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E-COMMERCE ADOPTION BY SMES AND ITS CONTRIBUTION TO THE ECONOMIC DEVELOPMENT IN DEVELOPING COUNTRIES: A CASE OF JORDAN

By

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A thesis submitted for the degree of

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DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.



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STATEMENT 1

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ABSTRACT

The main objective of this research is to explore the Jordanian SMEs' adoption of e-commerce as an essential approach in handling their business matters.

This study was motivated by the lack of research that are related to e-commerce adoption by SMEs in third world nations and particularly in Jordan, and that was one of the major problems that have been faced in collecting the secondary data. This research is majorly dependent on the abductive research method and adapts the technology acceptance model (TAM) for the exploration and evaluation of the tendency to accept e-commerce in Jordan. As such, it examines whether the perceived ease of e-commerce platforms' use as well as their perceived usefulness can successfully predict consumers' intent to adopt e-commerce in Jordan as a part of their operations. When first attempted to explore and evaluate the existence and regularity of e-commerce use in Jordan, a significant gap was detected in various areas of the matter, including knowledge about e-commerce and its methods of implementation, the presence of satisfactory data that reflects the actual situation of e-commerce in Jordan, and the attitude of different divisions regarding its benefits and impacts on the economy. With the noticeable presence of this gap, data on the perception of the Jordanian SMEs towards e-commerce have been gathered through a combination of surveys and structured interviews from all the parties included in any business; owners, managers, employees, and end clients. The participants in this study consisted of 31 owners and managers, 40 employees, and 95 customers. The data collected was analyzed using regression analysis technique, ANOVA and the thematic method of analysis.

The results contribute to the field of technology management by identifying environmental, organizational, technological, managerial, and the other important factors that play an important role as barriers and enablers in the adoption process and affecting the implementation of e-commerce in Jordan, also it has demonstrated that the perceived use of e-commerce platforms and their perceived usefulness were indeed statistically significant in foreseeing the intent of customers regarding the implementation of e-commerce in their business dealings.

The outcomes of the presented research can be used not only by SMEs but also by policymakers, governments, local business institutes, and future researchers in their efforts to refine guidelines towards e-commerce adoption.

`

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`

DEDICATION

I cannot possibly express my gratitude to my parents in a few words, but I would like to dedicate this thesis to them as an attempt to thank them for their constant love and support throughout my life. To my mom and dad, I could not have asked for greater parents or more incredible mentors. I owe everything to you and I wish my success pays back a fraction of what you have given me.

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LIST OF ABBREVIATIONS

ICTs: Information and Communication Technologies

E-commerce: Electronic Commerce

DOI: Diffusion of Innovation Theory

TAM: Technology Acceptance Model

TRA: Theory of Reasoned Action

RBV: The Resource-Based View Theory

PERM: The Perceived E-Readiness Model

TOE: Technology–Organization–Environment Framework

ERP: Enterprise resource planning

IT: Information Technology

PU: Perceived Usefulness

PEOU: Perceived Ease of Use

SMEs: Small Medium Enterprises E-business Electronic Business

OECD: The Organization for Economic Cooperation and Development

GDP: Gross Domestic Product

EM: Expectation Maximization Method

IoT: Internet of Things (IoT)

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CHAPTER ONE

INTRODUCTION

1.1.1 Research Background and Its Importance

Small and Medium Enterprises (SMEs) play an essential part in the economic development of different countries. They are pillars of economic growth, especially in emerging countries. Several theoretical and empirical economic development studies emphasize the importance of SMEs in economic growth. at the national and international level and its contribution to the employment opportunities; a World Bank statistic (Anon., 2015). Their contribution averages 60% in employment opportunity and 40% in income. The impact of e-commerce on SMEs attracts various research, as many businesses try to adopt internet-based activities across various industries. Given the significance of e-commerce in businesses, it is no surprise that several nations emphasize supporting and strengthening their SMEs through various institutions and programs. Many countries globally consider e-commerce as a technology essential in escalating the development of SMEs (Levy et al., 2005; Hourali et al., 2008).

Kartiwi (2010) notes that governments continue to initiate intervention programs and offer financial stimuli to prompt SMEs to implement the internet in their operations and establish business structures that will lead to effective trading among partners. However, a limited number of SMEs have attained the advanced level of e-commerce, even with the government's support and various programs. By adopting e-commerce, SMEs will overcome economic and competitive disadvantages that come along their way.

Besides, various studies point out the problems towards adopting e-commerce; most SMEs feel pressured to use e-commerce without reaping enough benefits from their implementation, as they fear lagging in economic development. Regardless of substantial investments in e-commerce systems, positive outcomes have yet to be perceived by academics and practitioners. The absence

of effective strategic planning plays a significant role in derailing such initiatives. (Bharadwaj and Soni, 2007; Kapurubandara and Lowson, 2009; Tarofder et al, 2010). It is thus of best interest to identify and evaluate factors that affect the industries' performance, contributing to e-commerce adoption.

Recent studies target SMEs for various reasons. The most important factor fueling the interest in SMEs is their role in the economic development of any nation. SMEs are taken as ventures which offer a platform for flexible and innovative ways to build the countries' economy, in various perspectives, including their contribution to the workforce (Al-Nsour et al., 2007). The developing countries, in particular, experience the impact of SMEs, accounting for a large percentage of the countries' GDP. Studies have also looked at the globalization of SMEs. Businesses can explore distant markets through the adoption of e-commerce. Instead of competing with large local companies, e-commerce enables SMEs to take advantage of the globalized economy and fetch customers across various regions (Savrul et al., 2014).

In Jordan, SMEs constitute 98% of all the businesses, contributing to 50% of the Jordanian GDP (Economy, 2017). SMEs have been defined differently concerning the number of enterprise employees, ownership and management, capital, wells as sales volume (WARD, 2019). The Jordan Enterprise Development Corporation and Central Bank of Jordan define SMEs as Micro, small, and medium with (1-9), (10-49), and (50-249) employees (JEDCO, 2011). Jordan's economic sector constitutes three major sectors: industrial, service, and agriculture (Department of Statistics, 2011).

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1.1.2 Rationale of the study

The contribution of e-commerce in terms of social development, particularly in developing countries, has been extensively researched geared towards identifying the potential inhibitors and facilitators. The presence of technological advancements such as the availability of the internet and mobile devices has revolutionized the business experience and perception of both business owners and consumers. The separation between businesses and their consumers regarding both space and time is the object of disparity between online retailing and traditional retailers concerning consumer behavior (Monsuwe et al., 2004). For instance, various consumers develop various needs concerning product searching, purchasing, or customer support services during online shopping, different from when shopping in a physical store. According to Nguyen et al., 2016, most of the earlier research emphasized using marketing equipment to better the levels of consumer service. However, recently, there insufficient studies on the utilization of consumer service tools to propel consumers' behaviors and manage sales.

Gaps exist concerning aspects such as the relationship between consumer behavior and order fulfillment operations in the management of SMEs. Implementation of successful e-commerce strategies requires the managers to have a comprehensive knowledge of such order-fulfillment aspects affecting consumer behavior (Herzallah, & Mukhtar, 2016). According to Ajao et al. (2018), despite the fact e-commerce is a modern technology broadly endorsed by some large international companies, some research has been carried out on SMEs' e-commerce adoption. Nonetheless, economies in emerging nations have always been at the forefront of technology adoption and lagging slightly behind and weaker in competitiveness as compared to Western economies. Therefore, various theoretical frameworks and adoption theories must be reviewed to evaluate the hidden contextual e-commerce adoption elements in the context of emerging economies (Nazir & Zhu, 2018).

`

1.1.3 Research Problems

The contemporary world is dynamic due to technological innovations. The driving force behind economic advancement is the internet. It is a global system with interconnected networks facilitating sharing of vast amounts of data at low costs. The e-commerce perspective focuses on customer-to-customer (C2C) and business-to-customer (B2C), involving direct communication with the end customer. It is impossible to talk about e-commerce without mentioning the internet, as it has a huge influence on the operations of most SMEs today. It links the business owners and managers to both existing and potential customers. It is no surprise that many SMEs would want to understand the successful strategies or measures that need to be implemented to facilitate maximum returns on their investments.

In Jordan and the rest of the world, the popularization of personal computing and the internet communication revolution has encouraged the endorsement of e-commerce, thus the increased analysis to evaluate consumers and business implications of such developments (Masarweh et al., 2016). Even though the enactment of e-commerce is rooted in the economic life of developed countries, its use has been uneven and complex in developing countries (Alrousan & Jones, 2016). For instance, Sin et al. (2016) points out that 80% out of more than 700 000 SMEs in Malaysia traditionally conducted their business; that is, they lacked a website to facilitate their operations. The insufficient adoption of e-commerce was due to the perception that electronic tools were expensive and little knowledge on the benefits of e-commerce. Moreover, Al-Bakri (2015) pointed out that Jordan is also lagging in e-commerce adoption, not at international standards. Therefore, most studies have emphasized adoption factors from a general perspective to explore how e-commerce can be developed and help in promoting socio-economic development.

Concerning the global economy, all financial transactions are now taking place online. The availability of virtual markets in the current technological innovations fosters a platform for client-supplier transactions. Such developments have been extensively used in B2B transactions,

enhancing operational costs and timely operations. However, there is a gap in the significant streamlining of B2C activities, such as supply chain management services. Too, there is a problem with B2C transactions in electronic operations, bringing about observable disparities in interactions and customer patterns (Masarweh et al., 2016).

Most businesses tend to move away from traditional business strategies when they realize that e-commerce adoption may be significant in their development. However, the restructuring demands a coherent and appropriate strategic process to be successful (Abdollahpouri, 2016). Besides SMEs see the need for adopting e-commerce to fit in the competitive industry. For instance, according to Masarweh et al. (2016), many businesses in the Hashemite Kingdom of Jordan have shifted to e-commerce platforms as others are working towards adopting them. Gaining a deep understanding of e-commerce will be essential in addressing core issues including, increased global competition and consumer demands for quality, dynamic market environments, growth inflexibilities, and immediate access to business information. Also, the competitive pressure of e-commerce is a factor that requires study as many SMEs look forward to staying relevant in the market system or elevating their market positioning. The competition is fueled by realizing that online operations dominate current businesses, and many customers are migrating from conventional operations to technologically simulated ones.

Al-debei and Shannak (2005) study indicated that there are already some foundations for e-commerce adoption, including technology and telecommunication structure, government, and institutions support. Besides, there are I.T. vendors that can avail the required hardware and software to the businesses in Jordan and promote e-commerce implementation. However, their study also pointed out some of the issues impending smooth e-commerce adoption among Jordanian SMEs including, the community culture. The cultural beliefs and practices are not supportive of implementing internet-based operations in the local markets. This was noted as the

major hindrance behind the insufficient growth of e-commerce. The culture also influences the consumers' perception of e-commerce.

1.1.4 Research Questions

What is the impact of e-commerce adoption by SMEs in Jordan ?? and how it will contribute to the economic development in the country??

Sub questions:

- What is the current situation of SMEs in Jordan?
- What factors need to be included in the proposed conceptual framework to study and identify the adoption of e-commerce in Jordan?
- What is the current state of e-commerce adoption in the economic development of Jordan?
- What are the significant factors related to the adoption of e-commerce in Jordan?

1.1.5 Research Aims and Objectives

1.1.51 Aim

The main aim is to find a way to improve the situation of the Jordanian SMEs by adopting e-commerce to be their approach in dealing with their businesses, and according to the effect of SMEs on the economy, the whole situation will lead to an improvement in the economic development of the country.

1.1.52 Objectives

- To measure the level of e-commerce knowledge and acceptance that owners and Employees have in the Jordanian SMEs.
- To study the impact of adopting e-commerce on SMEs' development and growth.

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- To determine the factors and barriers that SMEs might face through the adopting process.
- To show the possible economic development that can be produced from the e-commerce adoption process.
- To comprise a strategy for SME businesses that want to adopt e-commerce in Jordan.

1.2 ICTs and E-Commerce in Jordan

1.2.1 Jordan Background

Jordan is strategically located at the heart of the Middle East, with a total land area of 89,342 km^2. Jordan is bordered by four countries, which are: Syria to the north, Saudi Arabia to the south, Iraq to the east, Palestine to the west (e-Government, 2021).

Jordan comprises a population of more than ten million people, of which 70% are below 30 years of age, as per the World Population Review (2021). The population has significantly increased at an annual rate of 1% since 2012 due to the influx of Syrian and Iraq refugees into the country as a result of political instabilities. Arabic is Jordan's official language, with English as the second language. Among the Jordanian population, 98% are Arabs, and the rest are Armenians, Chechens, and Kurds. The main religion is Sunni Muslim, which constitutes 92%, with Christians making up 6% of the population; the remaining 2% are the Shia, Sophi, and Druze (Anon., 2022).

USAID statistics (2021) indicate that Jordan suffers from limited resources with severe water scarcity, ranking as among the top five countries with water shortage problems globally. The renewable water supply caters to half of the Jordanians' water needs. The country wastes half of the supply to non-revenue water, which is caused by leaking pipes and vandalism, resulting to a loss of more than $ 700 million yearly. Sustainability and inclusivity access to safe drinking water is key to the long-term economic growth of Jordan. The oil and gas area is also among the resources that the country falls short of. The shortage makes the country dependent on imported energy

resources, which take up 40% of the national budget. The resources in plenty are phosphate and potash, as Jordan becomes the second-largest exporter of phosphate globally. The phosphate and potash exports make up 22% of the country's domestic earnings (WTO, 2015).

According to World Bank (2019), Jordan falls under upper-middle-income developing country. The unemployment rate in Jordan is 24% by 2020 (Department of Statistics of Jordan, 2021). 25% of the population are unemployed and live below the poverty line. The main economic issues affecting Jordan are inflation, poverty, and unemployment, prompting the government to put forward a plan to tackle such problems. For instance, Jordan's policies encouraged the private sector to play a vital part towards growing the economy as they provided them with incentives. They were exempted from tax for nine years, as well as customs with unlimited profit repatriation. Also, Jordan joined the World Trade Organization and partnered with European Union enabling the country to access global markets, attract international investors, and enhance the economy (Jordan embassy, 2013). For instance, in 2011 alone, the Jordanian foreign investments averaged $ 1.5 billion, centered on information and telecommunications, banking, and tourism sectors (OECD, 2013).

Due to scarce resources, the economy of Jordan is greatly reliant on service industries, as the service sectors make up 70% of the country's GDP (Federal Research Division, 2006). Therefore, the country has focused more on service industries like tourism. The economy is split among different industries, as trade and finance account for a third of the nation's, GDP with private enterprise and government spending constituting a quarter of the GDP. Regardless of such developed industries, it continues to struggle with debts, recession, and unemployment as it heavily relies on foreign aid due to the influx of refugees in the country. Jordan depends on food imports; almost the entire country's land does not support agriculture.

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1.2.2 ICT and E-commerce in Jordan

Al-Bakri (2015) indicates a couple of elements derailing e-commerce adoption in Jordan, the Jordanian culture to rely on traditional e-commerce. They also point out the little of e-commerce systems awareness in both enterprises and consumers, such as the electronic payment structure. The taxes also imposed discourages the country's e-commerce adoption process. However, recent studies indicate an increased rate of internet access, with 56% percent of the Jordanian population having access to internet services as of 2019 (Alnsour et al., 2019).

Besides, the country has insufficient training and technical aid from the Jordanian government to individuals who may need to utilize the technology in their workplaces (Al-Bakri and Katsioloudes, (2015). Also, there are various reasons which might influence e-commerce adoption in Jordan such as little trust in online transactions, safety issues related to electronic payments, and unreliable postal infrastructure Alamro and Tarawneh (2011). Cagdas, (2020) added that e-commerce is hampered by absence of legislation to support it and protect clients, as well as a lack of a suitable electronic payment system for e-commerce businesses and arbitrary changes in licensing and taxation, also 70% of the population in Jordan does not have a bank account. When all of these factors are taken into account, consumers' preferred payment method is cash on delivery. Although cash on delivery is an excellent alternative for local online buying, it is a significant obstacle to e-commerce and cross-border e-commerce. Despite the low level of e-commerce implementation, Jordan has an established ICT infrastructure. It ranks as the third country among the Arab nations in terms of e-commerce readiness. Since 2011, the government has worked and developed policies to fully shift from e-readiness to real e-commerce usage among individuals (Al-Khaffaf, 2011), and by 2021 there were about 6.84 million internet users in Jordan and the internet penetration was 67% (Datareportal, 2021). Regions in Jordan are witnessing the substantial impact of online services as more businesses shift to online businesses. The Hashemite

Kingdom of Jordan has experienced a raise in online shopping websites, yet e-commerce is still seen as an emerging industry.

1.2.3 SMEs Challenges in Jordan

SMEs are recognized among the leading contributors to the country's GDP, hence formulating policies to control the businesses in the region. Despite their contribution, the SMEs face many challenges that affect their growth (Abualrob & Kang, 2016).

Al-Husban et al. (2018) study indicates that one of the SME sector challenges in Jordan is financing. Most small enterprises struggle, looking for channels to finance their businesses and establish higher levels. However, most financial institutions are supposed to help such businesses shun SMEs (Al-Husban et al., 2018). The only possible way to SMEs can secure financing from these institutions is through providing them with collateral, which is difficult for many SMEs (Kardoosh, 2018). Therefore, most SMEs have no option but to settle for self-financing, which is also a big struggle since this requires saving, which is hindered by the low saving capability. Hussein and Baharudin (2016) point out that when SMEs manage to secure loans, the money lenders charge high-interest rates, making the business struggle to pay. SMEs fail to pay back the loans, resulting in the businesses closing and clearing the remaining debt.

Besides the financing, the SMEs also face the challenge of high taxation in income and sales rates (Hussein & Baharudin, 2016). The SMEs suffer from high taxes required to establish the star-up and during the running of the business. The SMEs in Jordan that depend on patents in gaining an early advantage in the markets may fail to protect their intellectual property due to costly registration (Rawash, 2021). The tax authority faults estimating the taxes, which is usually done without much consideration of regular books, leading to overestimating the rates. The sales and VAT taxes are significant concerns, which impacts the inputs' pricing and their products (Elseoud Et al., 2019).

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The business owners are also facing management challenges, including administrative problems and system inefficiencies, resulting in economic issues such as delays in creating start-ups and making investments (Masoud, 2020). One of the factors contributing to the management issues involves, a lack of training on how to run the enterprises and ensure a successful business in the long run. Training is paramount to the business owner's perception of the opportunities and threats. The few institutions which provide financial help to SMEs do not provide training on the management of resources, which significantly impacts how they utilize them (Al-Dwairi et al., 2017). Moreover, the management challenges stem from the low response and limited capital by the commercial banks. According to Hadddin (2016), most SMEs in Jordan are family-owned, hence lacking management, financial, and strategic skills. Most business owners start their businesses due to needs with limited management skills. Concerning lack of skills, less than 3% of the startups manage to grow to successful levels (Masoud, 2020).

Most of the SMEs also underperform in terms of exports. Most SMEs in Jordan are not export-oriented due to emphasis as they produce traditional, low-valued goods or services with substandard quality (Hussein & Baharudin, 2017). Besides, underlying challenges are derailing their exportation, including inaccessible export channels. The country lacks a specialized agency to direct the local enterprises on marketing their goods across Jordanian borders (Fayad, 2014. Hussein & Baharudin, 2017 also points out that the business also lacks awareness of the specifications needed for the products to reach exporting standards. The input prices hinder the businesses from competing with other countries due to high product prices. The financing problems also affect the SMEs' capability to export their products due to low-scale production.

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1.2.4 E-readiness and Jordan Context

The Jordanians and the private sector were exposed to the internet in 1996 via private ISP firms that share the internet market (Al-Weshah & Al-Zubi, 2012). By 2002, McConnell International categorized the country as a medium to high concerning e-readiness and e-leadership, compared to various countries worldwide (Schware & Deane, 2003). Jordan was considered as one with the presence of conditions for conducting e-government and e-business activities.

In February 1999, King Abdullah II succeeded the reign following King Hussein's demise. King Abdullah II realigned the government's plan along with electronic commerce within his five years of leadership. It came about as a result of legislation of new policies like the investment law. Internet penetration reached a substantive level of 36% in 2007 (Al-Weshah & K. Al-Zubi. (2012). In two years, the country's internet usage increased rapidly, also double the rate in 2007. The studies also pointed out Jordan as one with more start-up companies than other Middle East countries.

The government played an essential role in elevating internet usage in Jordan, as the president declared the purchase of computers and internet connection as tax-free, geared towards stimulating the ICT sector. It increased access to computers by 22.3% among commercial SMEs (Statista, 2020). More than half of the companies owning the computers had local Area Networks set up in their places of work, and over two-thirds of them used the internet. In places such as Amman, internet usage is more than 92%, which is higher than in most cities (Data World Bank, 2020). In terms of website usage among SMEs, more than a quarter of them have established websites. The internet penetration rate in Jordan by 2020 has reached 67% (Cagdas, 2020). In 2011 there were more than 35 000 employees in the ICT sector, accruing almost $3 billion in revenues by 2011, and the ADSL subscribers alone were more than 29 000 in the country (Nasser & Al-Zubi, 2010).

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The Jordanian ICT infrastructure expands at a rapid rate, with a number of landlines reaching 629 000 and 3.826 million mobile phone users by 2007. The ICT sector contributed almost 14.3% of GDP in 2008 and 12% in 2016, becoming one of the main contributors to the country's economy ((Jordan Investment Commission Report, 2017). It contributed to the countries job creation, as the industry opened about 80 000 new opportunities in a span of nine years since 1999. The Information Technology Report (2009) shows that Jordan ranked at 44th position out of 133 nations in terms of the ICT e-readiness index. Moreover, the report indicated that the country was 73rd as far as overall business readiness is concerned.

