors and government which exist in the near environment of the business (Oliveira & Martins, 2010). As such, the tourism businesses need to be aware of the digital technologies, which are relevant for their business, an argument that will be further discussed in the analysis phase of this thesis. In the same time, they have to

be open-minded to adopt digitalisation and receive support from the competitors and government from their near environment.

The support in the digital transformation of the tourism businesses in South West Ethiopia is intended to be identified in this thesis. The paper attempts to identify the different tourism stakeholders that could ease the transformation of tourism businesses. Based on the in-depth analysis of the literature and major findings, the following conceptual framework is designed.

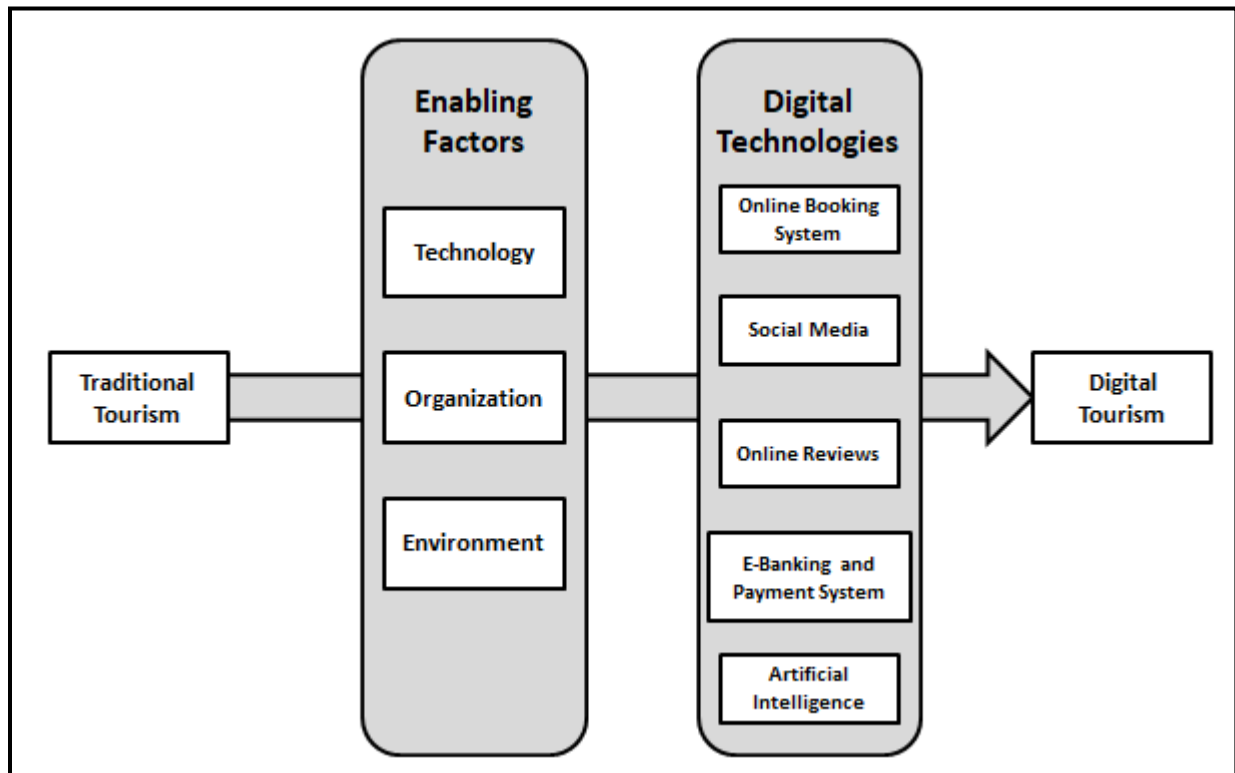


Figure 10: Conceptual framework of the study

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

The tourism industry is a key driver of socio-economic development, being considered one of the fastest-growing industries around the world. During the last few decades, tourism has faced a series of changes due to the rise of the Internet. Digitalization facilitated a series of innovations that contributed to the reshaping of tourism as an industry. Digitalization has revolutionized tourism enterprises and destinations. The constant appearance of digital technologies has affected both sides of the tourism industry, namely the consumer and the provider. In order for tourism businesses to achieve their goals, a better understanding of the challenges perceived by the consumer and the provider when it comes to digitalization needs to be identified. Nevertheless, the consumers of the tourism products and services facilitate the marketing of a destination by consuming and, at the same time, producing a destination. The challenges posed by digitalization on the provider side of tourism are amplified for tourism businesses due to their lack of knowledge and resources. Nevertheless, benefits are also provided by digitalization, and by seizing them, the tourism businesses could thrive in a digital environment.