Currently, Jordan has established a robust telecommunication industry stemming from telecommunication companies and government support. The companies provide the internet of things (IoT) to the Jordanian population, although the consumers' acceptance of the services is still limited. The IoT is the new technology that looks forward to tackling telecommunication issues and increasing the acceptance of IoT among customers. (Al-Momani et al., 2018). Mobile usage has been increasing dramatically, which escalates the e-readiness and potential of many SMEs adopting e-commerce (Ghazal, 2016). Moreover, internet usage penetrates at a higher rate among various sectors such as the education system. The education system has integrated internet mobile learning in the curriculum as well as ICT content to increase technology literacy and smoothen the learning process (Al-Nawayseh et al., 2019).

1.2.5 SMEs and E-commerce adoption

E-commerce has steadily infiltrated SMEs in the last ten years, changing the organizational procedure by developing new strategies to store, distribute, and exchange data between business individuals and consumers. Also, e-commerce has played an important part in transforming business structures due to online (El-dalabeeh, 2019).

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Studies indicate that e-commerce implementation by SMEs allows equal opportunities for local businesses to compete for consumers in the international market. Besides, SMEs' e-commerce adoption is facilitated production increase and improvement in consumer services and enhancing profitability.

However, Jordan’s e-commerce is considerably low as it is considered to be in the developing stage. A study by Allahwiah et al. (2010) geared towards understanding E-commerce adoption in Jordan indicated that almost 90% of the SMEs used essential internet tools to conduct business operations, including emails, in 2010. Tools such as complex websites that can be used for making online payments were yet to be rampant.

Some researchers have tried to evaluate the aspects influencing e-commerce implementation among Jordanian SMEs. For instance, Alamro and Tawawneh (2010) looked at the elements impacting e-commerce adoption in diverse industries in Jordan, in which CEO features and staff I.T. skills were the leading factors. Their research also indicated that SMEs’ adoption of e-commerce was still low; something that is brought by costly implementation, inadequate strategies, government's legal frameworks, and low e-commerce awareness in the country's SMEs.

Moreover, Al-Dmour and Al-Surkhi (2012) dug deep into SMEs' adoption rate of internet-based information systems. They pointed out that more than half of them operated with a poor adoption rate, with only 31% having high adoption level. Their research also found out that the adoption rate was largely affected by the top management support, systems cost, complexity, and the business partner’s pressure.

Additionally, the government continues to contribute to e-commerce adoption in Jordan. For instance, the government dedicated thirteen billion to enhance e-commerce operations and implemented more laws to safeguard the users (WTO, 2017). Recently, studies pointed out technical readiness and management support as significant factors behind e-commerce adoption

by SMEs (Rawash, 2021). Competitive pressure is also noted as a key part in encouraging the business to embrace internet-based operations, although at a minimal rate.

1.2.6 E-commerce Environment in Jordan

E-commerce in developing nations is yet to gain its full potential, Jordan in particular. The e-commerce sector's growth depends on various factors ranging from environmental factors to social and political determinants. Studies point out some aspects that affect e-commerce adoption: trust, lack of legal framework and payment structures.

The widespread internet use has revolutionized the financial systems in emerging countries. Many banks have developed web technologies that allow customers to carry out transactions through a couple of methods. The presence of reliable payment methods like debits and credit cards in the financial institutions that facilitate online transactions is significant in developing e-commerce. A supportive financial system is critical to successful e-commerce operations, acting as a link between e-commerce and financial firms (Oxley & Yeung, 2001). The Jordanian banking sector faces a challenge with online payments since it has not yet maximized its operations to improve customer relationships and reach a cost advantage (Al-Husban et al., 2018). Lack of credit cards is one challenge impacting the financial institution services. However, most banks provide the customers with pre-paid cards for purchasing products online, accompanied by particular terms.

Most of the individuals in Jordan are not aware of the financial services regardless of banking availing payment options. It poses a challenge to businesses that aim to use the systems to adopt e-commerce (Masarweh et al., 2016). Moreover, lack of awareness is a cultural obstacle that plays an essential part in inhibiting the consumers from engaging in e-commerce (Masarweh et al., 2016). The customers are not aware of the systems available, which would encourage them to shop online, for example, the available delivery options and the laws protecting their online

shopping. According to Rogers (2003), awareness of e-commerce plays an essential pain adopting e-commerce in the country.

Jordan is technically and professionally prepared; however, some of the services are still underdeveloped. Among the services that need improvement involve the country's postal system, one of which is operated by the government (Al-Husban et al., 2018). It is not yet established like the one in developing countries, although it is quite adequate in offering essential postal services to individuals. Some of the operations consist of money transfer, mail, and parcel delivery via rental post offices (Nasr, 2016). The e-commerce sector faces a challenge in serving their customer due to the unavailability of doorstep delivery services, as the homes and streets assigned addresses. The mail system is yet to advance, as the recipients must pick from the post offices. Hence, such an operating environment derails the success of e-commerce which is heavily dependent on accessing the customer's information (Jordan Post, 2009). The customers need timely delivery of their products and at a fair price, facilitated by an efficient delivery system.

Concerning the weak delivery system, some businesses find it hard to provide services to Jordanian customers. Even though some customers are aware of e-commerce, they may not take advantage as some companies do not offer product delivery to countries with ineffective supplemental services (Al-Dmour et al., 2017). Some citizens encounter online shopping platforms such as Amazon, but the delivery issue deters their engagement. A couple of delivery agents recently put forward measures to help customers access their products from overseas shopping platforms; however, their services are deemed ineffective in solving the problem many customers cannot afford the high shipping cost (Al-Husban et al., 2018).

The enactment of laws is meant to ensure safe transactions since online business comes with threats and fraud, in which the transacting parties may be significantly affected. Jordanian government was among the initial nations in the Middle East to execute regulations concerning ICT purchases; the Electronic Transaction law (Yaseen et al., 2016). The law, however, did little

in terms of protecting or offering the legal basis and dealing with the problems as compared to the existing laws. The previous law involved provisions that encompassed the emerging technologies within their limits. It implies that the old law could accommodate the new internet-related operations by adjusting particular articles in the provisions. The ETL does not effectively safeguard the consumer in the online transactions the same manner it could do to offline customer transactions (Al-Husban et al., 2018). It fails to address the concerns of e-commerce, such as a high number of fraud cases and threats of mistakes compared to offline transactions. Generally, Jordanian law fails to provide adequate assurance to customers regarding safe and convenient online transactions.

1.2.7 The Structure of Thesis

The remaining section of the thesis is arranged with various chapters exploring various fields as follows:

1.2.71 Chapter Two: Literature

The chapter explores the study's background and brings forward the themes of e-commerce and SMEs. It discusses the definitions of SMEs, underlining their significance. The extensive exploration of e-commerce enablers and barriers for prosperous e-commerce implementation. It presents the context of e-commerce in Jordan. The relevance of SMEs to developing countries is also discussed, the Jordanian economy in particular. The context of SMEs and ICT is also discussed and the challenges they face in the Jordanian economy. Besides E-commerce adoption from the Jordanian view, the chapter also looks at e-commerce adoption in emerging and developed nations. An exploration of the e-commerce background also takes place in this chapter, with an extensive review of kinds of e-commerce. Apart from e-Commerce, the chapter also explores traditional commerce.

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The chapter also points to the external aspects and their relation to e-commerce, particularly government support. The aspect of globalization and e-commerce is also explored with its role in SMEs. Moreover, the digital divide is also discussed. The discussions provide the foundation for building the study's research framework.

It also looks at the aspects affecting the adoption of SMEs. The factors under review include individual aspects, managerial factors, organizational aspects, technological factors, and environmental aspects. The chapter also discusses the correlation of the factors and the overall e-commerce adoption. It also explains the growth status of models in SMEs. The adoption of websites by SMEs as well as their functionality is also explored. The role of web 2.0 in SMEs concerning e-commerce adoption is also explored. Moreover, the chapter discusses the non-adoption of e-commerce in SMEs.

Last part of the chapter reviews the relevant literature and presents the primary significant theories and models in technology adoption, with typical patterns of e-commerce adoption among SMEs.

1.2.72 Chapter Three: Research Methodology

The chapter looks at the research methodologies and the design employed in the research. The chapter looks forward to developing and using the appropriate research methodologies to ensure data collection suitable for testing the hypothesis. It identifies the types of research, as they play an essential role in data collection. The chapter also points out the sampling methods and the approaches and research instruments selected for collecting data. The procedure that is used to develop the questionnaire, the data collection procedures are also examined. The related concerns, reliability, and validity are put under critical consideration since they provide the rationale for adopting the methods. Finally, the chapter will look at ethical considerations and their approach in the research.

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1.2.73 Chapter Four: Data Analysis

The chapter analyzes the questionnaire returned by the respondents and interview responses in Jordan. A variety of statistical techniques are utilized to identify the elements that are connected with e-commerce endorsement and examine the assessment of e-commerce progress based on the suggested design. Triangulation will be used to expose the survey's reliability and validity. The methods evaluate the key conditions and obstacles and examine the correlation of e-commerce elements and their impact on the achievement of SMEs. It employs several analyses, such as descriptive analysis.

1.2.74 Chapter Five: Discussion

The chapter points out the research outcomes emerging from the study and reviews the stages of the research procedure. It explains the empirical evidence of the respondent's point of view towards the components related to e-commerce adoption. An e-commerce rise model will help explain e-commerce adoption and evolution among SMEs. The study outcomes are presented and described together with the contributing factors, hurdles, and organization size relating to e-commerce adoption, to point out the challenges that the respondents face.

1.2.75 Chapter Six: Conclusion

The chapter discusses the conclusion concerning e-commerce adoption in Jordan. It also looks at the study repercussions and limitations. Besides, the study also provides direction for future research.

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CHAPTER TWO

LITERATURE

2.1 The History of E-Commerce and Its Adoption by SMEs in the Global Context

2.1.1 A Brief History of E-commerce

As early as the 1960s, businesses carried out electronic transactions using a primitive computer network. With the assistance of Electronic Data Interchange (EDI), companies were able to share business documents. At this same period, the military developed ARPAnet, enabling the circulation of information during attacks (Csponline, 2016). Their innovations become the basis for later e-commerce developments. Online applications first emerged in the early 1970s with technological platforms, including electronic transfers, where the exchange of funds could occur electronically. However, such applications were restricted to large corporations and few small enterprises that would take risks (Turban et al., 2006). What followed was the electronic data interchange (EDI), adding more transactions and operations, which attracted more enterprises.

During the 1990s, the World Wide Web emerged as more online applications continued to exist, extending the online business to online direct sales and systems such as e-learning platforms. By 1999, the focus was laid on online applications, B2C, B2B, but later shifted to the systems such as e-government, e-learning, and m-commerce in 2000 (Swatman et al., 2001). In 2005, social networks began drawing more attention. E-commerce depends hugely on technology involving internet marketing, electronic money transfer, supply chain management, and automated systems of data collection. Electronic is usually taken to imply a platform incorporating the application of information communication technology.

Today, various established online shopping platforms are leveraging the benefits of e-commerce adoption for maximum profit margins. Among them are Amazon, Dell, Staples, and Office Depot. Most of the products sold on these platforms range from books, computers, office

supplies to different categories of products. Amazon was among the first e-commerce companies to develop an affiliate marketing program and made 40% of its sales from affiliate partners' transactions via the internet (Khan, 2016).

2.1.2 Traditional commerce

Traditional commerce dates back centuries ago, during the batter system, which involved exchanging goods and other goods. However, with the onset of the Industrial Revolution, money replaced the cumbersome barter trade system, which is still used to date. Since the introduction of e-commerce in the early 20th century, traditional commerce has been losing popularity, with businesses and customers gradually shifting to internet-based transactions (Savrul et al., 2014).

2.1.21 Traditional commerce and E-commerce Similarities

E-commerce and traditional share standard features, only that e-commerce may be subjected to specific changes. For instance, in both forms of trading, products or service and place for sale take center stage in business operations. E-commerce has revolutionized places of transactions, which take place on online platforms. All forms of trading take place in three stages; the search or advertising phase, contracting phase, and payment and delivery phase (Pascu and Iancu, 2016, pp.10-15).

2.1.22 Traditional commerce and E-commerce Differences

E-commerce does not significantly differ from traditional trade concerning steps required to complete transactions. However, some aspects separate the two forms of trade. The traditional trade has a limited sphere of business coverage. For the case of e-commerce, a business cannot be limited within a territory since the market is open on a global scale with unlimited partners (Jimenez et al., 2019). The time concerning the business transactions is also a distinguishing factor.

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E-commerce shortens the production or sales time, facilitating efficient operations and allows the customers to take part in transactions at any time. The businesses transactions in traditional trade usually take longer due to lengthy processes. The categories of products marketed are also significant in distinguishing the two forms of trade (Savrul et al., 2014). The traditional market focuses on providing all goods produced to customers since it represents a distributor and service provider. The products in e-commerce include books, tickets, electronics, music, and computer with less supply of perishable goods. The comparison between conventional commerce and e-commerce is made in the table below (Gupta et al., 2018)

Component	Traditional Commerce	E-commerce
Definition	It is a traditional model, involving purchase and sale of goods and services in person, basically through face-to-face transactions.	It is a form of online transactions in which customers purchase goods and services via electronic devices such as laptops, smartphones, tablets, etc.
Usage	Usually applicable in situations where the digital network is unavailable.	Revolves around reduction of costs and timely transactions.
Mode	It is carried out in non-electronic or manual form.	Involves electronic or digital mode only.
Time	The time is limited, with its operation dictated by the law or type of business	The business operations are timeless

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Purchase	Facilitates product inspection before purchase.	Inspecting of products is difficult during the transaction
Business	Conducting many businesses at the same time can be hectic and nearly impossible.	Multiple businesses can be carried at the same time
Process	Anyone can carry out regardless of level or education or knowledge.	The operation requires basic digital knowledge
Region	The business has limited sphere of business coverage.	The business is not limited to a territory; it can take place between different regions within a country or across countries.

Table 2.1: Differences between E-commerce and Traditional Commerce.

2.1.3 E-commerce Definition and Benefits

Since the development of world web technologies, the world has experienced a rapid expansion and commercialization of the internet, becoming affordable among businesses and individuals. It has given birth to the recent term, 'E-commerce'. E-commerce definitions are broad, which vary depending on the perspective, as a standard definition is yet to be reached. As it pertains the technology's point of view, e-commerce refers to sharing business information among organizations and between organizations and their respective customers through telecommunication networks (E-commerce platform, 2019). From the commercial perspective, e-commerce has been termed the buying and selling of goods or performing business transactions through the internet. The transactions may be B2B, B2C, C2C, or C2B (Rouse, 2017).

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With Grandson and Person (2004), defining E-commerce relies on the goals as well as the objectives of the research. There are two significant aspects defining e-commerce. The first aspect is that all the business operations like buying and selling take place through electronic means. The second element considers electronic medium a platform for exchanging business activities such as EDI and the internet. Kalakota (1997) defined e-commerce as the value of transactions that involve the transmission of data, commodities, and services or payments through electronic means. The definition is based on the fact that e-commerce institutions redefine their commodities, procedures, and business models using technology to alter product conception, marketing, and delivery. Electronic is usually presumed to imply a platform incorporating the application of information communication technology.

2.1.31 Benefits

In emergent and advanced nations, e-commerce is accompanied by unlimited opportunities. e-commerce benefits are most likely to be centralized in developed nations; however, the emerging nations will also realize its impacts. Currently, most developing countries lack sufficient infrastructure to maximize the economic advantages of e-commerce. The merits of e-commerce lie in three categories; firm, prices, and productivity. To maintain high market positioning and competitive advantage, most firms look forward to greater coordination among the supply chains and weed out inefficiencies existing within-firm transactions, particularly in electronic markets. Available evidence points out the increased productivity in particular countries as a result of e-commerce integration.

Electronic means and the internet make launching and carrying out business operations simpler, speedy, and cheaper. The process of data collection can prove to be costly, especially when it means getting it across borders. In most instances, the costs can be so high, acting as a barrier to business. The costs revolve around getting the suitable supplier, specifying the

commodity details and quality, and making arrangements for deliveries and marketing. Concerning e-commerce, all these activities can be facilitated without the transacting parties being nearby, playing a significant role in increasing global trade ECLAC. (2002). A study indicated sufficient evidence that developing international markets through the internet proves the ancient linkages to less significant, suggesting that nations with limited past trade links gain maximally from the internet, particularly the developing countries (Freund & Weinhold, 2004). Evidence from the 1998 surveys on businesses in 15 low and middle-income nations indicated that these enterprises rely on search engines in researching untapped markets (Daly & Miller, 1998).

Besides, e-commerce has a significant impact on exports. According to statistics from twenty low-middle-income Europe and Asian nations, it is indicated that businesses centered on e-commerce export more, as part of their total sales, compared to those not operating on internet-based models (Clarke, 2002). Moreover, research also pointed out that the internet has an important impact on trade in emerging nations compared to developed ones. For instance, the exports to the U.S. multiplied for nations with greater internet penetration among the 31 middle and high-income countries (Freund & Weinhold, 2004). Less developed countries with higher e-commerce penetration tend to export more to developed countries but less to other developing nations. However, internet access in high-income countries is prevalent in the manufacturing enterprises, with the results pointing out the number of consumers, contrary to developing countries where most manufacturing industries are not connected. Given that internet access is low in developing countries compared to developed ones, it is advantageous to enterprises in developing countries in terms of exports; they fill gaps in the high-income countries (Clarke & Wallsten, 2004).

As e-commerce continues to expand, it impacts employment and wages due to a complicated set of interactive forces. E-commerce is attributed to the creation of jobs, both directly and indirectly. Direct job creation emanates from sectors related to goods and services, as well as

digital products. Moreover, the increased demand and productivity accounts for indirect opportunities created. Research from the U.S. and European Union indicated that the employment in ICT-related firms and finance, business, and commerce sectors is attributed to one-third and one-fourth of the total jobs, respectively (Coppel, 2000). Besides the average employment gains, e-commerce also affects the demand for specific skills. Studies indicate that ICTs and e-commerce require new skills, primarily where responsibilities and decision-making rely heavily on the information. The demand for individuals responsible for managing the information eventually increases. The same research shows that new technologies in the e-commerce industry increase the demand for highly skilled employees, particularly in information-based organizations (Bresnahan et al., 2002).

An increase in demand for high-skilled labor attracts an increase in wages. Data from research in the U.S. indicate that need has deviated from low-middle-wage jobs and skills to those that are highly rewarding and require particular training, talent, and management skills (Bresnahan et al., 2002). The labor demand shift is attributed to skill-based technical change. A consulting firm estimated the impacts of E-commerce on employment in France, Germany, Italy, and the U.K. By using the input-output model, the research uncovered three categories of the effects; direct impacts due to e-commerce revenues, an indirect effect due to inter-industry linkages, and effects due to income-consumption circuit from the value-added. It also indicated that the job creation was large enough to counterbalance any job lost due to e-commerce adoption (Databank Consulting, 2001). The increased wages also played an important part in improving the living standards of individuals.

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2.1.4 SMEs

2.1.41 Overview of SMEs

SMEs play a key part in the economy as it is a potent source of national, regional, and local economic advancement (Ramdani et al., 2009). SMEs are, in fact, the pillars of a country's economic growth. For instance, a study in Indonesia revealed that the number of SMEs in the country makes up 99 percent of all businesses (Kartiwi, 2006). Moreover, according to Alnsour et al. (2007), SMEs constitute 99 percent of all enterprises. Such figures are equally valid in other countries, both developing and developed, indicating their impact on the economy. For the U.S. economy, SMEs represent 98% of the enterprises (Brown and Lockett, 2004).

Due to the contribution of SMEs to the economy, most countries have seen the need to study and offer support to their respective enterprises (Hourali et al., 2008). SMEs are regarded as being flexible in the provision of services and less costly commodities compared to large enterprises. SMEs systems and their managers are more capable of accepting modern designs, something that promotes their ease of adopting e-commerce. According to MacGregor and Vrazalic (2008), SMEs are not just smaller versions of huge enterprises but rather possess their distinctive features, improving competitiveness or inhibiting growth depending on management.

The adoption of SMEs is dictated by a variety of factors including, customer demand, government support, market expansion, competitive pressure, and cost reduction. At the same time, SMEs are slow in adopting e-commerce, something attributed to barriers such as limited finance and lack of staff skills (Pavic et al., 2007).

2.1.42 Definition of SMEs

SMEs do not have a universally accepted definition. Despite the characteristics shared globally by SMEs, the researchers and governments are yet to settle for a standard definition that classifies enterprises. The hurdle stems from the difficulties of settling for criteria applying in any

explanation. The terms "small" and "medium" are relative, as they vary from one country to another and different sectors in a particular country. The disparities have always resulted in significant variations concerning definitions based on the size of SMEs. For instance, the highest number of employees has ranged from ten to five hundred, and even sometimes one thousand.

The size-based definition of SMEs may take many forms; it can be based on quantitative measures, including the number of employees and turnover, or qualitative dimensions. According to Meredith (1994), it is essential to include quantitative components in any definition, taking into account the level of staff, turnover, assets, and financial and non-financial components. Other explanations must also incorporate qualitative components, reflecting on the business organization and operations (MacGregor & Vrazalic, 2006; Hourali et al., 2008). SMEs are non-affiliated, self-contained businesses with the least number of employees. (Bose & Sugumaran, 2009). Different parameters such as the number of employees, capital size, amount of turnover, or nature of business are employed by various to define SMEs (Kapurubandara and Lawson, 2007). The qualitative definition of SMEs is based on dimensions such as managerial, behavioural, and attitudinal components. The features are critical in distinguishing SMEs from large organizations.

2.1.43 Quantitative definitions

The quantitative definition of SMEs is based on various criteria for the country. The most familiar definitions are based on the size of the workforce and turnover, while other researchers use capital value, labor intensity, sales, production capabilities, or financial turnover (Ayyagari et al. 2007). For instance, Shakir and Viehland (2004) distinguished SMEs from large organizations by heavily relying on the revenue, not the number of employees.

In addition, the definition of SMEs depends on the count of workers and the worth of paid-in capital or even both two. based on the number of employees is advantageous as it becomes easier to contrast institutions in various zones and nations. It is also a reliable standard because it

does not have a direct and automatic relationship with price changes such as changes in the price exchange rate or inflation. Gathering data on the number of employees is also easier. Al-Mahrouq, 2003). According to Ajlouni (2006), the number is the most commonly used measure even though there are multiple variations worldwide. For instance, Beck et al. (2005) determine SMEs as businesses with less than 500 workers, but Kotelnikov (2007) maintains that SMEs' number of employees is below 250. Therefore, the definition of SMEs based on the number of employees can work best for some sectors, while turnover can also suit other sectors.

However, most governments globally primarily measure the size of an organization depending on the number of regular employees or their equivalents. For other nations, the economic factors are the basis for the definitions. In countries such as Italy and France, an enterprise with less than 500 employees is considered minor or medium. Sweden considers less than 200, while Australia and Denmark refer to SMEs as employees below 99 and 50, respectively (Al-Mahrouq, 2003).

In the U.K., SMEs constitute enterprises with less than 250 employees (Ahmad, 2009). It classifies the SMEs as follow:

- Micro SMEs have 0-9 employees
- Small SMEs have 10-49 employees
- Medium SMEs have 50-249 employees

The Asian Pacific Economic Cooperation (APEC) defines SMEs as firms with fewer than 100 employees, in which medium-sized enterprises have 20 to 99 individuals, small enterprises have 5 to 19, and micro-enterprises have less than five employees (USAID, 2007). The European Commission (2005) did revise how it defines SMEs, as it considered the economic development since 1996 and the application of the definition. The measures were put forward to block enterprises of larger groupings from benefiting from the SMEs' support schemes. They also designed the maximum financial level to do away with penalties among organizations that invest,

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although it was unlikely this could raise the number of SMEs. The European Commission clarifies that the micro, small, and medium businesses could be determined using the following criteria (European Union 2015):

- Micro enterprises have less than ten employees with an annual turnover of €2 million or below.
- Small enterprises. The employees are less than 50, and their annual turnover is €10 million or below.
- Medium enterprise has less than 250 employees with an annual balance sheet of €50 million or less.

The U.K. also decided to adopt this kind of definition. Like the U.K., Jordan small enterprises comprise less than 50 employees and 250 employees for medium ones. In Singapore, less than 100 employees with a turnover of less than $ 15 are termed SMEs (Kendall et al., 2001).

The definition in SMEs Jordan's perspective is comparable to other countries, particularly Malaysia, Pakistan, and Turkey, based on the studies (Allahawiah et al., 2011). According to Osman and Hassan (2002), Malaysian SMEs have a workforce of 249 people or less. In the case of Turkey, the SMEs have employees ranging from 10 to 200 individuals. The organizations comprise 99.5 percent of manufacturing industries, 61.4 percent of total staff, with 29.1 pe cent of value addition (Altintas et al., 2007). As for Pakistan, the country lacks a single for the SMEs, as they vary from one sector to another. For instance, a threshold turnover of $4 million is used among the sectors; the SMEs in the manufacturing sector have the same turnover as those in the service sector, only that service sector SMEs have less than 250 employee’s contraries to manufacturing ones which may have more (Ahmad and Zink, 2009). In Jordan, SMEs are regarded as enterprises with 10 to 249 employees (OECD, 2015).

The Jordanian SMEs' definitions also vary like other countries. It administers to different government firms and organizations as well as the private sector. The organizations define SMEs

differently, although they base it on the number of employees. For instance, the central government's Department of Statistics definition of SMEs in all sectors is based on how many the employees are. According to the department, firms that employ one to four employees are micro-enterprises, 5-49 are small enterprises, and 50-99 are medium enterprises, while large enterprises employ more than 100 individuals (DOS, 2004). For the Amman Champers of Industry, small enterprises have less than ten employees, while medium ones have between 10 to 99 employees (CIPE Arabia, 2018).

As per Euro Jordan Action for the Development of Enterprise (EJADA), SMEs comprise 5 and 250 employees. The Ministry of Commerce and Industry defines businesses as follows (MOTI, 2007):

- Small enterprises; workers range between 10 to 49.
- Medium enterprises; have between 50 and 249 employees.
- Huge organizations; have 250 or more employees.

The study will consider the ministry's definition: the SMEs have employees between 10 and 249 individuals. The Jordanian government is yet to adopt new strategies and laws regarding SMEs and their definition. As it stands, the 2015 definition still applies (OECD, 2018).

2.1.44 Qualitative definition

The qualitative standards are also applied when defining SMEs. Concerning the 1971 Bolton report, qualitative measures are essential in classifying the enterprises. It points out that SMEs operate a small market share with personalized management. It also puts down that such enterprises operate independently as they are not part of the prominent organizations, and their managerial decision-making processes are free from external influence (Krake, 2005). According to Sweeney (2007), SMEs are firms that are the management of the owner-managers. As with

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Kuratko and Hodgetts (2001), SMEs are independently owned, and they do not dominate the field of operations.

According to the United Nations Industrial Development (UNIDO), the qualitative explanation is crucial for policy growth. The emphasis, however, should not be laid on qualitative measures alone, but both quantitative and qualitative indicators of an organization to effectively implement policy measures for these firms' management. The organization advises particular to adhere to the following qualitative measures when defining enterprises (USAID, 2007):

Category	**SMEs**	**Large Companies**
Finance	• Main sources are family funds, self-financing.	• Rely on diverse ownership structure with access to anonymous capital market
Management	• Operates on Proprietor-entrepreneurship • The functions are linked to personalities	• Operations are based on Manager-entrepreneurship • Emphasizes subject-matter-based division of labor
Personnel	• May lack of university and college graduates • Broad-based knowledge	• Dominated by university graduates • Competence is key
Organization	• Highly personalized contacts	• Highly formalized communication
Production	• Labor intensive	• Usually, capital intensive and operates on economies of scale

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Research Development	• Data is based on market trends and observes intuitive approach	• Information is based on the institutional framework.
Sales	• Uncertainties with the competitive position or not clearly defined	• Existence of strong competitive position
Buyers Relationship	• No stable attachment	• Mostly based on long term contracts.

Table 2.2: Application of Qualitative Measures for Enterprises

The variety of definitions concludes that there is no international framework for classifying enterprises; it all depends on the country. However, this study considers Jordan's ministry of trade and the industry's definition since it is the country of reference. For convenience purposes, the following table shows a summary of the literature on different definitions.

Literature	**Quantitative Definitions**
European Commission (1996)	➢ Microenterprises: one to 9 employees ➢ Small enterprises: 10 to 39 employees ➢ Medium enterprises: 40 to 250 employees
U K –DTI	➢ Microenterprises: one to 9 employees

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	➢ Small enterprises: 10 to 39 employees ➢ Medium enterprises: 40 to 250 employees
(Kendall et al., 2001). Singapore	➢ SMEs have less than 100 employees with a turnover of less than $ 15
Osman and Hassan, (2002) Malaysia	➢ SMEs: fewer than 250 employees
Altintas et al., (2007) Turkey	➢ SMEs: more than ten but less than 200 employees.
Ahmad and Zink, 2009). Pakistan	➢ SMEs in the manufacturing industry: Firms may exceed 250 employees, with turnovers US$4 million or less. ➢ SMEs in the service industry have less than 250 employees with a turnover of $4 million annually.

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Asian Pacific Economic Cooperation (APEC) (USAID, 2007).	➢ Micro enterprises have less than five employees ➢ Small enterprises have 5 to 19, and ➢ Medium-sized enterprises have 20 to 99 individuals.
Amman Champers of industry Jordan (CIPE Arabia, 2018).	➢ Small: less than ten employees ➢ Medium: less than 100 employees
Ministry of Trade and Industry (OECD, 2018)	➢ Small firms; employees ranges between 10 to 49. ➢ Medium firms; have between 50 and 249 employees. ➢ Large organizations have 250 employees or more.

Table 2.3: Summary of literature on SMEs definitions.

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2.1.5 Potential Benefits of E-commerce to SMEs

Market Efficiency

Most businesses, especially those dealing with the agricultural zone in emerging countries, rely on long supply chains or middlemen in marketing their commodities or purchasing the required raw materials. In such cases, the intermediaries take advantage of the individuals producing the goods by taking the lion's share or deciding which party to get the necessary inputs and equipment (Kebede, 2001). Besides, their involvement in the business leads to an extra cost on the raw materials and outputs. For the emergent nations, the adoption of e-commerce reduces or does away with the intermediaries and enables the seller to enjoy the benefits. Through direct marketing of the products to customers and purchasing inputs from the suppliers, e-commerce plays a significant role in minimizing the cost and maximizing firm control of the business in the supply chain (Yaseen et al., 2016).

Operational Efficiency

It has been noted that enterprises in emergent nations spend relatively large amounts of funds in coordinating their economic activities due to inadequate systems of procurement, communication, control of inventories, and operations (Mann, 2001; Murillo, 2004). In addition, accessing and using the conventional data communication infrastructure in developing nations is quite costly. The high cost usually results in the high price of the products, adversely affecting the competitive potential in the global market. From transaction cost theory, there is no doubt that e-commerce could play an essential role in reducing intra-firm coordination and addressing the inefficiency problems faced by businesses (Moodley, 2003). As e-commerce reduces the cost competitiveness of the businesses' commodities in local and international markets and transaction costs, the cost of being part of partnerships and strategic alliances also reduces. It could also minimize the existing and real obstacles of trade.

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Market Access

Businesses in emergent nations have always been symbolized by absolute levels of 'information Poverty,' which is attributed to location-based problems that hinder access to information on markets and the global market itself (Duncombe & Heeks, 2002). The networking advantages of e-commerce can significantly help enterprises overcome the information obstacles through increased speed, richness, and amount of data flowing between the enterprises and market actors. It will ultimately lead to better information flow and greater market reach between companies.

Linkage

The entry to the market is often conceived based on excellent access to clients. Given the current global business picture, where the market is more organized in product systems and distributor' structure, it implies more potential in integrating with global chains (Dolan and Humphrey, 2001; Gereffi, 2001). However, in most cases, the developing nations are often excluded out of the links. With e-commerce, these developing countries could gain access to such links, increasing their firms' visibility. Getting linked to supply networks can help increase diversification by embracing new opportunities presented by technology through digital data streams like business procedure outsourcing. It would be essential in increasing the overall firm competitiveness. E-commerce is an excellent tool for business interactions as they help businesses communicate with suppliers and customers and provide information on their products or services (Cosgun & Dogerlioglu, 2012).

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Flexibility

E-commerce also contributes to flexible working hours and practices, as the businesses could be reached 24 hours for seven days of the week. The customers or suppliers could contact the businesses at any time compared to the traditional business. It could involve checking balances, purchasing products, or obtaining information from the enterprises. The flexibility in working hours is vital in enhancing the quality of life of individuals as one could access urgent services or products when needed. It facilitates happier and healthier working environments as it reduces environmental pollution since some people could work by reducing the number of people commuting to workplaces.

In summary, SMEs enjoy multiple benefits as are a result of e-commerce adoption, including:

- Improved productivity through the creation of new relationships with customers and suppliers as well as other businesses
- Improved cost and transaction cost savings.
- Increased speed of business.
- Improved transaction efficiencies.
- Increased marketplaces opportunities by gaining access to a diverse range of markets.
- Improved communication /quality information.
- Reduced information search and transaction costs (Khurana, 2019; Wills, 2014).

2.1.6 E-commerce Adoption in Developing Countries

ICT has been part and parcel of e-commerce growth, which is an important part of the economic development of businesses. E-commerce has proven to have an important effect on GDP growth in developing and developed nations. Studies point out that e-commerce is a significant contributor to global trade as it integrates developing nations into the global economy. Also, e-

commerce has played a role in overcoming economic problems among developing countries because it increases productivity and access to markets worldwide with hardly any obstacles at reduced transaction cost (Humphrey et al., 2004).

Despite the benefits, many emerging nations are still trailing behind their developed counterparts in e-commerce adoption; hence multiple types of research have been carried out to evaluate its adoption in particular regions. Molla and Licker (2005) conducted research geared towards identifying factors impacting e-commerce adoption in South Africa. The significant elements uncovered included environmental aspects like institutional e-readiness as well external e-readiness. The model specifically involved an experimental study with 150 businesses in the country.

In 2006, Kapurubandara and Lawson studied the barriers, and related support needed for Sri Lankan SMEs to adopt ICT and e-commerce. The factors influencing the adoption that was realized fall under four categories, including internal and external obstacles and internal and external support for the organization. The study involved 150 SMEs in the region in which the barriers to e-commerce adoption were attributed to top management, legal and regulatory policies with a lack of government solutions.

Aghaunor and Fotoh (2006) applied the Innovation Diffusion Theory to explore aspects that impact e-commerce adoption in Nigeria’s banking industry. The research included questionnaires and interviews aimed to test organizational factors, perceived technical factors, and perceived external factors among eight financial institutions. Perceived complexity, perceived benefits, organizational capabilities, and perceived compatibility were the main factors affecting adoption. Moreover, the researchers also identified the determinants of market e-readiness, I.T. capabilities, and government e-readiness for the growth of the e-commerce sector.

Al Ghamdi et al. (2013) reviewed the literature to examine Saudi Arabia's e-commerce position and the elements that impact the adoption as well as diffusion of e-commerce. The

researchers pointed out governmental support and consumers' and retailers' involvement level as the factors playing a significant role in adopting e-commerce in Saudi Arabia.

Besides, external barriers such as poor delivery and transport systems are also cited as factors hindering e-commerce adoption in emergent nations. It becomes difficult for businesses to distribute products purchased over the internet. The organizations also face problems related to the uncertainty of taxation laws, which hinders such businesses from adopting ICT and e-commerce (Alamro & Tarawneh, 2011; Dedrick and Kraemer, 2001). Generally, developing countries with exposure to ICT and e-commerce infrastructure is significantly lower than in developed countries. can be attributed to several factors. Some researchers associate the low level of adoption of cultural factors, including computer anxiety, towards e-commerce operations (Grazzi and Vergara, 2012). Therefore, it can be wrapped up that e-commerce is yet to be fully utilized among the emerging countries despite it being a pillar to the economic development of a country in which Jordan is part.

2.1.7 E-Commerce Adoption in Developed Countries

Premkumar and Roberts (1999) researched aspects that impact the rural small businesses' level of e-commerce adoption in the United States from a global perspective. Their study involved ten independent variables, which fell under innovations, organizational, and environmental characteristics. Considering data from 78 organizations with structured surveys, the research points out competitive advantage, top management, size of the organization, external and competitive pressure as the major elements influencing the adoption of new technology in an organization. In Ling's (2001) study on the aspects that influence the adoption and diffusion of e-commerce among SMEs across Australia and Singapore, two major factors were recognized: internal and external environmental factors. The external factors included industry and national support, while internal ones involve innovation, innovative, and organizational aspects.

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Daniel and Grimshaw (2002) put forward a framework to distinguish e-commerce adoption by large and small businesses in the U.K., which incorporated eight factors such as competitive pressure, expansion of market reach, customer reach, and customer pressure. The study involved companies from various sectors. Their research pointed out enhanced customer services and supplier pressure as the major aspects that influence e-commerce adoption in SMEs. However, for large companies, the elements included operational efficiency and costs.

Gibbs and Kraemer (2004) investigated the e-commerce application through cross-country research. They designed the research model combining technological, organizational, and environmental aspects that affect how the business adopts e-commerce in their operations. The research involved surveys in ten countries with companies in three different sectors. The study recognizes technological resources, perceived benefits, finance, government promotion, and external pressure as the factors influencing e-commerce adoption in nations.

Aguila-Obra and Adilla-Mele'ndez (2006) research looked at the elements influencing internet technology adoption in Spain through innovation adoption theory. The study presented a framework consisting of four categories: organizational characteristics, external factors, technological factors, and firm size. It involved data collected from 289 companies across the nation through structured surveys. According to the analysis of data from the research, the main factors playing a big role in the adoption of internet technology in Spain include technological resources and managerial capabilities.

According to Alexander (2006), the main drivers of new technology adoption are industry, regulatory, and the owners' desire. The study was centered on SMEs to look at the environmental, organizational, assimilation, and information technology factors and their impact on e-commerce adoption. Snowden et al. (2006) studied the technological acceptance and m-commerce in England through the technology acceptance model, which presented a couple of determiners. The factors included enterprise preferences, wireless trust environment, technology complexity, social

influences, ease of use, and user intention. From the research, it could be concluded that technology acceptance depends on one dimension of factors but cuts across bidirectional relationships and influences between layers of approval.

Moreover, Li and Xie (2012) carried out a study to build a framework to determine e-commerce adoption in developed countries. They reviewed several pieces of literature, categorizing factors affecting e-commerce acceptance on basis of technological and environmental perspectives. Their study alluded to those factors with significant impact on e-commerce adoption including corporate strategies, external pressure, managerial attitudes, and the company's technological capability.

2.1.8 E-commerce in Jordan

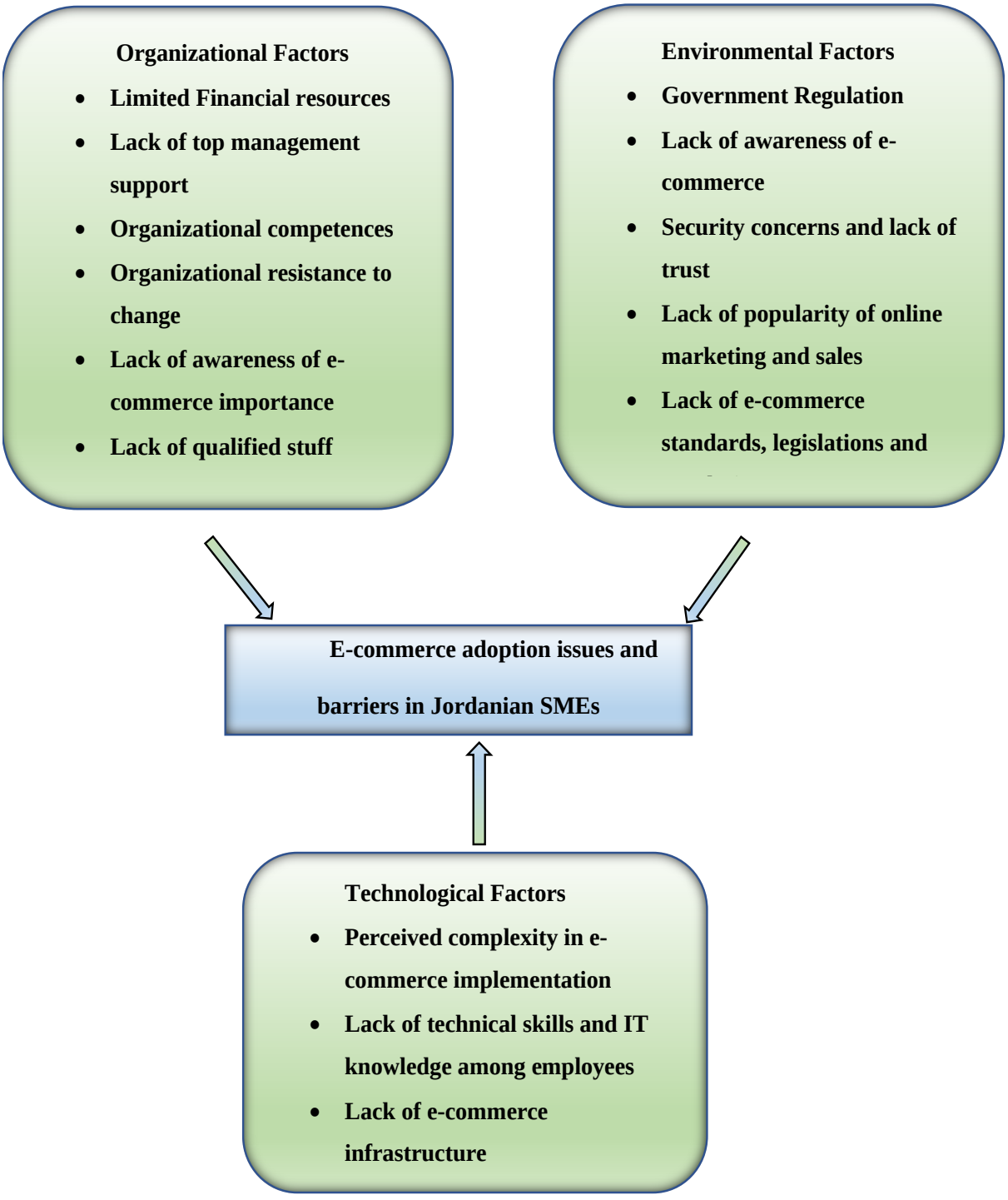
Among the businesses in Jordan, as mentioned previously, SMEs are considered the backbone of the country's economy, as they make up 98% of all the manufacturing and service enterprises (Economy, 2017). The e-commerce adoption is still low in Jordan even though efforts are being put forward to increase its penetration. The internet service providers provide services to their customers through narrowband and broadband infrastructures. Given the benefits that e-commerce brings to the economy and overall development of a country, the Ministry of Information and Communications Technology in Jordan (2007) came up with national strategies geared towards mobilizing the nation to establish technical and commercial capacities for E-commerce adoption. The plan would boost trading activities among businesses and customers (Modee.Gov.jo Report, 2008).