Therefore, this study attempts to investigate the challenges, opportunities, and digital technologies in the digital transformation of the tourism industry in south-west Ethiopia. As such, this research sets out to answer the proposed research questions, stated as follows: What are the challenges for the digital transformation of the tourism industry in south-west Ethiopia? What are the opportunities in the digital transformation of the tourism industry in south-west Ethiopia? What digital technologies influence the digital transformation of the tourism industry in south-west Ethiopia? To what extent is the proposed conceptual framework accepted by different actors in the tourism industry? In order to collect data about challenges and opportunities in the digital transformation of the tourism industry, along with the digital technologies affecting the digital future of tourism, questionnaires were distributed to utility consumers of tourism services and products, tourism service and product providers, and tourism experts in south-west Ethiopia. Based on the responses obtained from the questionnaires distributed, a discussion of key findings and insights under each research question was analyzed and identified.

An intensive study of the literature reveals that there are three major challenges identified as internal barriers, namely: low internal ICT infrastructure, lack of knowledge, and lack of time and financial funds. On the other hand, there are two major external barriers, namely, a lack of legal framework and environmental or external infrastructure. This research thus reveals that tourism actors agreed that a lack of knowledge, a legal framework, or environmental or external infrastructure is perceived by them as a deterministic challenge when it comes to digitalization in the tourism industry in south-west Ethiopia. However, the study reveals that there is a state of confusion among the respondents when it comes to a better understanding of the challenges posed by low internal ICT infrastructure and a lack of time and financial funds when it comes to digitalization in the tourism industry. In addition, various assumptions such as peace and security issues, a lack of good governance, corruption, and a lack of activism are perceived as major possible challenges when it comes to digitalization in the tourism industry in south-west Ethiopia.

Though the digital transformation of the tourism industry was hampered by the above-mentioned major challenges, it also benefited from adopting digitalization to innovate in the sense that various innovations occurred due to digitalization. A detailed discussion about these opportunities that were identified by experts within the field is presented with respect to the survey findings in south-west Ethiopia. Some of these major opportunities include high-quality service, job opportunities, high revenues, big data generation, and personalization. This research thus reveals that tourism actors agreed that high-quality service, high revenues, and big data generation are perceived by them as major opportunities when it comes to digitalization in the tourism industry in south-west Ethiopia. However, the study reveals that there is a state of confusion among the respondents when it comes to a better understanding of job opportunity and personalization as major opportunities when it comes to digitalization in the tourism industry. In addition, various assumptions such as branding, distance working, and digital marketing are perceived as major possible opportunities in the digital transformation of the tourism industry in south-west Ethiopia.

When it comes to digitalization and the adoption of new technologies, various identified digital innovations have revolutionized the tourism industry. In the study, the identified dependent variable, i.e., the digital future of tourism, and the independent variables, i.e., the online booking system, social media, online reviews, e-banking and payment systems, and artificial intelligence, were assumed to positively influence the digital transformation of the tourism industry in south-west Ethiopia. However, based on multiple linear regression analysis, the study yields a variety of results. Holding other explanatory variables constant, online booking systems, online reviews, and artificial intelligence were found to have a positive and statistically significant influence on the digital future of tourism. Therefore, the researcher failed to reject the null hypothesis that stated these variables have a positive effect on the digital future of tourism. However, the study reveals that social media was found to have a negative and statistically significant influence on the digital future of tourism. The possible reason for the adverse effect of social media on the digital future of tourism could be attributed to the fact that the trustworthiness of social media is under question when it comes to creating a strong community. Likewise, e-banking and payment systems were found to have a positive but statistically insignificant impact on the digital future of tourism. This implies that there is no significant relationship between e-banking and payment systems and the digital future of tourism. This suggests that this variable is not an essential factor in influencing the digital future of tourism in south-west Ethiopia.

5.2. Recommendations

Based on the above findings, the following suggestions to improve the digital transformation of tourism industry in South West Ethiopia are put forwarded.

- The recent infrastructure development by Ethio Telecom has accelerated digital transformation in various sectors of the country, both increasing the utility of Internet access and underlining the apparent promise of digital economies. But this has also led to compelling insights into growing inequalities among end users, leading to the need for greater efforts to help reduce the divides within and across digital economies. Therefore, this thesis stressed the need for knowledge creation regarding digitalisation at local levels. Info sessions and social activism on the benefits of digitalization could enhance the digital mindset of tourism actors.