The government is concerned with e-commerce adoption since it realizes that it is essential not only for individual businesses but also for the countries. Among the benefits include reduced costs, improved efficiency, and low prices of goods and services due to the competitive advantage. Therefore, the government has put forward rigorous efforts to increase awareness to promote e-

commerce implementation by Jordanian SMEs. Despite these efforts, the ESCWA (2013) report indicated that e-commerce usage was still low.

As ESCAWA emphasizes, e-commerce adoption in Jordan is still developing, as most businesses are yet to maximize its potential benefits fully. Behind the low adoption are technological, environmental, and organizational barriers, which affect Jordan and industries in other parts of the world (Doshi, 2018; European business review, 2019; Hassan, 2018).

Figure 2.1.1: Environmental, organizational, and technological barriers to E-commerce in Jordan.



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2.1.1 Levels of E-Commerce Available in Jordan

Web Presence

It is the phase in which a website is created and information is provided to the user. At this phase, the organization only displays the data about its commodities and services on the website, in which the communication is one-way (Hussein & Baharudin, 2017).

Portal

The phase involves two-way communication between customers and suppliers. Communication revolves around searching for information, ordering products, and giving feedback on the services (Hussein & Baharudin, 2017).

Transaction Integration

The phase differs from portals due to the added feature of financial transactions for customers and suppliers. The website facilitates a segment in which consumers can order and pay online for the products, supporting payments (Hussein & Baharudin, 2017).

Enterprise Integration

The phase involves highly collaborated business activities between customers and suppliers with integrated B2B and B2C transactions such as chain integration (Hussein & Baharudin, 2017).

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2.1.9 Types of E-commerce

Electronic commerce exists in various categories. They are classified concerning the nature of transactions and participants (Schneider, 2007). The main types include business to consumer, business to business, consumer to the company, and customer to customer commerce.

2.1.91 Business to Customer (B2C) E-commerce

B2C involves commercial activities taking place between the business and the consumers. It is the use of e-commerce to promote data interaction, personal finance management, product purchase, and after-sales information dissemination (Rayport and Jaworski, 2001).

Companies to consumers e-commerce is increasingly becoming a popular and well-known business category. (Van Slyke and Belanger, 2003). Many vendors around the world are availing most of their products on websites for the customers to access. The B2C is not limited to products only but also the service industry in the SMEs. B2C for SMEs plays an essential role in the national economy as it accounts for most enterprise activities. Providing support to the country's SMEs via different institutions and programs is almost practiced worldwide. The typical use has turned into a computer user, and the physical store has turned into an information technology-intensive phenomenon (Koufaris et al., 2001). Among the B2C businesses includes Amazon, which sells different kinds of items over the internet. Developed countries have maximized the use of B2C e-commerce; however, developed countries are still lagging (Kurnia & Ali, 2012).

2.1.92 Business to Business (B2B)

For the case of B2B, business activities involve two or more organizations, where the internet is used to facilitate payments, inventories, and distribution (Turban et al., 2006). The B2B industry, particularly in supply chain management, has the highest potential profit

opportunities. The business activity occurs between two different parties, such as wholesalers and retailers (Chong et al., 2011, 518).

Their transactions represent the ones that have long been made through internal exchanges over a long period of time (Grewal et al., 2010). It involves more participants than B2C, requiring a large infrastructure as the transactions are usually of bigger volume than B2C. B2B transactions are regulated by a complicated business regulation of the transacting parties requiring more certainty and predictability of order fulfillments compared to B2C (Grewal et al., 2010). Given the laid down requirements, the barriers that come about due to geographic fragmentation of the market become minimal, making it easier for the buyers to identify new sellers with better deals. It facilitates the reduction of processing costs and costs for interacting with each other.

B2B e-commerce not only plays a role in lowering prices but also improving market intelligence. It enables the suppliers in identifying and serving the yet unsatisfied market demands and supply chain integration that improves company's logistics (Bloch & Catfolis, 2001). Previously, these transactions were mostly limited to large firms which had the mandatory resources to carry them out. With the shift to a process focused on B2B concept, which reduces the costs incurred in adopting B2B, SMEs are also increasingly taking part in adopting B2B instead of leaving it for only large companies which could afford the expenses (Dorn et al., 2009).

2.1.93 Customer to Customer (C2C)

C2C type of e-commerce involves a direct relationship between consumers, as it facilitates their interaction and can sell or buy products and services from each other. The individual transactions taking place on the same website results in bringing together consumers constituting a couple of buyers in the business framework (Rayport & Jaworski, 2001). C2C occurs between Customers who are not completely dependent on the organizations anymore and are instead using auctions, online forums, and chat rooms to conduct their business transactions, and web-based

discussions. The clients may be exposed to various payment methods such as mailing cheques or a cash payment to the vendor via the internet options. With this kind of business, the intermediaries are eliminated who may exploit the sellers by extorting a certain amount of money for their profitability (Strader & Ramaswami, 2002, 46).

Apart from buying and selling, the consumers may learn a couple of things, such as bidding strategies in the auctions and forums. China is recognized as among the popular countries to adopt C2C e-commerce. For instance, C2C accounted for 93 percent of all internet transactions by 2007 (Chen et al., 2007; Li & Liu, 2007). Also, one of the platforms that facilitate C2C includes eBay, as it brings together buyers and sellers transacting a variety of products. The reason behind eBay's popularity is due to the ease of interactions between the sellers and buyers. Besides, the C2C online business lacks time and space restrictions compared to traditional auction models; hence users can maximize the probability of transactions and enable identification of merchandise's real value (He et al., 2008). However, C2C e-commerce relatively lags compared to other types of online transactions. The low usage is based on the fact that users lack trust in each other as they usually have to transact with little or no knowledge (Ye et al., 2013). It is also attributed to a lack of intention in online purchases, which accounts for low adoption of e-commerce in most countries (He et al., 2008).

2.1.94 Customer to Business (C2B)

C2B occurs in processes where customers transact directly with companies that require particular services like LetsBuyit.com and Priceline.com (Turban et al., 2006). B2B and B2C, the biggest forms of e-commerce, have been quickly increasing throughout the years. In the C2B model, the customer drive is reflected in both purchase and sale of the product and the manufacturing process. Businesses usually carry out mass customization products based on user needs. Mass customization involves a production model that plays a role in producing various

products and services at costs close to mass production. It enhances the production of goods at a low price (Zhang et al., 2019).

2.1.95 Business to Government E-commerce (B2G)

B2G is the sale and marketing of items and services to federal, state, or local agencies. Many contracts are granted in response to a request for a proposal from an agency. Businesses used to interact with different businesses or immediately with buyers regularly encounter surprising setbacks when working with government entities (Srivastava & Teo, 2010).

2.1.96 Government to Business E-commerce (G2B)

The G2B model is where the government offers essential services and data to business entities. The G2B model website is the central approach the government utilizes to provide particular services. The government utilizes the G2B model website to approach business firms. For instance, the government uses those websites to facilitate auctions, tendering procedures, and also functionalities linked to software submissions (Jayashree & Marthandan, 2010).

2.1.97 Government to Customer E-commerce (G2C)

These comprise digital commerce operations, like tax payment, land and automobile registration, data provided to the public, carried out between the government and its users (Nemat, 2011). Through these forums, the government avails vital services to its residents efficiently and information is distributed at a lesser cost.

2.1.98 Customer to Government E-commerce (C2G)

This model approves shoppers to give remarks or inquire records about government authority from the public sector. It encompasses digital transactions between individuals and the

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public administration (Nemat, 2011). This includes services such as paying an electricity bill via the government website.

The table below summarizes the classes of e-commerce with their features.

Business to Customer The interactions involve direct transactions taking place between entities and final users.	**Business to Business** Involves business transactions between and among multiple firms
❖ Customers have access to interactive information ❖ Businesses provide management services for personal finances. ❖ Facilitates customer purchases of goods and services. ❖ Customers have access to powerful web searching materials.	❖ Improved communication between or among various firms ❖ Promotes provision of stock items to business organization or suppliers ❖ Enhanced transactions among different categories of traders such as suppliers.
Customer to Business The operations involve individuals selling products to businesses or seeking sellers online to carry out transactions.	**Customer to Customer** They involve virtual communities that help consumers to trade with each other.
❖ Facilitates direct communication between firms	❖ Increases business transactions among individual consumers ❖ Magnifies purchasing between consumers

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❖ Provides a channel for customers to ask for particular services or items directly from businesses ❖ Speeds up transactions between consumers and organizations.	❖ Promotes interactions among individual buyers enabling them to carry transactions on the website.
Business to Government Involves businesses selling items, services, or data to governments or government entities.	**Government to Business** Involves the relationships between institutions of public administration and enterprises.
❖ B2G networks provide a mechanism through which the businesses bid on goods or works required by their different departments.	❖ The initiatives arise from government institutions, and enterprises are the target group. ❖ It covers an electronic transfer of data between businesses and the government, usually using the internet, so communication is more efficient than is generally off the internet.
Government to Customer Explains when a government or public sector agency utilizes e-commerce to sell goods or services to customers.	**Consumer to Government** A model where citizens transact with the government.
❖ Facilitates activities between the government and its consumers, including paying taxes, vehicle	❖ Allows customers to give remarks or request data about public sectors directly to the government authorities.

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registration, and information and services.	

Table 2.4: Summary to main categories of E-commerce with their features

2.2 Barriers to E-commerce

E-commerce does not undergo a smooth transition in various, as it encounters a couple of barriers. The rapidly evolving technology is one of the hurdles to e-commerce. Most businesses always feel the pressure to catch up and avoid lagging in terms of technological changes. They may also get pressured to innovate and develop models towards exploiting the new opportunities. Some of these strategies may not be carefully implemented or carried out ineffectively, which results in adverse outcomes. Business models can easily be copied and emulated over the internet; however, their results might negatively turn (Rayport, 2007).

Moreover, businesses may also face difficulties in terms of compatibility of older and new technologies (Schneider (2011). In some organizations, problems arise where the older systems fail to communicate with web-based and Internet infrastructure. The organization will be forced to run almost two independent methods to enable data sharing. In such cases, the business will invest in new systems or infrastructure that links various systems, leading to extra costs and disruption of efficient organizational management.

In addition, access to technology is considered to be a hurdle to e-commerce, especially in emerging nations, including computers, connectivity, and internet gateways. The technological challenges are also attributed to unreliable electricity and infrastructure in these countries. E-commerce success is highly dependent on the technology infrastructures, and they are expected to connect different places within and between countries. In particular, in the case of telecommunications, accessing the internet may be expensive with a prolonged speed. The outmoded and unreliable telephone connections in developing countries are often attributed to

narrow bandwidths and low internet connections. There is an imbalance in internet connection in most regions. The developing countries tend to concentrate technology in urban places, leaving the rural areas out of the possibility to maximize potential e-commerce adoption benefits (Lawrence, 2002).

Also, the social-cultural aspects have a huge influence in hindering e-commerce adoption. Most emerging nations are far behind in supporting e-commerce due to apprehension of technology and cultural barriers. Although online transactions such as cataloges are primarily used in developed countries, they may be new and novel approaches to developing nations. They may not suit the culture of business activities. Given that e-commerce is based on such methodologies, the local and cultural characteristics pose problems to e-commerce adoption. The most common cultural barriers are trusting in the institutions, limitation on personal data, and language (Efendioglu et al., 2004).

Besides, socioeconomic barriers are a big challenge in some countries, particularly the low-income ones. The poor state of the education system is pointed out as a factor hindering e-commerce penetration. The developing countries lack sufficient I.T. education, making it difficult for citizens to appreciate web-based business operations. The unavailability of payment systems is also seen as a challenge. An organization environment that supports online transactions is significant to e-commerce growth, which includes credit, debit, smart cards, and online currencies (Lawrence & Tar, 2010). Most individuals in these countries lack credit cards, with only a few banking sectors offering a national clearing system. Even for individuals who possess credit, the threat of fraud drives them away from providing their details or engages in online transactions to the ineffective resolution of a fraud case by the banks (Efendioglu et al., 2004).

Away from the institution of the transaction, e-commerce meets hurdles such as inefficient distribution and delivery systems and unreliable transport and postal systems (Duch-Brown & Martens, 2015). The unreliable systems hinder online business procedures within the country and

across countries as they also lower the private sector's motive to invest in e-commerce. Distribution channels also impact e-commerce activities in developed countries, however, based on individual firms. A study on the E.U. countries indicated that firms with extensive and established distribution channels were less likely to engage in cross-border e-commerce activities. It also impacted their volume of sales (Duch-Brown & Martens, 2015). The E.U. also pointed out the unsuitability of goods and services for e-marketing as one of the obstacles to e-commerce, based on the research information from the companies (Savrul et al., 2014)

E-commerce meets resistance from businesses that take it as something that will harm the labor sector. Some companies fail to embrace it since I.T. may be viewed from the perspective of increasing unemployment. Based on this mentality, e-commerce adoption is largely impacted, as many organizations shun its implementation due to fear of associated impacts (Payne, 2007). It may be fueled by a lack of awareness of the number of job opportunities are created as an outcome of e-commerce adoption, contrary to the notion that it deprives individuals of their jobs.

The political and government barriers are also factors affecting e-commerce. Most low-income countries lack clear ICT policies guiding the provision of internet services, which hinder the progress of implementation of e-commerce activities (Al-Momani et al., 2018). Policies that regulate e-commerce expansion are essential for its adoption. It is believed that government policies are important in providing an environment for widespread internet use in developing countries. Government initiatives are also major players in promoting ICT utilization, education, and establishing a suitable e-commerce regulatory framework (AlMomani et al., 2018). Government involvement and participation in tariff reduction initiatives have increased the affordability of equipment. Unfortunately, the conditions in most low-income nations are not conducive to promoting the widespread, less costly, and effective internet utilization, greatly affecting the adoption of e-commerce (Lawrence & Tar, 2010). Recent research on the deterrents to e-commerce cited legal and regulatory factors as significant challenges in India due to the lack

of favorable policies (Jena, 2018). Figure 2.1.2 below summarizes the impact of the main factors impending e-commerce adoption in SMEs. According to E.U. statistics, the effect of the obstacles differs with the size of the enterprises, as indicated in Figure 2.1.3

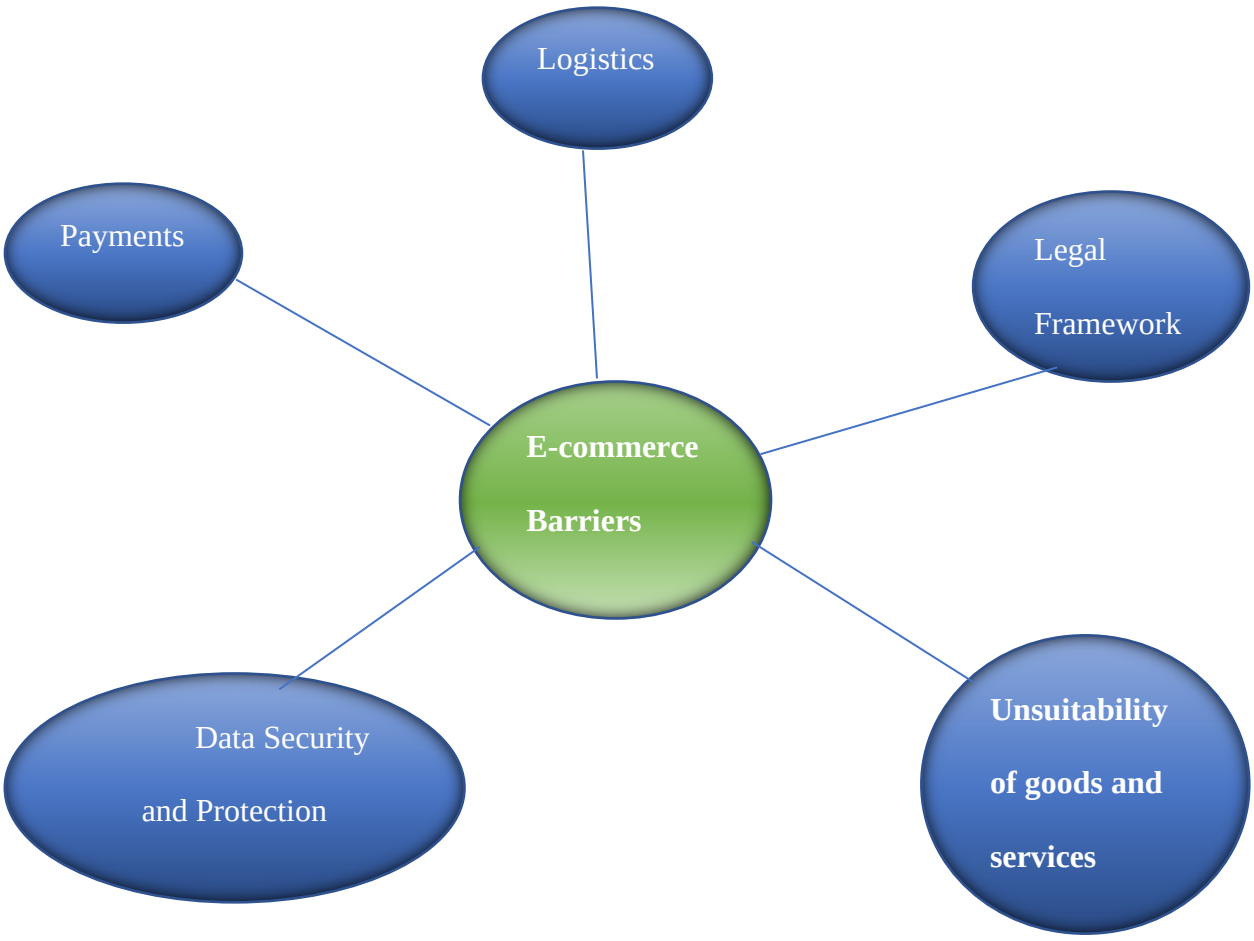


Figure 2.1.2: Summary of the barriers to E-commerce adoption among SMEs.

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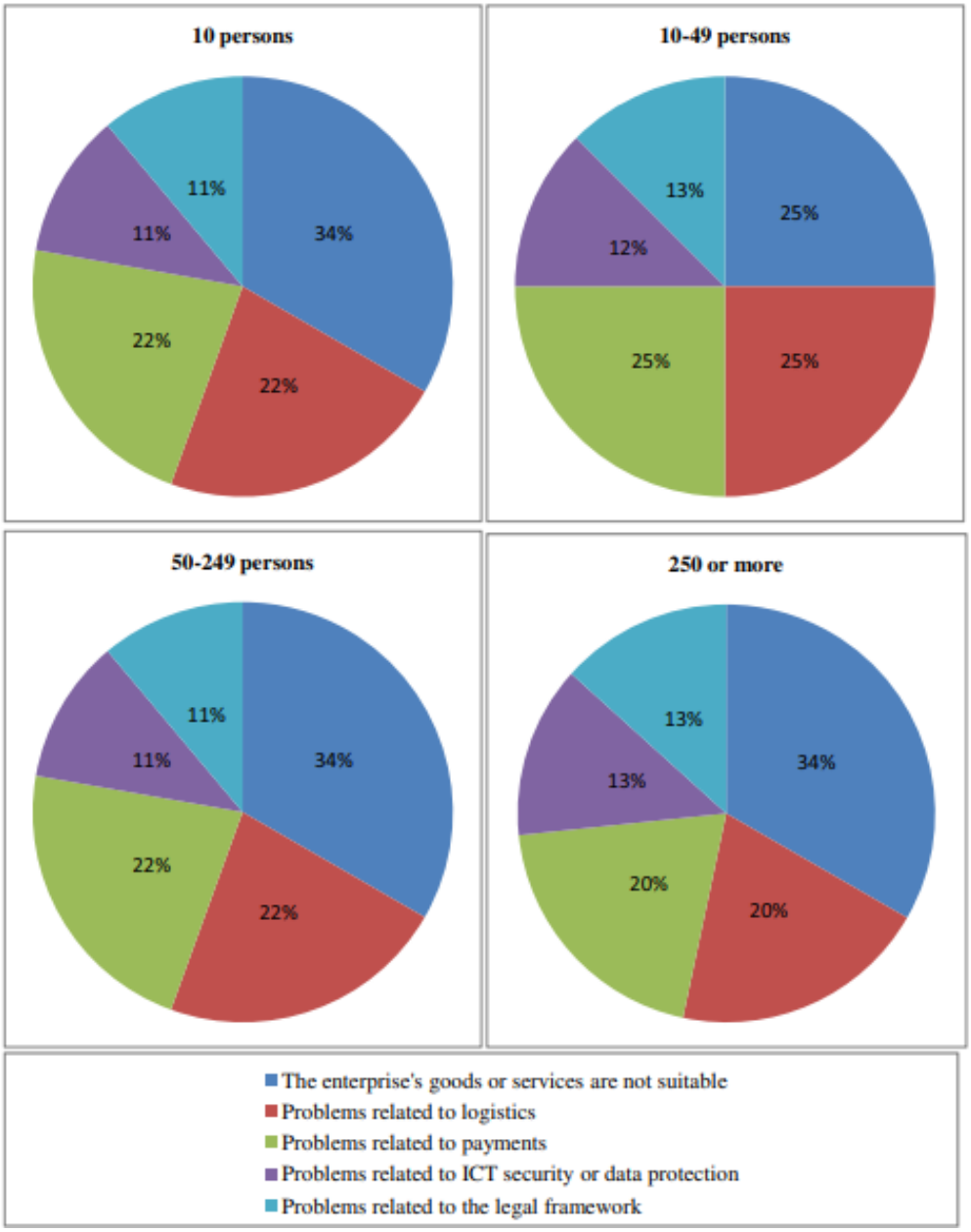


Figure 2.1.3: Obstacles that limit/prevent the enterprise from selling through the website (Savrul et al., 2014).

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2.2.1 Government Support

Government supports the degree to which the government plays its role in supporting and encouraging the adoption of SMEs. It can occur through the provision of electronic infrastructure, policies, legislation, and training. In any particular country, government support is key to decision-making for e-commerce adoption.

The Jordanian government prioritized ICT at the onset of 2000. It enacted an initiative known as REACH, aimed at supporting both the public and private sectors. It was centered on developing a vibrant, export-oriented ICT sector that can compete internationally, attracting foreign investments into the country. The REACH report evaluated the country's weaknesses and strengths as well as other competitors. The Information Technology Association of Jordan (INTAJ) was behind the establishment of the REACH initiative, as it looked forward to promoting and advancing the software and I.T. service industry to reach the international market. With support from the ministry of ICT, the number of organizations making up INTAJ grew from 53 in 2000 to 143 in mid-2006. Those constituting this association encompass firms operating in the Jordanian software field, support, application, and firms that supply ICT products and services (Oxford Business Group, 2021).

In addition, the government also developed e-government in 2000, aiming to enable enterprises and citizens to access better service and increase government performance and efficiency. The initiative was also geared towards ensuring transparency in government operations. All the government ministries have their services online, as they can easily communicate with citizens and businesses (Elsheikh et al., 2008).

ICT usage among businesses, industries, schools, and universities kicked off way back almost two decades ago through the government's participation (Sahawneh, 2003). For instance, e-learning started in 2002, under the Ministry of Education and Ministry of Higher Education and Scientific Research supervision. The initiative takes place in schools, colleges, and universities.

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The industry is centered on introducing I.T. courses in the curriculum and facilitating the school level's essential infrastructure. The I.T. infrastructure in schools, such as computers and the internet, operate within the school network. Moreover, I.T., E-commerce, and programming language courses are being taken in Jordanian learning institutions (Majdalawi et al., 2015).

The government also commenced an ICT literacy program in 2004, managing to train more than 20,000 government employees on the International Computer and Internet Driving License (ICDL) within the same year (ESCWA, 2005). Similarly, the government launched a 'PC@every-home' initiative in 2004 to increase the accessibility of computer and internet equipment among the citizens. They provided individuals with packages including personal computers, software, modem, and ADSL access. The government encouraged individuals to purchase these facilities by subsidizing their prices by almost 40% (ESCWA, 2005).

Jordan was one of the initial Middle East countries to enact laws concerning ICT transactions due to widespread internet use. The legislation was aimed at protecting internet users against fraud and threats. The Electronic Transaction Law (ETL) provides legal support for electronic trade but does not cancel other existing legislation. The law covers many internet transactions such as computer data transactions, internet-based sale of goods and services, and transactions between other parties. The legislation requires an agreement between the parties that they will be contacting their business online (Al-Husban et al., 2018).

2.2.2 Globalization and Its Impact on SME E-commerce Adoption

Globalization involves the spread and connectedness of production, communication, and technologies worldwide. Businesses worldwide experience the impact of globalization due to factors such as the creation of new relationships and structures.

With the increase in production and technological developments that have increased the speed of transportation, and the eases of communication among countries, globalization has had

an impact on businesses. Globalization has been fueled with developments in the industrial revolution, growing connections in economies of scale leading to complex and dense economic changes (Ekodiyalog, 2012).

Globalization creates a network of business environments where firms can extend their operations across national boundaries, promoting interconnection between markets. With globalization, businesses obtain strong competitive positions less costly, as they gain massive products, services, and consumers. These companies obtain a competitive advantage by opening more markets acquiring new raw materials diversifying resources and creating new investments and opportunities (Incekara and Savrul, 2012).

Businesses are experiencing revolutionized production and distribution systems. Globalization leads to creating new structures and relationships in which decisions and actions in one of the world's regions significantly impact other areas. Such developments come as a result of information processing and telecommunication changes. The developments of telecommunications and data processing has enabled coordination of global research, marketing, and other business operations. Fast communications results in trading financial instruments all day hence promoting allocation of return-sensitive resources in the businesses (Xing, 2018).

The increase in the number of exporters has led to increased competition. The impact of competition on SMEs performance is unpredictable. Increased competition in the product market may lead SMEs to drop their price increases. However, the pressure to survive in a competitive business environment may cause the businesses to adopt new technologies, thus enhancing the productivity of SMEs. Concerning the labor market, the higher wages introduced by multinational organizations or exporters may lead to changes in other industries, hence increasing the production cost in SMEs (Asiedu and Freeman, 2007).

The technological advances make it possible for almost every business to buy, sell and adopt cooperation globally. In addition, the customers gain a platform for exploring global markets

and locating the best offers. It pushes even SMEs and locally oriented businesses to see their business operations through the lens of the worldwide market. For some SMEs, this will mean the availability of new opportunities to explore new markets and expand their business potentials. However, some enterprises may face increased competition which may manifest in terms of challenges and threats to the business. The SMEs will be forced to engage in practices towards quality improvement, cost competitiveness, and efficient management lest they fail to survive in the competitive business environment (Hamad, 2018).

2.2.3 Benefits of Globalization on SMEs

Even though globalization exposes SMEs to various challenges, including the influx of foreign investors into the local market and the reduction of prices by domestic competitors due to global outsourcing, the enterprises also benefit by accessing additional markets. The SMEs can also maximize their small size and emphasize on customization and specialization of their products. However, according to Totonchi and Gholamreza (2012), most SMEs may not benefit from cost merits in mass production since some costs are not relative to company size.

E-commerce has a significant impact on productivity among SMEs in a globalized world. For instance, in B2B relations, e-commerce technologies may enable the organization to rationalize the business operations and reduce costs. The organization may automate some everyday business operations including, distribution, sales, after-sales service, and inventory management (OECD, 2000). In a globalized economy, the integration of e-commerce plays an essential role in SMEs: (Al-Zoubi, 2016)

- Enables SMEs to access world markets
- Promotes tourism in emerging countries on a global scale.
- Promotes commercialization of agricultural and tropical products in the international market

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- ❖ Open channels for businesses in developing nations to connect to the global supply chains
- ❖ Helps service industries in developing countries operate efficiently and effectively towards the provision of specific goods and services to global consumers.

2.2.4 The Digital Divide and E-commerce Adoption in SMEs

Several definitions do exist for the digital divide, based on various literature. For instance, OECD (2001) defines divide as the contrast between individuals, families, businesses, and geographic locations regarding ICT access and its usage among various processes. However, the definition keeps evolving as the field expands, showing that the digital divide is not just a division between the rich and the poor (Van Dijk, 2006). According to Van Dijk (2006), the biggest obstacle to bridging the digital divide is physical access to computers, networks, and software. The necessary skills and knowledge are essential for making use of the accessed internet facilities. However, will need to have proper intentions are crucial to maximize its benefits. Fong (2009) suggests that observation of the digital divide is based on the idea that a group or segment is left out of data and communication technologies essential for promoting economic growth and innovation.

Arendt (2008) sees the digital divide as the discrepancies in ICT usage between large and small companies. According to the author, SMEs are vulnerable to changes in the economy and competitive environment because SMEs cannot maximize the advantages of ICTs and e-commerce like large organizations do. The digital divide is attributed to both ICT access and its appropriate use. Moreover, it focuses on the user and company characteristics.

Wielicki and Cavalcanti's (2006) studies indicated that the digital divide occurs mainly in small and medium-sized enterprises and companies in rural areas. According to them, the digital

divide is due more to educational obstacles, training, and knowledge of employees than the inaccessibility to ICT or the lack of financial resources to purchase ICT facilities.

Hashim (2007) also points out the benefits of SMEs to the economic progress and the significant role of e-commerce in promoting the creation of employment and competitive advantage. However, without giving a specific definition to the digital divide, Hashim puts down that the companies under his study failed to implement e-commerce and were on the wrong side of the technology gap. It pointed to the fact that there are two sides; those companies are incorporating ICT in their operation and do not use ICT, thus the existence of the digital divide.

Besides the authors cited, Dewan and Riggins (2005) pointed out what the digital divide means today. Regarding Van Dijk's (2006) reasoning, the authors tried to distinguish the digital divide by classifying it into two categories; the first and second-order digital divide. The first level of the digital divide is due to the barriers impeding access to ICT. The second order refers to the discrepancies in ICT usage between groups that have already accessed ICT. They alluded those technologies have increasingly become accessible, with many parties in any social system accessing them. Following this, emphasis on the second-order digital divide is more important today.

Dewan and Riggins' studies, Warschauer (2003), also emphasized the digital disparities pointing out that the main issue is not access to ICTS but rather how the technologies are used. His primary focus was literacy, as it plays a key role in focusing on central issues affecting e-commerce adoption. Warschauer puts down that:

- Just as there exist multiple types of literacy, so is online access.
- Just as literacy's meaning and value differ with particular social context, the same applies to ICTs access.
- Both literacy and access to ICTs are in a continuum context rather than in bipolar opposition.

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- ❖ Focusing on literacy alone or ICT access alone could not result in automatic benefits.
- ❖ It takes both education, culture, and power to acquire literacy and access ICT as well.

The literature points out that the availability of computers and internet connections corresponding to social mobilization leads to wasting resources and encourages the continuation of the existing digital inequalities.

Concerning ICT usage in the U.S., DiMaggio and Hargittai (2001) and Hargittai (2003) pointed out that digital inequality can better replace the term 'digital divide' as it incorporates multiple dimensions of internet use well as factors beyond connectivity. According to the three authors, there are five dimensions in which internet and website usage are used in e-commerce processes:

- ➢ **Equipment quality**: Usage of outmoded hardware or software and slow internet connections limits the ability of potential users to benefit from the internet usage.
- ➢ **Autonomy of use:** The places from which the potential users access the internet, such as homes and workplaces, affect the individual's web use and sophistication level.
- ➢ **Social support networks:** People who can obtain information from social contacts tend to learn more quickly and with exposure to a more significant extent of online services.
- ➢ **Experience**: The individuals who invest their time in ICT usage are more likely to become sufficiently familiar with it and experience increase efficiency and convenience of technology.
- ➢ **Skill level:** determines the ability to gain benefits from ICT usage.

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At long last, the authors came up with a conceptual framework centered on studying the digital divide, incorporating both first and second-order exclusions, which involved three views: individual, organizational, and global perspectives. Dewan and Riggins (2005) pointed out that some organizations enjoy benefits over competitors as they redefine market rules from the corporate philosophy. The organizations that cannot reach the same success being strategically disadvantaged. The changes in e-commerce investments and organizational adoptions are taken as a social concern when they turn into a problem of competitive disadvantage, particularly with the SMEs in rural regions and the ones. The managers of the latter do not recognize e-commerce benefits.

2.2.41 Digital Divide Impacts on E-commerce adoption

The digital divide tends to limit SMEs from enjoying the benefits associated with e-commerce adoption, which manifest in various aspects. The policymakers and practitioners are responsible for ensuring internet and web usage, particularly in developing countries. The first initiative should involve raising public understanding of the advantages of e-commerce on the daily business activities in a particular country, such as reduction in transaction costs. Secondly, overseeing the implementation of legal and technical infrastructures will play a crucial part in supporting e-commerce penetration into the public.

Technology Access

In most developing countries, the existing telecommunication infrastructures cannot satisfy the high demand for essential telecommunication services. Also, the SMEs which adopt e-commerce in their business processes tend to depend on analog networks and modern technologies (Van Dijk, 2017). Therefore, unreliable telecommunication services and high connection charges

are significant obstacles to better internet and web utilization. For such SMEs, the driving force to internet users can benefit from reduced communication costs and enhanced communication speed. Regardless of the high connection charges, the organizations take it cheaper when conducting business processes such as sending emails over the internet than making long-distance business telephone calls.

Technology Literacy

As the global customers expect the suppliers to have at least essential competencies in internet-related technologies, technological literacy becomes a key concern to digital discrepancies. The low levels of awareness are barriers to access e-commerce applications. According to Van Deursen & Mossberger (2018). One of the challenges to acquiring skills and capabilities in developing countries is the multiple modes through which ICTs can facilitate commercial interactions and transactions. With the complexity of global value chain structures, it becomes an obstacle to e-commerce platforms' effective and efficient use. For instance, one of the significant issues that face SMEs with high-speed network access is varied standards of data and formatting. In addition, the type of interfaces and e-commerce applications may not compete with other online trading venues. Therefore, the participation of SMEs in B2B e-commerce can be expensive (Pare, 2016).

Social Access

National sectoral and business culture are important elements that impact the existence of social-related discrepancies. In most cases, it may affect organizations from making effective use of ICT that is already accessible. In various sectors and countries, individuals or organizations may still prefer to use personal networks or face-to-face meetings in sharing information even when the

internet connection is strong. The trading relationships tend to be emphasized over extended periods, and it's perceived challenging to shift it to digital environments (Van Dijk, 2017).

Moreover, the cost considerations also play a crucial function in advancing technology utilization. The cost of internet access in developing countries is taken as too expensive. In most instances, the problem is further coupled with regional variations in connection speeds and high tariffs in telephone calls hence widening the digital divide gap. In such environments, the viability of e-commerce adoption is compromised and undermined (Gibbs & Kraemer, 2014).

Social Use

The perception around B2B e-commerce enables local businesses to sell their commodities and services more efficiently to global markets and develop one-to-one relationships with various business partners worldwide. The companies, particularly in low-income countries, may adopt technologies with the view of reaping such benefits, especially those that specialize in small, one-off sales. However, the problem is that it is not a guarantee such benefits will diffuse among all economic sectors (Aaronson & Leblond, 2018).

Contrary to the business expectations that e-commerce benefits will appear in increased demand for goods and identification of new business partners, it may reduce communication costs with existing partners and efficient information management. However, such benefits may not be realized within a short period, which discourages the firms from e-commerce adoption (Aaronson & Leblond, 2018).

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2.2.5 E-commerce Readiness for SMEs

E-commerce has gained great momentum on the global space on matters economic policy. Due to the impact on the business, large companies and small and medium-sized companies cannot ignore these technologies.

In many developing countries, SMEs encounter numerous obstacles to use information communication technology in several activities. According to Taylor and Murphy (2004), the adoption of e-commerce technologies is faced with a myriad of challenges. According to their study, the factors related to successful adoption are centered on human capital. The study, therefore, concluded that the adoption of e-commerce by SMEs itself is a means to an end rather than an end to itself.

In developing countries, the readiness for SME to be e-commerce compliant may be a rather new idea. It has, however, been propelled by an increased rate of internet penetration globally and the dynamic nature of ICT in businesses. E-readiness bears different definitions. It could mean the extent to which a country or community benefit from the progress participation and information and communication technology advancements. According to the Economic Intelligence Unit, and IBM Institute for Business Value (2007), E-readiness is

> "The situation of a nation's information and communications technology (ICT) infrastructure, as well as its consumers, businesses, and governments' ability to profit from ICT."

Different dimensions were suggested in the literature for measuring the level of e-readiness in a particular market. The tools included qualitative and quantitative measurements to evaluate the status of various parameters that affect how e-commerce penetrates the business environment.

In any country, e-readiness indicates the strength of its e-commerce space to incorporate ICT in its business operations. It comprises a collection of elements that imply the level of preparedness for a given market to grab the opportunities found on the internet (Pouti et al., 2018).

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The measures revolve around the available information and ICT infrastructures, enterprise ability in dealing with modern trends and technologies, and the capabilities and skills of human resources. It also comprises the readiness of the environment, aspects such as market maturity, economic capability, legal domain, and social aspects. The figure below gives a clear summary of the e-readiness context.

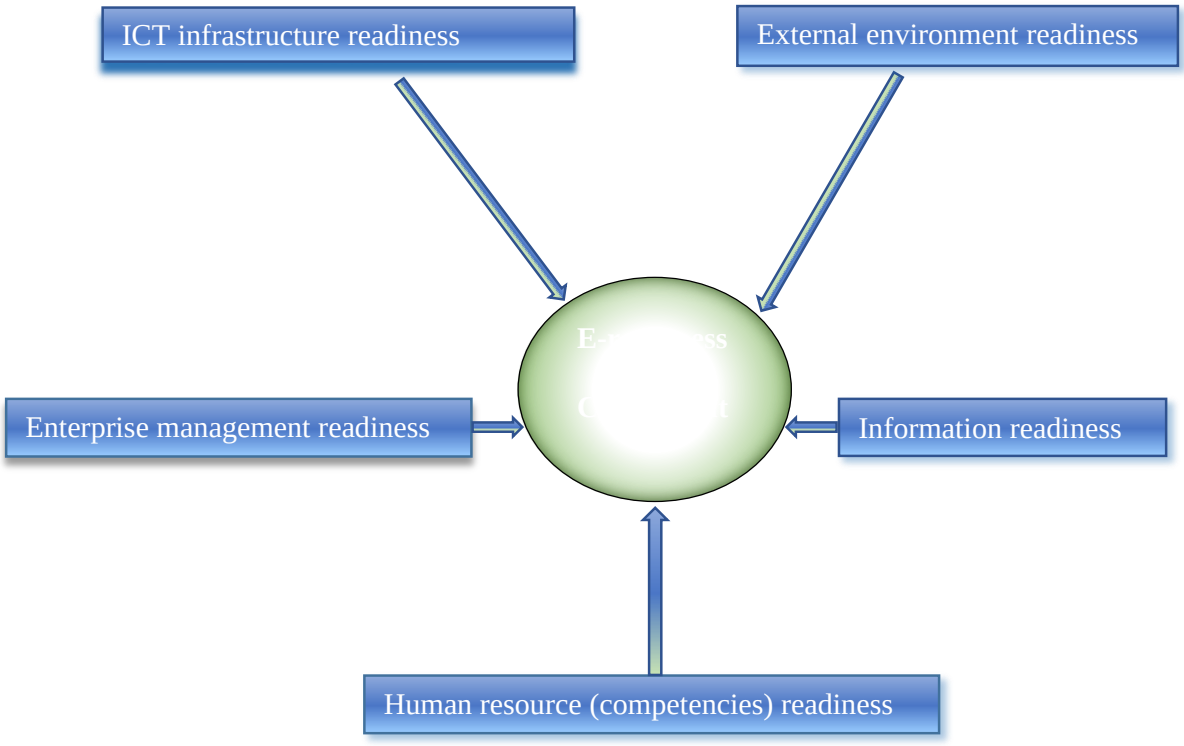


Figure 2.1.4: E-Commerce Readiness Components

Multiple kinds of literature point out e-commerce readiness in various regions, both in emerging and developed countries. Agwu and Murray looked at the challenges that Nigerian SMEs face in the adoption of e-commerce. To offer a better insight into the available challenges, 30 SMES were interviewed, and analysis done for responses from 23 participants. The discussions

involved open questions revolving around internal and external environments, as well as organizational factors. From their study, the issues that surfaced included a lack of regulatory framework for online security and a limited technical expertise and key infrastructure.

Jamali et al. (2015) examined the status of adoption of e-commerce by Iranian SMEs, where the participants comprised of heads of family-owned SMEs. The study uncovered usefulness of e-commerce to business entities as a major consideration before adoption. Furthermore, issues related to organizational resources and subjective norms emerged as barriers to technology use.

Maryeni et al. (2012) similarly researched on the aspects that affected SMEs adoption of e-commerce in Indonesia. The study interviewed different parties such as business owners. Management and staff in the IT departments of mid-level firms. The results indicated relative merits, compatibility, complexity, infrastructure, and security as the technical aspects influencing e-commerce adoption. Moreover, the research indicated that organizational aspects such as IT skills, IT knowledge of owners, and management support were significant elements.

Kaewkitipong and Brown (2008) studied the correlation between e-commerce adoption and a procedure outlook among SMEs in Thailand. Their studies involved semi-structured interviews with responders from various levels of the companies. After that, it supplemented the information gathered with information from local e-commerce magazines and its website. The study presented the economic characteristics, including social relationships, firm size, and skilled staff, as the primary elements in Thailand influencing adoption of e-commerce by SMESs.

The research shows a low rate of e-commerce readiness, especially in emerging nations in which Jordan is part. E-commerce activities are still quiet, with most countries not yet ready to embrace e-commerce and the benefits that come with its adoption.

Akinyemi and Ojetunde (2019) compiled literature on networking and e-readiness among various countries worldwide that is, both developing and developed ones. The study indicated a

significant difference in e-readiness between the low and high-income countries. Among the sampled countries include Kenya, Nigeria, Ghana, South Africa, Finland, Korea, Singapore, the U.K, and the U.S. The findings pointed out that most developing countries were still lagging in terms of their adoption of e-commerce and the capacity to embrace the ICT developments. Countries such as the U.K topped in the e-readiness based on aspects such as staff training and the tendency of technological absorption. Most developing countries, particularly Africa, are experiencing internet coverage problems, something that significantly impacts e-commerce activities.

The overall e-readiness of the world is improving significantly, but from 1 to 10, the total score of inexperience increased from 6.02 to 6.24 in 2007. Concerning micro-index ranking in terms of adoption of e-commerce, Jordan came position 51 globally. However, looking at the Economist Intelligence Unit ranking, Jordan transitioned from 54th position in 2006 (with a score of 4.22) to 50th position in 2009 (with a 4.92) score. Among the Middle East country, Jordan emerged in the 4th position in 2011. The ranking was centered on the country's ability to promote digital businesses and the accompanying ICT services. (The Economist Intelligence Unit 2007, 2008, 2010, Jordan MICT 2006, 2011).

2.3 ADOPTION FACTORS: E-commerce Adoption Factors in SMEs

2.3.1 Review of factors for adoption of E-commerce among SMEs

The adoption of e-commerce by SMEs is impacted by such factors as technical and organizational aspects, managerial, and environment-related factors. The following segment examines these aspects in the relevant literature.