- Daily technological progress has led to the digital transformation of the global economy, strongly impacting all aspects of our lives and our economic security. The new technologies that underpin the Fourth Industrial Revolution are having a major impact on business, trade, and transport as well as the traditional ways of employment, working time and space. Beyond significant lifestyle changes, these technologies are leading to the formation of new economic models as well as new forms of governance. The emerging and fast-evolving implications of digital transformation are not only leading to progress and prosperity, but also to the emergence of new or enhanced security threats and challenges. Therefore, in addition to new and existing policy efforts relevant to digital economies, more supportive data governance frameworks (e.g., data protection laws and cybersecurity strategies) and better resourced institutions (e.g., information regulators) are needed at local or regional levels, to address security risks.
- Financial assistance to develop the infrastructure in the remote areas could facilitate the tourism businesses located in those areas' striving to grow. This, in turn, may eventually reduce the environmental or infrastructure problem in general.
- In the digital transformation of the tourism industry, awareness of the digital transformation must become part of every aspect of life, from doing business to alleviating poverty. Tourism businesses can capitalize on the opportunity of online branding and global visibility by implementing new or existing digital technologies. Therefore, by harvesting the facilitations provided by digitalization in terms of digital platforms, the tourism businesses may reach the level of e-business, which could enhance communication with existing consumers and the acquisition of new ones.
- The final recommendation to researchers, in future works, researchers should consider to take elements in to account that can provide research understanding of why tourists develop emotional connection to tourist destinations and the impact of these emotional connections to the digital future of the tourism industry in south west of Ethiopia.

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Appendix I: The Questionnaire used in the study

**Jimma University
Jimma Institute of Technology
Faculty of Computing and Informatics
Department of Information Science (MSc in IKM)**

Dear respondents:

My name is Nebiyat Jihad, postgraduate student (Msc. in IKM) in the Department of Information Science, Faculty of Computing and Informatics, Jimma Institute of Technology, Jimma University. The aim of this questionnaire is to investigate the challenges and opportunities of digitization for tourism industry transformation in South West Ethiopia, and thereby used to identify the challenges and opportunities in the tourism sector due to the continuous evolution and penetration of technology in the current digital era. I would like to assure that the information you provide will be used only for the research purpose and kept confidential. Your genuine responses are regarded as a great input to the quality of the research outcomes. Hence, I do believe that you will assist me by participating in the study, and your honest and thoughtful responses are invaluable.

Thank you in advance for your participation!

With Best Regards!

Part 1: Questionnaires

Section I. Demographic Profile of Respondents

This section is about the demographic profile of the respondents. Please indicate your responses to the following questions by ticking (√) on the spaces provided.

1. Gender

Male Female

2. Age

20-30 31-40 41-50 51-60 Above 60

3. Education Level

High School complete Diploma First degree

Master’s Degree Above Masters

4. Occupation

Businessperson Student Pensioner

Unemployed Salaried

5. Marital status

Married Divorced Single Widow (er)

Section II. Challenges of digitization that hinders the transformation of tourism

Here below is list of statements related to the challenges of digitization that hinders the transformation of the tourism sector. Please indicate whether you agree or disagree with each statement by ticking (√) in the spaces that specifies your choice from the options ranging from “strongly agree” to “strongly disagree”. Each choice is identified by numbers ranged from 1 to 5.

	Statements about challenges of digitization that hinders the transformation of tourism	SA	A	N	DA	SD
		5	4	3	2	1

1.1	Lack of digital technology materials for digitization					
1.2	Lack of professionals to digitize the tourism sector					
1.3	Lack of time and funds to support digitization in the tourism sector					
1.4	Lack of digitization plan, policy and procedures in the tourism sector					
1.5	Lack of concern from higher officials on digitization in the tourism sector					
1.6	There are technological, economic, political, environmental, infrastructural, and social problems					

1. What are the challenges you think people are facing when adopting digital technologies in the tourism industry?

Section III. Opportunities in the digital transformation tourism industry

Here below is list of statements related to the opportunities in the digital transformation of the tourism industry. Please indicate whether you agree or disagree with each statement by ticking (√) in the spaces that specifies your choice from the options ranging from “strongly agree” to “strongly disagree”. Each choice is identified by numbers ranged from 1 to 5.