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2.3.11 Technological Factors

Table 3.1 presents the literature review based on the technological context. According to Ma et al. (2003), a firm that decides to adopt technology in its operations does it based on three considerations; the technological availability on the market and the necessary knowledge on the technology's application in the business. The authors pointed out technical factors including e-commerce benefits, information system inputs, perceived benefits, risk, technology readiness, relative advantage, task diversity, e-commerce barriers, technological competencies, costs, security, perceived ease of use, perceived utility, compatibility, testability, complexity, observability, and technology integration.

Following the identified elements, numerous research has indicated that the most significant factors that explain technical perspective are the DOI's Attributes of Innovation's DOI theory brought forward by Rogers (2003). They point out that technical aspects involve relative advantage, trialability, observability, complexity, and compatibility as the theory gives more insight into the technical aspects influencing technology adoption (Oliveira et al., 2011).

Consequently, the factors have been discussed extensively to point out their effect on acceptance of ICT among SMEs. However, the outcomes from the studies are inconsistent for a similar element. For instance, Limthongchai and Speece (2013) looked at e-commerce diffusion in Thailand based on innovation traits of DOI and introduced security as an extra construct. According to their studies, all the DOI characteristics were significant apart from trial ability, while guard slightly influenced adoption of e-commerce by SMEs.

Moreover, Alam et al. (2008) applied the same framework Limthongchai and Speece (2013) used in evaluating e-commerce usage among the industrial firms in Malaysia and found out that the DOI factors were important in influencing e-commerce adoption. Also, more studies have identified diverse technical factors like technical merits (Teo et al., 2009; Xu et al., 2017; Scupola, 2009), challenges to e-commerce (Alamoro and Tarawneh, 2011; Al-Somali et al., 2011), diversity

of tasks (Awa et al., 2017), perceived ease of use and benefits (Hashmi et al., 2017). The table below summarizes the factors concerning the literature.

Technological factors	Source
Relative Advantage	Scupola (2009); Hashmi et al., 2017
Ease of Use	Hashmi et al., 2017
Observability	Hussein (2019)
Perceived Usefulness	Luo and Remus (2006)
Compatibility	Hung et al. (2011)
Trialability	Ramdani and Kawalek (2009); Limthongchai and Speece (2013);
Complexity	Awa et al. (2017); Hussein and Noor (2015)
Technology Readiness	Al-Somali et al. (2011)
Task Variety	Awa et al. (2017)
Barriers to E-Commerce	Alamro and Tarawneh (2011)
Technological Compliance	Al-Somali et al. (2011)

Table 2.5: Summary of Technological Factors with Respective Literature Sources.

2.3.12 Organizational Factors

Numerous have pointed out the significance of evaluating organizational factors to ensure a firm successfully adopts new technologies (Kurnia et al., 2009). They imply the organizations' characteristics concerning adopting new technologies (Lippert and Govindarajulu, 2014).

The literature reviewed indicates that the aspects related to the organization include cost, company capacity, IT readiness and availability, organizational culture, type of business,

organizational IT competencies, strategic orientation, marketing capabilities, financial resources, Employees' knowledge and skills, firm's objectives, centralization, and formalization.

Among the factors, most studies point out the firm size as the main factor influencing SMEs adoption of ICT and e-commerce (Jeyaraj et al., 2006; Ramadani and Kawalek, 2009). In addition, the employees' IT knowledge is another significant determiner as cited by most literature. For instance, Xu et al. (2017) put down that Employee's IT understanding implies the overall technical proficiency among all associates of an organization which is attributed to the companies' technical expertise. Employees' IT knowledge plays a crucial part in predicting SMEs' decisions to incorporate e-commerce (Huy et al., 2012).

Besides, the cost is also identified as a vital determiner to technology and e-commerce adoption among SMEs. Various literature uses diverse terms to refer to the cost factors, such as financial obstacles (Ghobakhloo et al., 2011), financial returns (Abou-Shouk et al., 2012), and financial resources (Alamro and Tarawneh, 2011).

However, variability of aspects emerged within the institutional framework. For instance, Sparling et al. (2014) suggested that the institutional elements involve technological readiness, company capacity, and technological opportunism. According to Huy et al. (2012), the elements that make up organizational context include global organizational orientation, organization size, organizational readiness, strategic organization orientation, and employee's e-commerce competence. Also, Ramdani et al. (2009) pointed out the organizational factors like firm size, IT experience, organization readiness, and top management support.

In addition, Xu et al. (2017) suggested TOE as a theoretical framework to study the extent at which SMEs adopted e-commerce adoption in Europe and saw that institutional elements included firm scope and company capacity. Ifinedo (2011) also applied TOE to study how SMEs in Canada adopted e-commerce and offered suggestions on various elements within the organizational context, including perceived benefits, managerial IT competence, and management

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support. Moreover, hung et al. (2011) pointed out that institutional aspects include centralization, formalization, perception of superiority, and corporate size. Table 3.2 summarizes the administrative aspects of the respective literature.

Organizational Factors	Sources
Cost	Idisemi et al. (2011)
Firm Scope	Huy et al. (2012)
IT Readiness and Availability	Huy et al. (2012), Xu et al. (2017)
Marketing strengths	Abou-Shouk et al. (2012)
Firm Size	Ramdani et al. (2009)
Organizational Culture	Hussein et al. (2019)
Employees' IT Knowledge	Hwang et al., (2016), Heng and Hou (2012)
Business sector	Hung et al. (2011)
Operations centralization	Hung et al. (2011)
Business formalization.	Al-Hujran et al. (2018)
Financial Resources	Musawa and Wahab (2012)
Organizational IT compliance	Ifinedo (2011)
Strategic positioning	(Hussein et al., 2019)

Table 2.6: Summary of Organizational Factors with Respective Literature Sources.

2.3.13 Managerial Factors

Managerial factors are also another category of aspects impacting the technology adoption in SMEs. The administrative aspects are attributed to a section of staff in the organization who impact the decision concerning e-commerce adoption in the firm. The aspects revolve around, CEO's features, strategic management, top level support, the attitude of the manager, manager's

experience, manager's IT competence, the CEO's innovation and commitment to IT growth, barriers to management, strategic orientation, risk response, manager's attitude to transition, incentive to use e-commerce, distance from power, and control over uncertainty.

The reviewed literature points out that managerial features as central factor towards e-commerce adoption. Rogers (2003) emphasizes that the organization's decision towards innovation adoption depends heavily on the knowledge concerning the innovation. Most studies found that the IT capacity of a manager were significant in the e-commerce adoption by SMEs (Al-Somali, 2011; Heung, 2003; Hao et al., 2010). Raymond (2001) and Ramdani and Kawalek (2009) pointed at the manager's experience as a significant factor, while Ghobakhloo et al. (2011) and Almoawi (2011) uncovered the CEO's creativeness and manager's IT knowledge as a critical determiner to e-commerce adoption.

Studies indicate an important relationship between senior management’s assistance and the adoption of technology. The integration of innovation or technology into the business processes needs the top management's intervention. Otherwise, poor management hurts the adoption of technology (Al-Somali and Clegg, 2011). A lot of evidence points out the significance of top management in e-commerce operations (Ifinedo, 2011; Al-Somali, 2011; Al-Hujran et al., 2018; Hao et al., 2010). The CEO's commitment to implementation is also a significant contributor to e-commerce adoption (Hussin & Noor, 2005).

Also, studies have pointed out at characteristics of managers as among the obstacles to SMEs use of e-commerce in their operations, such as Zhu et al. (2006), who found its inhibition to the company's process of adopting technology into the SMEs operations. The characteristics identified to harm e-commerce adoption included risk management and uncertainty avoidance (Chen and McQueen, 2008; Hussein, 2009).

According to Rogers (2003), a considerable relationship exists between the innovation-decision process and e-commerce adoption, especially when the management's attitude is positive

or negative towards adopting or doing away with the innovation. It points out how impactful the manager's decision is to technology or e-commerce adoption. Apart from his study, several kinds of literature show the impact of the manager's attitude in the decision-making process concerning e-commerce adoption in SMEs (Hussein et al., 2019; Seyal & Rahman., 2003; and To & Ngai., 2007). The table below summarizes the relevant literature pointing out managerial factors influencing the use of technology in business activities.

Managerial Factors	**Sources**
Manager's Attitude toward IT Adoption	(Hussein et al., 2019);
Top Management Support	Alamro and Tarawneh (2011); Bfinedo (2011)
Strategic Orientation	Al-Somali et al. (2011); H
Uncertainty Avoidance	Alnoor and Arif (2011); Bao and Sun; (2010)
CEO's Innovativeness	Almoawi (2011)
Motivation to Use E-Commerce	(Hussein et al., 2019).
Strategic Orientation	Huy et al. (2012);
Manager's IT Knowledge	Ghobakhloo et al. (2011)
Response to Risk	(Hussein et al., 2019).
CEO Commitment to IT	(Hussein et al., 2019).
CEO's Characteristics	Al-Hujran et al. (2018)
Managerial Obstacles	Al-Hujran et al. (2018)
Power Distance	Al-Hujran et al. (2018)

Table 2.7: Summary of Managerial Factors with Respective Literature sources.

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2.3.14 Environmental Factors

Evidence also points out the role of environmental factors in technology adoption in SMEs. Environmental factors revolve around the organization's atmosphere, which can either inhibit or support the e-commerce adoption process. Among the factors include competitiveness, competition strength, pressure from partner or business, laws and regulations, consumer pressure, government support, government regulations, information intensity, IT infrastructures external force, IS provider support and force, environmental uncertainties, regular environment, national preparations, government policies, market size, consumer power, and market reach.

According to Scupola (2009), consumer force is the most important environmental aspect influencing e-commerce. Several studies also point out its significance in e-commerce adoption (Molla and Licker, 2005; Ifinedo, 2011; Al-Qirim, 2006). Plana et al. (2014) indicated that among the medium-sized enterprises that adopted e-commerce, more than 30% of them were influenced by supplier pressure. Apart from customer pressure, other factors affect the firms' decision towards e-commerce adoption, including policy, regulations, government support, legal aspects, and government policy.

Another environmental aspect impacting electronic commerce adoption by SMEs involves the role of the market. Significant market changes, as well as market scope, are the aspect making up the market factor. Zhu et al. (2003) argues market reach as the horizontal extent of the firms' operation, implying that e-commerce provides the firm with opportunities for expanding business operations in the worldwide market. According to Ramdani and Kawalek (2009), SMEs with open opportunities in the worldwide market tend to consider making decisions towards e-commerce adoption. Also, McFarlane et al. (2003, pointed out market scope as a more significant determinant for e-commerce adoption.

Many studies also asserted the significance of competitive pressure as one of the factors to technology adoption. As Chanvarasuth (2010, p.745) presents, the openness in a firm plays a vital

function in impacting them to embrace e-commerce. Most of the research indicates competitive force as an external predictor in organizations' decision towards e-commerce adoption (Alamro and Tarawneh,2011; Ghobakhloo et al.,2011; Ramdani & Kawalek, 2009; Abou-Shouk et al., 2012; Hung et al., 2011). Table 3.4 shows the summary of identified environmental factors with respective literature.

Environmental sources	**Sources**
Partner or Business Pressure	Ghobakhloo et al. (2011)
Competitive Pressure	Alamro and Tarawneh (2011); Hung et al. (2011); Abou-Shouk et al. (2012); Huy et al. (2012)
IT Infrastructure	Kollmann et al. (2009)
Environmental Uncertainty	Raymond (2001)
IT Vendor Support and Pressure	Ghobakhloo et al. (2011).
Information Intensity	Almoawi (2011)
Regularly Environment	Al-Somali et al. (2011)
Customer Pressure	Abou-Shouk et al. (2012)

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Competition Intensity	Almoawi (2011); Al-Hujran et al. (2018)
Government Policy	Hung et al. (2011)
Market Scope	AbouShouk et al. (2012)
External Pressure	Abou-Shouk et al. (2012)
Government Support	Al-Zubi (2012)
Legal Regulation	Hung et al. (2011 Gangwar et al. (2015)
National Readiness	Al-Hujran et al. (2018)

Table 2.8: Summary of Environmental Factors with Respective Literature Sources.

2.3.2 The Interaction of Factors and the Extent of E-commerce Adoption

Several studies have recognized the interaction of different aspects in e-commerce adoption. Tarafdar and Vaidya (2004) argued that technical and non-technical factors prevented faster adoption of e-commerce more so in the third world nations. It points out that, even though internet usage is increasingly penetrating developing countries, other non-technical aspects tend to overbear the countries' abilities to adopt e-commerce. For instance, the non-technical elements found to inhibit e-commerce adoption in Botswana included organizational internet marketing and

consumer aspects, as the organization plays a crucial function in influencing e-commerce adoption (Uzoka and Seleka, 2007).

Organizational factors have significantly affected e-commerce adoption and are closely correlated to culture, structure, policies, and politics. For example, the tendency of a firm to adopt e-commerce depend on social and cultural aspects (Fife, & Pereira, 2002). There is also an important link between management values and company culture. It is due to the fact; most activities in the business are based on culture and most organizations (Kanugo, 2006).

2.4 GROWTH MODEL: Development of E-commerce in Organizations

2.4.1 Stages of Growth Models

The e-commerce growth models provide comprehensive knowledge on the different processes used in improve e-commerce development. Multiple models have been put forward describing the phases that SMEs go through when implementing e-commerce in their business activities. The e-commerce stages are one of the common approaches used in explaining how SMEs evolve and develop in terms of technologies' adoption Mendo and Fitzgerald (2005).

Mendo and Fitzgerald (2005) also mentioned that the adoption of e-commerce among businesses goes through a set of stages, referred to as "level of growth models" or "adoption ladders." A couple of researchers, including Martin (2005) and Xu et al. (2007), put it that organizations transition through these levels, from essential of internet use as an email or marketing platform to more complex tasks with various business activities. Often, the theory has been applicable in examining how organizations adapt and progress within technology implementation in business operations. The DOI comprises conceptual models that describe the phases involved in developing e-commerce systems (Daniel, 2002; Teo and Pian, 2004).

Moreover, several pieces of literature seek to describe the increasingly sophisticated levels in which SMEs transition concerning their utilization of different technologies (Daniel et al. 2002;

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Mendo & Fitzgerald, 2005; Teo and Pian 2004a). For instance, Cockburn and Wilson (1996) form part of the first individuals to mention in their studies that organizations adopt technology in their firms' operations through a cycle of phases. The phases include the use of simple websites to complete adoption of e-commerce with transactions. In the same case, Burgess and Copper (1998) classified the process of the adoption into three phases ranging from product and service promotion to complete processing.

1. **Promotion** involves the provision of fundamental data concerning crucial components of the business including commodities and services, via the internet.
2. **Provision** incorporates emails for communicating with the business and making online inquiries.
3. **Processing** involves a wide range of commercial processes, including sales, payments, and order placement.

Since 2000, more recent models have emerged, pointing out a more insightful classification of the concept into six phases of e-commerce. Earl (2000) constructed a six-level model. The stages range from the first level, external communication, to the sixth transformation phase.

1. **External communication** is the stage in which the company emphasizes internet communication. It realizes the internet is a probable communication avenue with business stakeholders like customers, investigators, and providers.
2. **Internal communication** involves websites development, in which IT professionals manage the department.
3. **E-commerce** involves online business processes such as purchasing and selling.
4. **E-business**. At this phase, the business undergoes untested business models requiring deep insight and problem solutions such as late deliveries and order tracking issues.

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5. **Enterprise.** The enterprise can do away with inefficient and ineffective processes and obstruct the adoption of innovative business models.
6. **Transformation** involves integrating new business and management solutions, which are cornerstones to the full e-commerce adoption.

Daniel et al. (2002) categorized e-commerce adoption into four stages of intranet growth: from development to transaction.

1. **Development** entails email communication with consumers and suppliers, providing data concerning the firm, its commodities, and acting as the foundation for operating e-commerce.
2. **The communication** phase uses a wider range of designed electronic documents and emails to communicate with consumers and providers.
3. **Web Presence** incorporates making and receiving electronic orders.
4. **The transaction** encompasses all the processes of generating payment receipts, order placements, and online delivery of products.

The model considers email to be the first step of adopting e-commerce since it is the most basic and convenient way to adopt e-commerce. The first three phases go hand in hand with Burgess and Cooper's model (1998).

According to Teo and Pian (2004), e-commerce adoption falls under five stages, which run from the use of email to complete business transformation. Studies also show a parallel development of growth models looking forward to specifying the adoption stages that their enterprises have gone through (Mendo & Fitzgerald, 2005; Wixom and Todd, 2005; Kartiwi 2006; Teo and Pian, 2004).

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The studies also classify e-commerce adoption phases based on form of connectivity such as web access, diversity of internet users, and network technology. For instance, Parish et al. (2002) indicated that e-commerce adoption involves developing online marketing, online order placement, and online payments before transitioning to online sales services.

One of the most e-commerce adoption development stages models include the one proposed by Rao et al. (2003) and is still utilized in various researches (Saridakis et al., 2018). The model is classified into four phases: presence, portals, transactions integration, and enterprise integration in that order. Even though the stages look sequential, a company can start and transfer towards the later stage. However, evidence points out that most organizations usually kick off their adoption at the present step by portraying their firm brochures and commodity offers on the website (Timmers, 2001). The company provides information on its commodities and services, contacts, and other applicable data, basically through a one-way communication to any potential customer. The presence is geared towards attracting new customers; hence there is little integration with external or internal processes.

Organizations start introducing two-way communications at the portals stage. What differentiates the portal phase, the present, and the portals stage is two-way communication between the organization and consumer or business and business. Also, away from the current scene, the portal phase facilitates ordering, feedback, and the item or quality surveys. The extra features play an essential role in engaging, retaining, and relating potential customers to their personal preferences hence facilitating customization (Le & Koh, 2002). Moreover, the features also help the company link the information displayed to the inventory data and searching capability hence benefiting the web visitors.

In addition, the transaction integration phase involves the financial transaction between buyers and sellers. The step comprises a field where the participants can participate in the virtual communities, allowing them to share information that supports their mutual interest (Le & Koh,

2002). The organization provides products and services to the customers via a website that follows a defined process for pricing, order fulfillment, and third-party e-businesses. The third-party providers can promote the products of the company as well as or provide order making and payment infrastructures through a safe environment to the customers (Rao et al., 2003).

The enterprise integration stage is closely related to the transaction integration phase. However, enterprise integration incorporates the integration of processes, as the traditional and online businesses are nearly identical. It involves a highly collaborative environment between consumers and suppliers. Enterprise integration encompasses the general integration of B2B and B2C businesses, which also includes value chain integration. It uses e-commerce systems in managing customer relationships (CRM) and supply chain (SCM). Enterprise integration links the three significant components of full adoption; E-commerce, CRM, and SCM). It almost fits the ideal concept of an 'e-world' environment (Rao et al., 2003)

Concerning adoption, operational efficiency and effectiveness is projected to improve as the organization progresses through the stages, from the primary online presence to enterprise integration. The improvement is attributed to various factors, including increased customer engagement, satisfaction, and expansion of market opportunities.

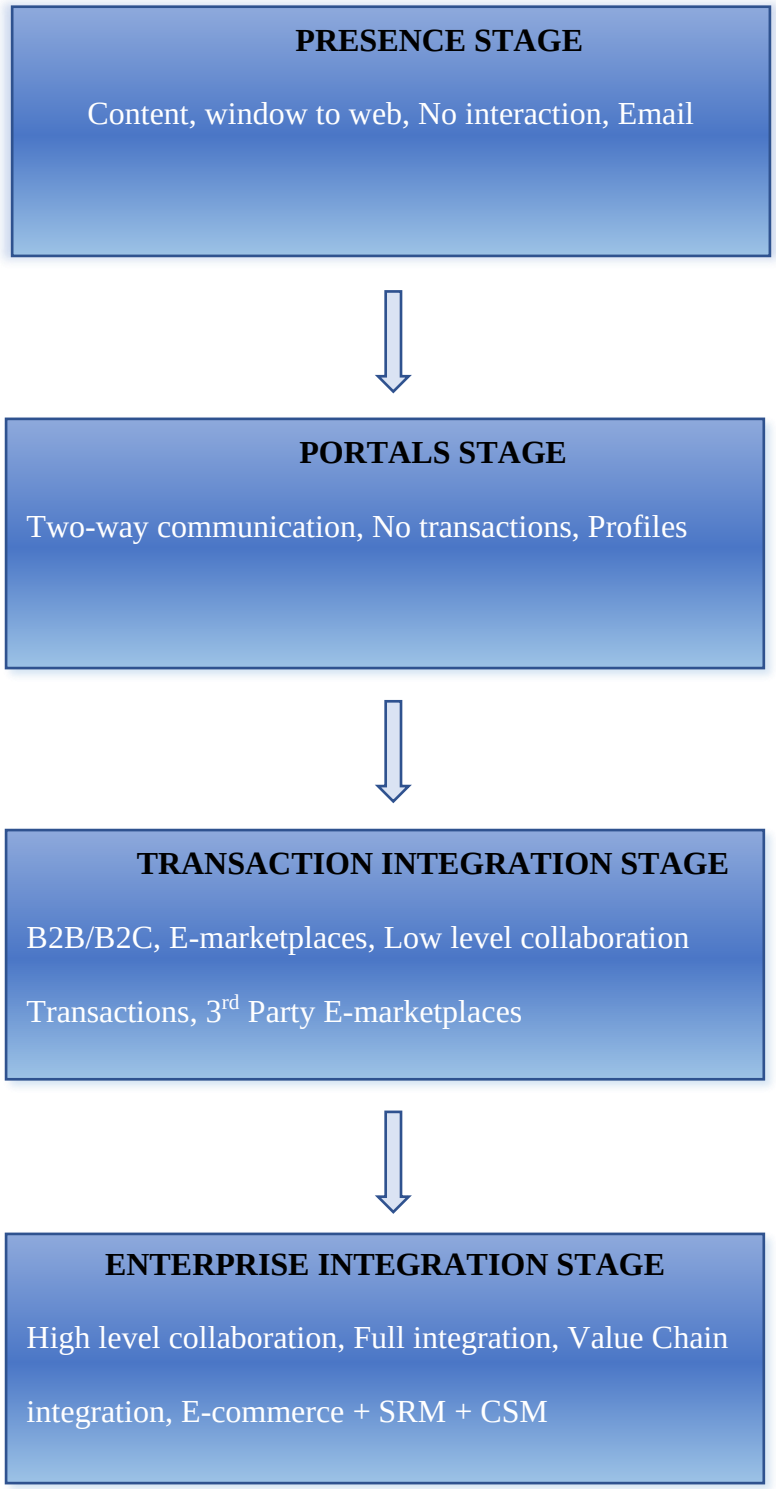


Figure 2.1.5: Stages of E-commerce development

When businesses adopt e-commerce, then there is enhanced business performance as it goes through the stages, from the primary online presence to enterprise integration. The improvement is attributed to various factors, including increased customer engagement, satisfaction, and expansion of market opportunities.

2.4.2 Website Adoption and Functionality

Internet penetrating is increasingly becoming popular around the world. For instance, the Internet World Stats (2021) estimated that there were more than 5.1 billion internet users globally by 2021, and the figures will keep increasing. It also estimated the internet users in Middle Eastern countries to be 198 million, which makes up 74% of the total population. Enterprises are therefore taking advantage of these internet usages to attract and manage customers through their websites.

Most companies have created their wireless application sites, allowing the consumers to extract data and access services through their devices, such as smartphones (Hung et al., 2003). Mobile service suppliers look towards using these mobile services to provide real-time services and boost business operations, enabling them to achieve a competitive advantage. Website functionality is essentially how the web page works, involving every aspect from actions a user can perform to the dynamic content and interactivity.

Usually, the website interface varies among various devices like mobile phones, tablets, and computers. For instance, mobile sites have limitations, including smaller interfaces and lower resolution concerning the restrictions in mobile terminals. Moreover, mobile users are often moving, hence finding themselves distracted and losing focus on the mobile sites. Therefore, the task mobile service suppliers have is to enhance the interface design to ensure that users have high-quality sites.

With respect to the information systems success theory, the efficacy of the system, information, and services are the important aspects for successful system implementation (DeLone

& McLean, 2003). The information system success theory has gained considerable focus on e-commerce (Gable et al., 2008; Cheung and Lee, 2009; Kim et al., 2010). The features facilitate the accessibility and usability of the website. The reluctance of the service providers in offering these essential features significantly affects the effective adoption of web technologies into business operations.

Besides the theory on information systems success, the TAM and trust theory are frequently employed in explaining users' adoption of technology. As per TAM, the belief of the size that impacts the adoption of the user information technology includes ease of perceived use and perceived utility. Its effect has pushed us to look at the determinant of such ideas (Benbasat and Barki, 2007). The quality of the system, data, and services significantly affect the user's perception of the websites, the ease of use and adoption usefulness. Moreover, e-commerce is related to significant uncertainties and risks due to its virtuality and anonymity; hence service providers need to build trust among the users by alleviating the perceived threat. They will concentrate on enhancing the system's quality, data, and services to facilitate the adoption and usage of the websites.

According to Kim et al. (2010), system quality determines the ease of use, while data quality determines the perceived utility. They also point out to trust as crucial factor in adoption of e-commerce. However, to achieve the most effective adoption, the websites need to reflect the three constituents: system, information, and service qualities. As pointed out by Shin et al. 2010, service diversities, access qualities, price rationalities, and intended use significantly impact the post-adoption mobile internet via perceived utility. Among the trust issues involved, particularly mobile sites, include the vulnerability to attack and information interception. There are various web designing features contributing to the discerned utility, practicality, and trust, including:

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Logical Roadmap

According to Wong et al. (2021), the website's logical planning improves its authenticity and usefulness based on how the developer has mapped out its work. The logical arrangement of information of the website promotes the user experience and enhances the site SEO in Google ranking. Besides, the need to have straightforward navigation, guide the users on what to do or get to sections of the website with ease. It can also mean a call-to-action feature, showing the precise goals of the website.

Crucial Business Information

Important information is also a pivotal aspect to include in websites, ranging from basic things like a menu to directions. Concerning website information such as mission statements, the company needs to focus on providing precise and clear views, to improve the user's ease of utilization. It is anchored on the fact that users tend to have short attention spans; accurate statements can allow them to skim through quickly (Lei & Law, 2019). Few things on the website also improve the user's perceived usefulness. For instance, a retailing website may need essential items such as good pictures of the products.

Contact Information

Contact information is also crucial information, which in fact, is displayed in its section. The website should have basic contact details such as email address, phone number, or contact form, which is easily accessible and visible. It facilitates user interaction with the website and improves their perceived ease of use due to easy accessibility. Studies indicate that providing contact information promotes effective website adoption by users due to reduced frustrations in reaching out to the business Tandon et al., 2016).

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Security

Due to the perceived risk associated with websites, companies should consider reinforcing their websites with security features to alleviate customer attacks (Tandon et al., 2018). For instance, SSL certificates help encrypt the communications between the customers and the business involving sensitive information like credit card and social security numbers. The safety feature improves increases the customers' trust in the website.

Frequently Asked Questions (FAQ)

The development of the FAQ section is geared towards improving the perceived ease of website utilization. Some users may have questions concerning the website's functionality or content; hence it provides a platform for such users to get clear, concise answers to frequently asked questions. The questions are usually centered on details such as shipping information, company history, sizing, cancellation, or return policies (Wong et al., 2021).

2.4.3 Web 2.0 and SME E-commerce Adoption

The term “web 2.0” was popularized by Tim O'Reilly in his 2005 whitepaper (O'Reilly, 2005). He puts it that web 2.0 involves describing the set of traits seen in internet applications centered on user engagement as well as collective intelligence. The applications comprise vast network effects which the developers maximize to bring the best user experience. The web encompasses interactive applications which play a role in reducing obstacles to data and geographic connectivity. The applications range from social media, cloud-based computing, and features that enable users to access the sites from multiple devices such as laptops and mobile devices.

Web 2.0 differs from earlier web technologies based on the underlying architecture, facilitated by the widespread availability of high-speed internet, and it is defined by central

parameters namely: partnership, data-centric, and open-source structured data. Interaction of the three conceptual dimensions of web 2.0 with the web 1.0 features brings about the increased potential benefits of the web 2.0 technologies (Governor et al., 2009; O'Reilly, 2005). Figure 2.1.2 below illustrates the dimensions of the web technologies for the potential impacts on small businesses.

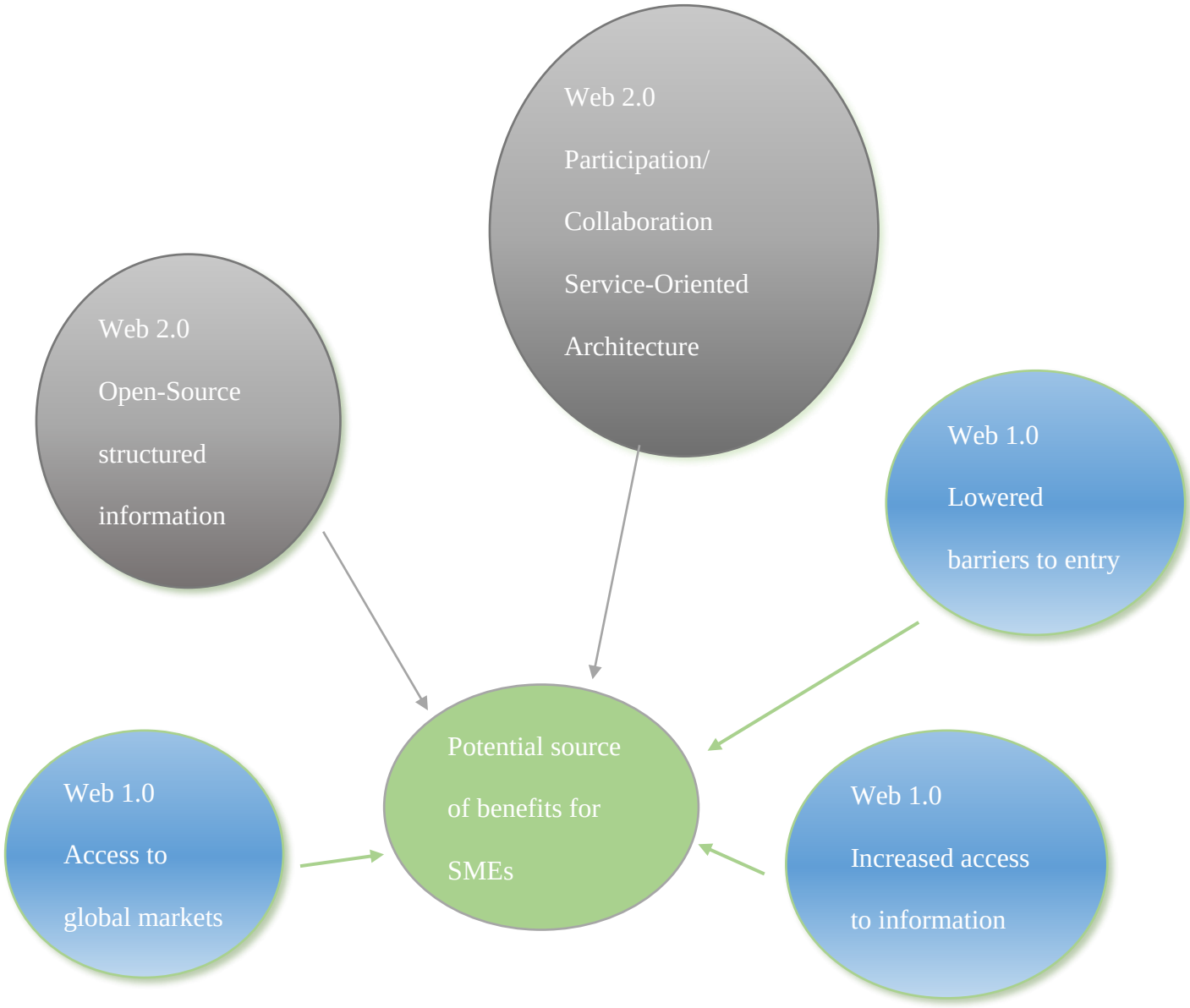


Figure 2.1.6: Characteristics of Web 2.0 that present potential opportunities for small businesses.

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Among the many benefits expected to come with use of web technologies include increasing access to information without extra investment, access to low-cost access global markets, and reduced obstacles to additional (Forster, 2000; Jones et al., 2003; Mehta & Shah, 2001). However, several studies indicate that these benefits failed to translate to the natural advantages of SMEs (Hashim, 2009; Jones, 2005; O'Reilly, 2005; Shuen, 2008). One of the reasons is that, even though web 1.0 technologies resulted in increased accessibility of information, reduced barriers to entry, and accessibility to global markets, it failed to minimize the necessity of economies of scale as a significant factor for competitive advantage.

For example, according to Behan (1998), the leading e-commerce websites are required to attract 200 users in order to gain one client. While the infrastructure to establish an e-commerce site was available readily available to SMEs and large enterprises, the resources for generating a significant number of visitors to the firm's website were not. Generation of traffic into web 1.0 primarily relied on traditional promotions and marketing channels, which implied more advantage to the large companies over the SMEs as they could leverage their resources and the existing large customer bases to exploit the opportunities. On the other hand, SMEs did not have the resources needed to attain high traffic in their websites to accrue positive cash flow promptly.

Studies, however, indicate that web 2.0 seeks to address the problems that SMEs face in Web 1.0 and capitalize on the benefits that the World Wide Web provides, which could not be attained in the web 1.0 timeframe (Anderson, 2006). Moreover, web 2.0 present many opportunities irrespective of the size and scale of the enterprise, that is, accessible to single individuals and a large corporation.

Web 2.0 is very important in the growth of e-commerce. By implementing web 2.0 technologies, businesses can collect, analyze, and synthesize extensive data relevant to users for strategic benefits. When organizations develop a comprehensive knowledge of user perceptions, they can tailor their web 2.0 efforts and successfully adopt and integrate them into their online

stores (Kosalge, 2015). For instance, Linda (2009) and Jonathan and Chrysta (2011) suggested that, for organizations to achieve a competitive advantage, they can:

- Develop a website that provides more accessible, less costly, and faster ways to reach consumers and establish a rich user experience.
- Create transparent prices
- Promote effective interaction and communication between consumers and organization as well as customers.

The businesses looking forward to e-commerce adoption should invest in web 2.0 technologies and integrate their functionality into websites, which is significant in improving the competitive advantages of organizations. Through engineering, relevant Web 2.0 tools can be determined and incorporated into the SMEs' websites about the intensity of commodities to promote client engagements and attain the company's competitive merit.

Web 2.0 technology enables customers to exchange, evaluate, and explore products and services in an interactive community setting (Zhou, 2015; Kucukcay & Benyoucef, 2014). Besides, customers can use the information for decision-making process. The organization can also use the information in promotion and decision making about the online marketplace. Moreover, e-commerce is transitioning to the semantic web, which supports customization and relevance drivers (Kiu et al., 2010) and significantly impacts the brand building and peripheral experiences. The integration of semantic web with web 2.0 technologies can have a significant impact on how customers share data and products. The combination of semantic web and web 2.0 technologies significantly impact sharing of data and products among the customers. Figure 4.3 shows how Jonathan et al. (2011) applied web 2.0 technology to semantic web-based e-commerce.

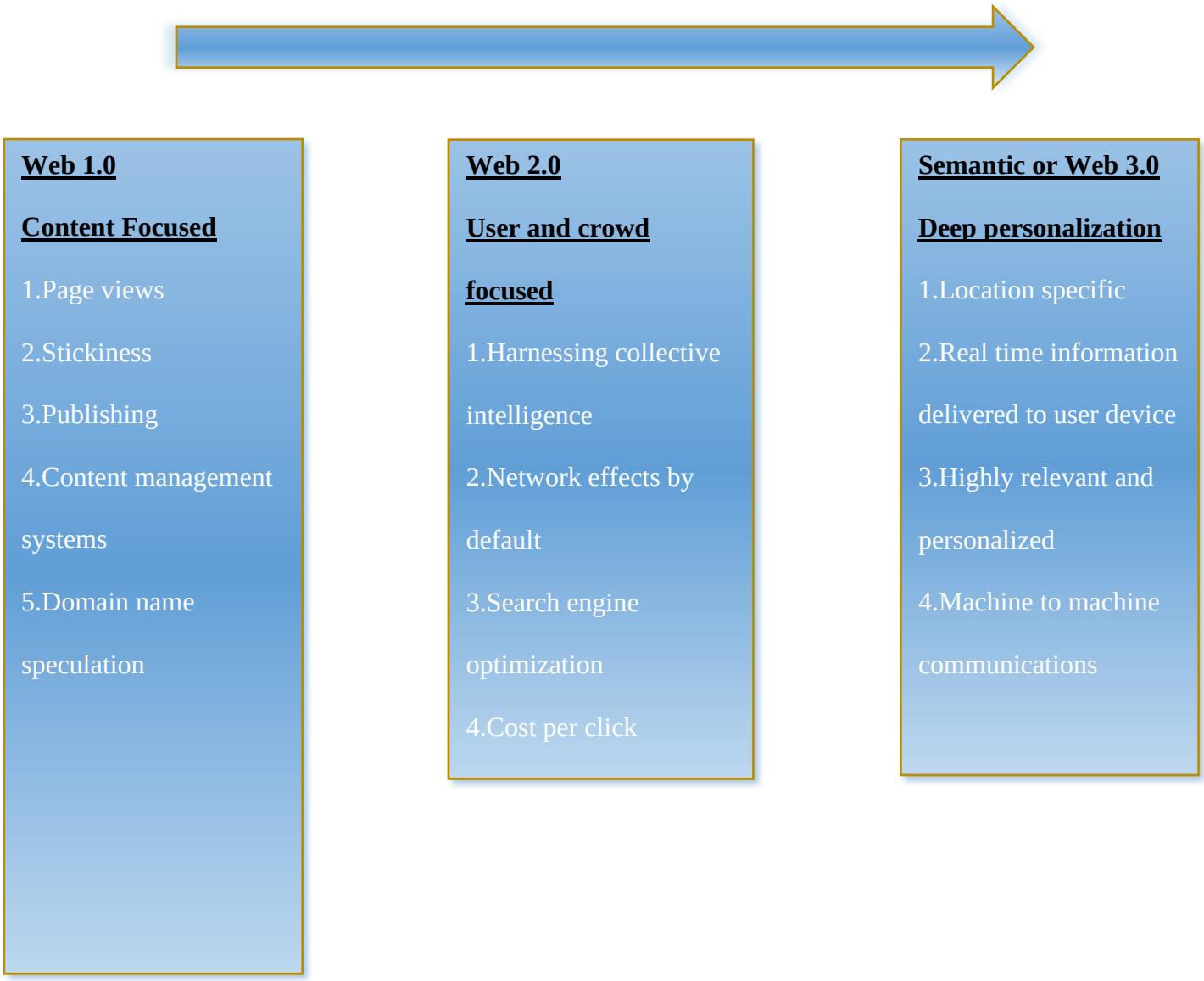


Figure 2.1.7: The Evolution of Web 1.0, Web 2.0, and Web 3.0

Information sharing web 2.0 enables multiple business activities in SMEs, such as the creation, storage, refinement, and sharing of information among web users as well as supporting social and active learning among participants. Collaboration 2.0 plays a crucial role in supporting and enhancing collaborative online works, which involve sophisticated interconnected and interactive business activities in problem-solving and decision-making processes. The interaction space falls

under three categories: business-to-employee-to employee, business-to-employee-to-consumer, and business-to-employee-to-business spaces (Haythornthwaite, 2005).

Business-to-employee-to employee space

This space revolves around the organization and its employees. It facilitates business operations by complementing existing e-commerce applications through the integration of multiple web 2.0 platforms. The platforms entail knowledge management activities, project management efforts, and social networks, which promote employees' connections (Cayzer, 2004; De Hertogh & Viaene, 2010; Wagner, 2004). It is a secured internet or intranet-based space focusing on networking, information sharing, and collaborations. Studies indicate that employee collaborations significantly impact productivity, such as enriching employees' support to consumers (Shimazu & Koike, 2007).

SMEs can use web tools to create and manage content and support employee interactions. For instance, internal blogs are employed in announcing organizational updates, as organizational wikis facilitate group works (Schwartz, 2005). The study on the innovative use of web 2.0 among customers and businesses may also be enabled in this space. The potential value of the business-to-employee-to-employee area may be realized in training, SCM, CRM, and research development (De Hertogh & Viaene, 2010). Moreover, the value creation achieved among SMEs may include employee loyalty, employee participation, and empowerment (Boughzala & Limayem, 2010).

Business-to-employee-to-consumer space

The space focused on business organizations, employees, and customers. It is an extension of business e-commerce to customer that enhances dynamic interaction between the business and its consumers through the web 2.0 platform. The organization initiates this space, allowing the employee to engage in dialogues with customers. By making it possible for consumers to utilize a

corporate blog, the image of the company improves, as it is seen as consumer-centered (Singh et al., 2008). The interactions involved in this space include: employee-customer, business-consumer, and business-to-employee-to-customer.

SMEs may look forward to investing in content creation and implantation of web tools, aimed at encouraging active customer interactions and involvement, such as keeping customers aware of the offerings. Both SMEs and large companies utilize videos and images to strengthen public relations and solicit customer opinions on commodities. Moreover, the consumers help in co-creation of goods and services. The benefits of the space may accrue through marketing, sales which is a significant business intelligence system (Huston & Sakkab, 2006).

Business-to-employee-to-business-space

The space involves commercial operations among enterprises, employees, and the business members like suppliers. It is basically an extension of business-to-business e-commerce. The application of web 2.0 assists in strengthening the relationship between business partners. For, the business may use web 2.0 in collaborating with consumers and business members to produce new design innovations (Brown, 2008). The secured space encourages customers to actively participate in the business activities as it is centered on data exchange and collaboration. For instance, SMEs may integrate their systems to enable inter-firm information exchange with business members. The SMEs may share experiences, challenges, and views concerning their commodities or services (Allee, 2003). Through employee engagement, the business may promote effective measures to challenges and opportunities that arise with business partner side. The SMEs may benefit from partnership relationship management, improved business intelligence, and creativeness (Boughzala and Limayem, 2010).

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2.4.4 Non-Adoption of E-commerce in SMEs

It has been shown in previous sections that the rate at which SMEs adopt e-commerce is relatively slow. The slow uptake of e-commerce by SMEs has been studied extensively, as the outcomes point out that SMEs encounter obstacles preventing them from engaging in effective IT usage in their businesses.

The reasons behind the SMEs not adopting e-commerce may fall under the internal and external barriers to business. According to Hadjimonolis (1999) research on e-commerce acceptance among SMEs in Cyprus, showed that the external obstacles could further be divided into supply-side and demand-side barriers, and environmental related barriers. Moreover, internal barriers were further categorized into resource barriers and system inhibitors, which revolve around management and technical expertise, as well as the technologies that do not suit with the existing business practices. Most SMEs could attribute their inability to adopt e-commerce to financial difficulties, unlike their large counterparts who have readily available capital.