	Statements about opportunities in the digital transformation of the tourism industry	SA	A	N	DA	SD
		5	4	3	2	1
1.1	Digitization of the tourism sector enables accurate and on time dissemination of information about tourism sites					
1.2	Digitization of the tourism sector increases accessibility					
1.3	Digitization of the tourism sector creates job opportunity for youths					
1.4	Digitization of the tourism sector increases revenue					
1.5	Digitization of the tourism sector promotes online visits and online selling					
1.6	Digitization creates solutions regarding travelling packages and services that suit personal needs and preferences					

2. What are the opportunities you think when adopting digital technologies in the tourism industry?

Section IV. Digital technologies in the digital transformation of the tourism industry

Here below is list of statements related to the digital technologies in the digital transformation of the tourism sector. Please indicate whether you agree or disagree with each statement by ticking (√) in the spaces that specifies your choice from the options ranging from “strongly agree” to “strongly disagree”. Each choice is identified by numbers ranged from 1 to 5.

Note: SA – Strongly Agree = 5 A-Agree =4 N-Neural =3 DA – Disagree =2, SD- Strongly Disagree = 1

		SA	A	N	DA	SD
1. Online Booking System		5	4	3	2	1
1.1	I use tour operator when booking a hotel/flight etc.					
1.2	I use travel agency when booking a hotel/flight etc.					
1.3	I use online booking through the official site of the tourist business when booking a hotel/flight etc.					
1.4	I use online booking through third party platform (e.g. Booking.com) when booking a hotel/flight etc.					
1.5	Online booking gives more flexibility					
1.6	Online booking offers more attractive prices					
1.7	Through online booking I can design my own travel based on my needs and interests					
1.8	Through online reservation systems I can obtain more information					
1.9	Through online reservation systems I can compare between various tourist providers					
		SA	A	N	DA	SD
2. Social Medias		5	4	3	2	1
2.1	I usually use social media platforms such as Facebook, Twitter, Instagram, YouTube, Pinterest, LinkedIn, Blogs, etc. in order to be in touch with the tourism business.					
2.2	The presence of a tourism business in social media platform helps to build a brand name					
2.3	The presence of a tourism business in social media platform helps to build consumer loyalty					

2.4	The presence of a tourism business in social media platform helps to influence consumer purchase intention					
2.5	The presence of a tourism business in social media platform helps to create a community					
2.6	The presence of a tourism business in social media platform helps to attract new advertisers					
2.7	The presence of a tourism business in social media platform helps to enhance word of mouth					
2.8	The presence of a tourism business in social media platform helps to get feedback (Reviews and rankings) about customers' opinion on service quality					
2.9	The presence of a tourism business in social media platform helps to submit ideas for new services/products/discounts/offers					
2.10	The presence of a tourism business in social media platform helps to obtain general information about costumers' needs and wants					
2.11	The presence of a tourism business in social media platform helps to conduct customer researches					
2.12	The presence of a tourism business in social media platform affects my decision making process					
3. Online Reviews						
		SA	A	N	DA	SD
		5	4	3	2	1
3.1	I usually participate in social communities in order to make reviews and comments about a tourism business after your tourist experience					
3.2	I trust reviews, rankings and ratings concerning a tourism business in a social media platform					
3.3	The reviews of other customers in various social media platforms affect my decision-making process					
4. E-Banking and Payment System						
		SA	A	N	DA	SD
		5	4	3	2	1
4.1	I choose online banking services due to its convenient services (24 hours service, anywhere connectivity) and easy to maintain my banking transaction activity					
4.2	I usually conduct personal financial transactions online such as purchases and services					
4.3	I trust the security of e-banking and payment services					
4.4	Using e-banking and payment systems make my life easier					
5. Artificial Intelligence						
		SA	A	N	DA	SD

		5	4	3	2	1
5.1	I usually use my Mobile phone for communication with virtual personal assistant such as chatbot					
5.2	I am aware that AI plays a huge role in creating personalized offers for consumers					
5.3	AI based solutions regarding travelling packages and services suits my needs and preferences					
6. The Digital Future of Tourism						
		SA	A	N	DA	SD
		5	4	3	2	1
6.1	I am interested in Mobile application that would allow me to share my visit with other people (e.g. see where others are, communicate, use hypermedia related to the locations in the destination, and share information about the visit)					
6.2	I am interested in Mobile electronic guides and maps					
6.3	I am interested in Mobile system allowing the tourists to communicate and discuss their visit when they got home					
6.4	I am interested and attracted by overlaying icons representing attractions onto maps					
6.5	I am interested in Mobile systems presenting the positions of tourist					
6.6	I am interested in Mobile System that would allow the destination to monitor tourist flows					
6.7	I am interested in a global platform for tourism to generate information and provide cloud services to tourist businesses					
6.8	I am interested in a transmedia storytelling tour guide					
6.9	I am interested in a game developed for tourists providing experiences					

Thank you for your time!!