Several Studies have indicated that there are two important obstacles to e-commerce adoption among the emerging countries, namely, lack of perceived security and lack of perceived utility of technology (Kapurubandara & Lawson, 2006; Saffu et al., 2008). The studies also indicate that where technology might be secure, other concerns also emerge in relation to credit card utilization within the probable consumer perspective. The non-adopters point out that, the misuse and restrictions on credit cards make e-commerce an insecure method to employ within SMEs (Purcell & Toland, 2004; Kartiwi, 2006).

Furthermore, studies indicate that SMEs, especially those found in the emerging nations are worried about the dwindling number of customers and suppliers to use e-commerce. Similarly, some of the managers or owners fail to get convinced that e-commerce is appropriate for their products. The incompatibility was centered on how the daily business operations are carried out

and how their suppliers and customers engage in business operations (Kapurubandara & Lawson, 2006; Purcell & Toland, 2004).

In addition, the non-adopters attribute their failure to incorporate e-commerce into their businesses to financial problems. For instance, studies on Ghana and South African's SMEs established that the costs that surround the establishment of web-based commerce within the enterprises were what restricted most of them from adopting e-commerce (Saffu et al., 2008; Cloete et al., 2002). Kapurubandara and Lawson (2006) also pointed out that many SMEs viewed e-commerce adoption as non-beneficial due to outdated legal and financial structures and that government participation to lower pricing structures lower the technologies' monetary benefits. Other studies in China and Russia indicated that the non-adoption of e-commerce by some SMEs was linked to the unreliable transport system during e-commerce implementation in which the additional cost greatly impacts the financial benefits (Cooray, 2003; Chepaitis, 2002).

Moreover, the e-commerce non-adopters encountered problems with skills. Studies in China and Russian SMEs indicated that the organizations had little technical knowledge to handle e-commerce operations, something that drives their motive away from investing in technology-based activities (Cooray, 2003; Chepaitis, 2002). While the studies indicate lack of technical skills as a hindrance to the adoption of e-commerce in developed nations, the problem is much worse in developing regions (MacGregor & Vrazalic, 2007).

2.5 THEORETICAL BACKGROUND: Theoretical Foundations in E-commerce Adoption Research

The section explores some of the prevalent theories used in information systems, particularly when individuals and organizations adopt technology in their operations. The theories attempt to dig into and develop comprehensive knowledge on the aspects that impact or hinder technology adoption by individuals and organizations. The common theories that are related to

technology diffusion and adoption are the Technology Acceptance Model (TAM), The Technology-Organization-Environment (TOE) Framework, The Perceived e-readiness Model (PERM), Diffusion of Innovation Theory (DOI), and The Resource-Based View Theory (RBV).

2.5.1 Technology Acceptance Model (TAM)

With the rapid escalation in the utilization of e-commerce and its influence on different kinds of businesses, researchers are constantly aiming to comprehend and predict customer behaviors online, particularly in web-based companies and organizations that are Net Enabled. For e-commerce-related predictions to be valid, research is often conducted through information systems (IS), which are notably helpful in indicating consumer behavior, specifically regarding the adoption of online shopping.

David (1989) established TAM and that was based on the Theory of Reasoned Action (TRA) (Fishbein and Azjen, 1975). The model is applicable in determining and predicting aspects affecting consumers to decide on technology adoptions. TAM has become the most cited and relied-on model for researching a new information technology acceptance and use by its targeted consumers (FEDORKO et al., 2018). The distinction between TRA and TAM is the additional factors, (perceived Usefulness) and (Perceived Ease of Use) in the TAM, with the exclusion of subjective norms as they are taken as insignificant in technology adoption.

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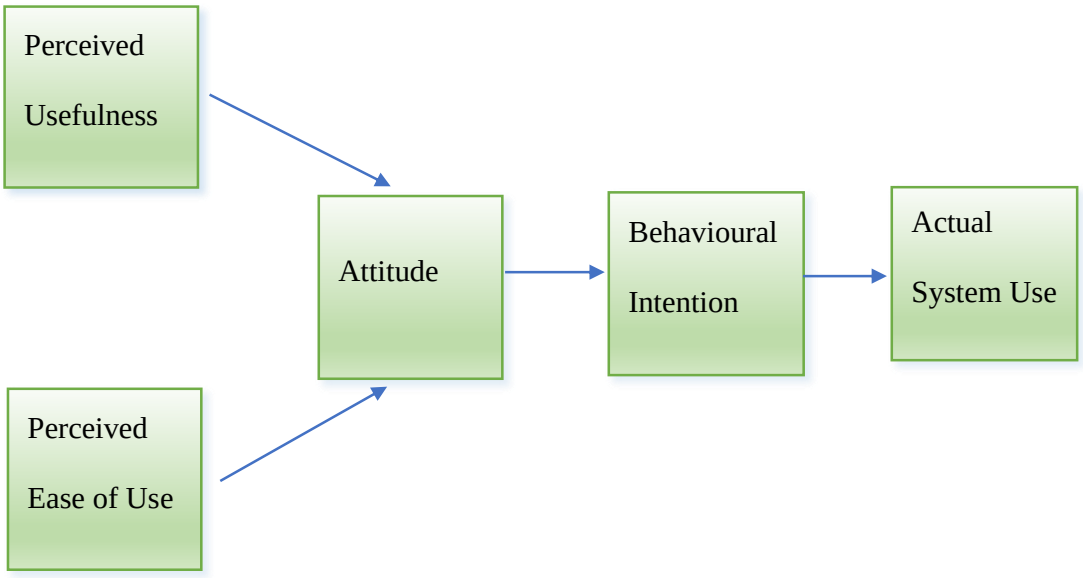


Figure 2.1.8: Technology Acceptance Model

With the continuous growth in demand for technology, many models have been referred to in order for decisions to be made regarding the implementation of new technology. However, being the only model that focuses primarily on information systems, TAM has become the most regularly employed model for technology acceptance research (Fayad & Paper, 2015).

TAM is based on the assumption that the individual's acceptance of technology relies on the behavioral intention towards using the technology. The behavior intention (BI) is a function of attitude towards technological usage as well as perceived utility. The attitude towards using technology (AT) is further dependent on the perceived usefulness (PU) and perceived ease of use (PEOU). According to Davis (1989), attitude is the summation of two principles that one has towards a particular technology. Perceived usefulness refers to the benefits consumers may gain from accepting new technology and whether the use of this particular new system would enhance their job performance. The perceived ease of use is an implication of whether a new technological advancement would be effort free or difficult to manipulate (Hoong et al., 2017).

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After careful evaluation of PU and PEOU, researchers can have a clearer perception of the Attitude (A) a consumer may develop towards the new technology in question. This attitude is helpful in determining the consumer's Behavioral Intention (BI) that fundamentally reflects the user's potential decision on whether the technology will be accepted or disregarded (Pei et al.2015). Therefore, consumers who develop a positive attitude towards a new technology system would therefore be more agreeable and willing to accept and use the system than those who develop a negative attitude. The PU and PEOU lead consumers to acquire a positive or negative attitude towards a new technology, which in turn leads to consumers developing a Behavioral Intent that determines their actual system use; the ultimate purpose for pursuing this research model (Pei et al, 2015). However, it has to be taken into consideration that Attitude is affected by other external variables such as social influence as well as the age and gender of the involved consumers, which may result in different outcomes due to distinctive perceptions correlated with these factors.

Davis (1989) studied the adoption of word processor technology based on the TAM framework. The study indicated that the perceived utility had an important impact on the individuals' intentions towards using the technology than the PEOU. He noted that an individual who realizes that using a particular technology will work towards increasing productivity and improved job performance, such a person is more likely to adopt it irrespective of the technology's ease or difficulty of use. However, it does not imply that perceived ease of use lacks relevance; it's just less significant but should not be overlooked as a structure affecting individual's opinions towards technology use.

The theory emphasizes more on the individuals with less emphasis on the role of social and environmental determinants influencing technology adoption. Some researchers have tried to expand by adding extra variables, emphasizing the role of the subjective norm, which has been named TAM2 (Venkatesh and Davis, 2000).

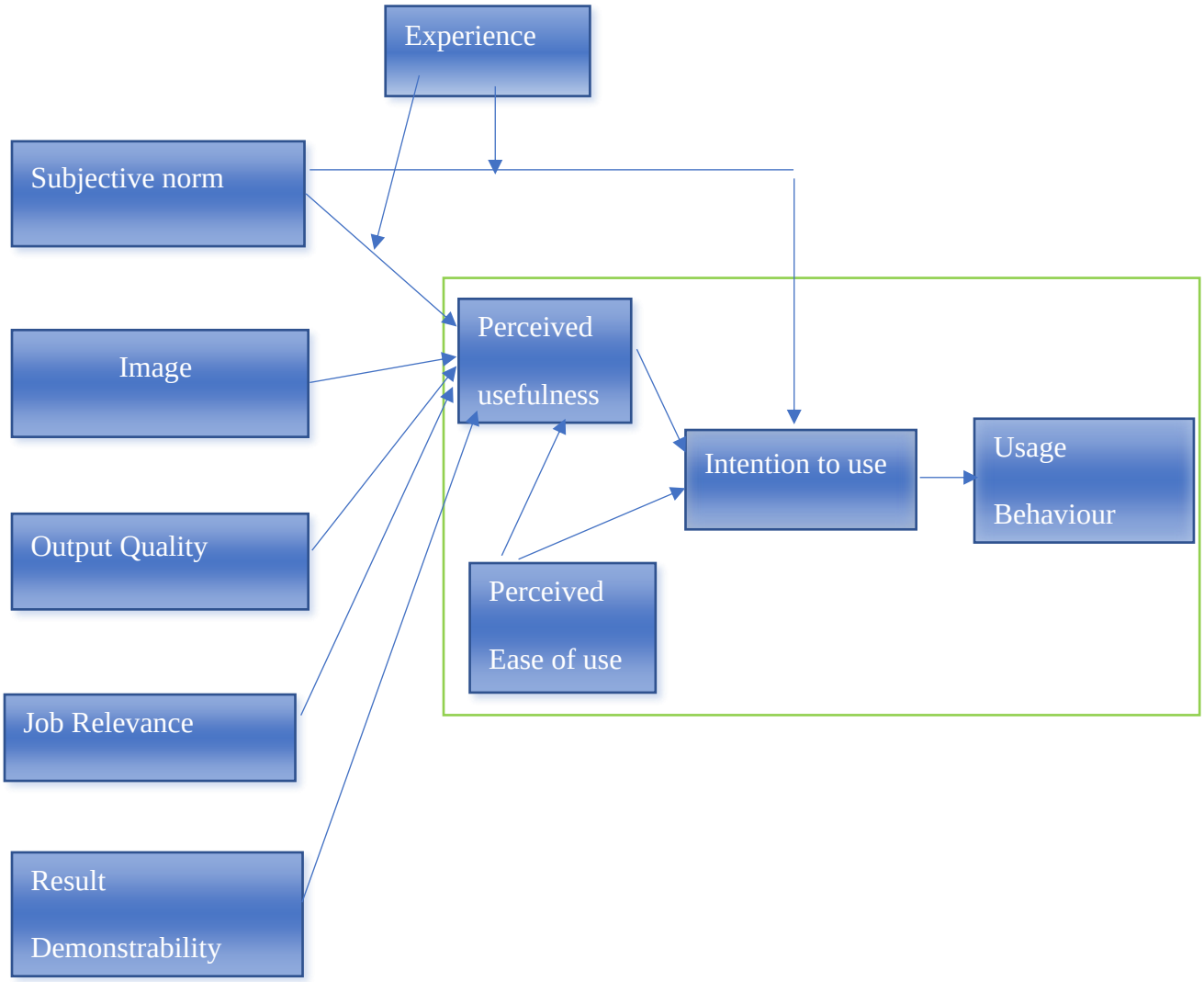


Figure 2.1.9: Technology Acceptance Model 2

The studies also showed that subjective norm results are an important positive effect on PU when applied in mandatory settings than voluntary settings. The expansion of TAM is, however, continuous. For instance, Venkatesh and Bala (2008) added antecedent variables to TAM2 and termed it TAM3.

In TAM3 the antecedent variables of PEOU were classified into two categories, namely, anchors and adjustment. The anchors comprise Computer Anxiety, Computer Playfulness, and Perception of External Control, which influence the degree of individuals' beliefs towards the use

of computers. The adjustment group comprises of perceived enjoyment, objective usability, reflecting on the user's belief on the degree of technology usability.

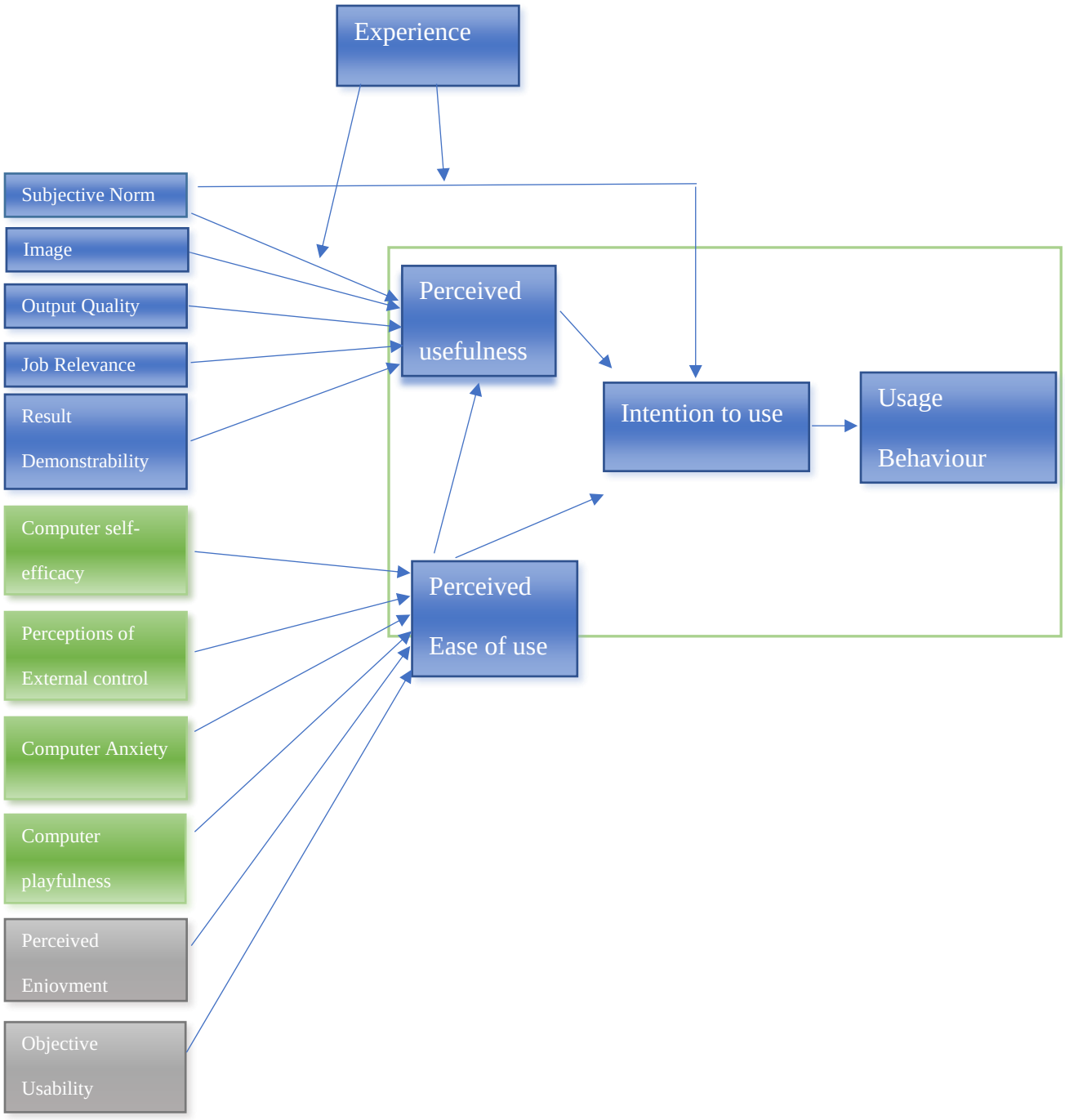


Figure 2.2: Technology Acceptance Model 3

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As indicated in the figure above, TAM2 contains extra antecedent variables to determine and explain PU which include social and cognitive instruments of influence. The social influence incorporates image, norms, and voluntaries. On the other hand, cognitive instrumental procedures include job relevance, output quality, and demonstrability. Venkatesh and Davis (2000) noted that TAM2 was valid and had strong support as it explained 60 percent of the variance. They also pointed out the reliability of social influence and cognitive instrumental processes.

Even though some studies have expanded TAM to TAM2 and TAM3, TAM is still valuable and among the highest broadly recognized models explaining a person's technology behavior due to various reasons. One of the reasons is that TAM was pointed out as a theory that it outperformed TRA and TPB in terms of predictive power and ability to explain individual acceptance and usage. Secondly, TAM features a more solid structure as well as a reliable measuring scale, allowing it to be used for a variety of technology adoption variables. (Yousafzai et al., 2010).

TAM has been utilized to explain users' intent to utilize technology in a variety of contexts, including online commerce (McKechnie et al, 2001), mobile banking (Munir et al., 2013), and personal computers (Munir et al., 2013). (Taylor & Todd, 1995). The theory has also been deployed in studying how small enterprises implement ICTs and e-commerce (Grandon and Pearson, 2004; McKechnie et al., 2006).

TAM does not explicitly imply e-commerce behavior, as TAM is more revealing about the adoption of new technology. However, researchers resort to TAM for the purpose of foreseeing consumer behavior online. With this prediction, researchers gain vital information about consumers' willingness to accept new data systems, which in turn assists in the proper design and implementation of these systems in a manner that would be most preferred by potential users (FEDORKO et al., 2018).

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2.5.11 TAM Limitations

TAM, however, has received lots of critics. One of the critics is about using self-reported information, which is a purely subjective criterion, hence may not accurately predict the actual usage of technology (Yousafzai et al., 2007). For instance, Keung et al. (2004) conducted research on SMEs to determine applicability of TAM in predicting the adoption of Web COBRA software. During the first phase, the enterprises indicated a high likelihood of adopting the software in their businesses. However, during the second phase, that is, after a year, the study revealed that the companies failed to use the software. It pointed out the fact that TAM was more inclined to predict the behavioral intention towards using the technology than the actual usage. It also indicated that TAM might pose diverse outcomes when evaluating past use, present use, and future plans of technology use.

TAM is also criticized for dependency on PU and PEOU constructs, for determining technological acceptance; hence may need additional variables to offer comprehensive knowledge on the case (Park et al., 2008). In addition, TAM is only helpful in studying technological adoption at the individual level than company level since it does not look at more descriptive factors such as organizational and environmental determinants.

2.5.12 Addressing the Limitations

Since TAM involve constraints in timing and frequency of data gathering, researchers can conduct longitudinal studies that include sampling at different times to compare and access consumers' behaviors. They will be able to get more realistic e-commerce usage statistics in this manner (Fletcher et al., 2014; Mohamed et al., 2014). In order to validate the link between the variables and obtain different desired options that show the desired perspectives, researchers must test their study in other locations, since it is among factors that limit TAM generalizability (Ahmed & Akhlaq, 2015; Hidayat-ur-Rehman et al., 2016).

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In addition, investigators should pay attention to the outcomes of technical acceptance to eliminate the existence of any bias (Butt et al., 2016). Wang et al. (2015) suggest expanding TAM by adding other aspects to enhance performance and explanation of other sources that affect buying behavior. Multiple variables can enhance TAM framework, which includes (a) customers' traits, (b) perceptions, (c) customers' perception, and (e) demographic elements such as sex and education level to gain insights into the comparative responses of online users (Lim, 2015; Mohamed et al., 2014)

Since this paper examines e-commerce adoption by SMEs in Jordan, the use of the TAM would be extremely beneficial in evaluating whether this adoption by SMEs that are attempting to make advancements and spread their business ideas in Jordan would prove advantageous or redundant. For SMEs that would be profited from this implementation, TAM would also aid in constructing designs and employment plans for their e-commerce reliant approaches. Ultimately, these carefully designed and established e-commerce strategies would ascertain the role of a small business in Jordan more vividly. It will result in the growth and diffusion of the services this business offers and eventually accomplish the aim of this study in regard to assessing the use of e-commerce and its impact on the economic circumstances of both SMEs and the country as a whole.

As discussed, TAM principally tackles two factors that would influence the tendency for new technology to be accepted. Since limited data is available concerning the utilization of e-commerce by SMEs in Jordan, a survey will be comprised and allocated to owners of those entities. The survey will contain entities that should reveal consumers' convictions on whether the proposed new technology would be perceived as useful and easy to use, which in turn results in consumers developing a positive attitude and subsequently a behavioral intent towards actual system use. As such, the Study Problem of this topic concentrates on discovering consumers' tendency of SMEs to accept the e-commerce integration based on the PU and the PEOU that will be revealed by the TAM.

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This literature has managed to highlight TAM's background details, how the model originated as well as TAM's significant contribution. TAM will play a major function in testing the customer's intents towards technology e-commerce adoption. PU and PEOU make up the main variables of TAM which will be helpful in testing the willingness of SMEs to adopt e-commerce. This section contained a variety of peer-reviewed publications that employed the TAM to investigate and evaluate consumer adoption of e-commerce. The primary aim of TAM in this study is providing fundamentals for investigating impacts of external forces (perceived ease of use and perceived usefulness) on user intention. The TAM limitation section contained many limitations, which have been resolved by providing solutions to address the model's weaknesses.

2.5.2 The Technology-Organization-Environment (TOE) Framework

The TOE model comprises of technological, organizational, and environmental contexts as shown in figure below (Tornatzky,& Fleischer, 1990).

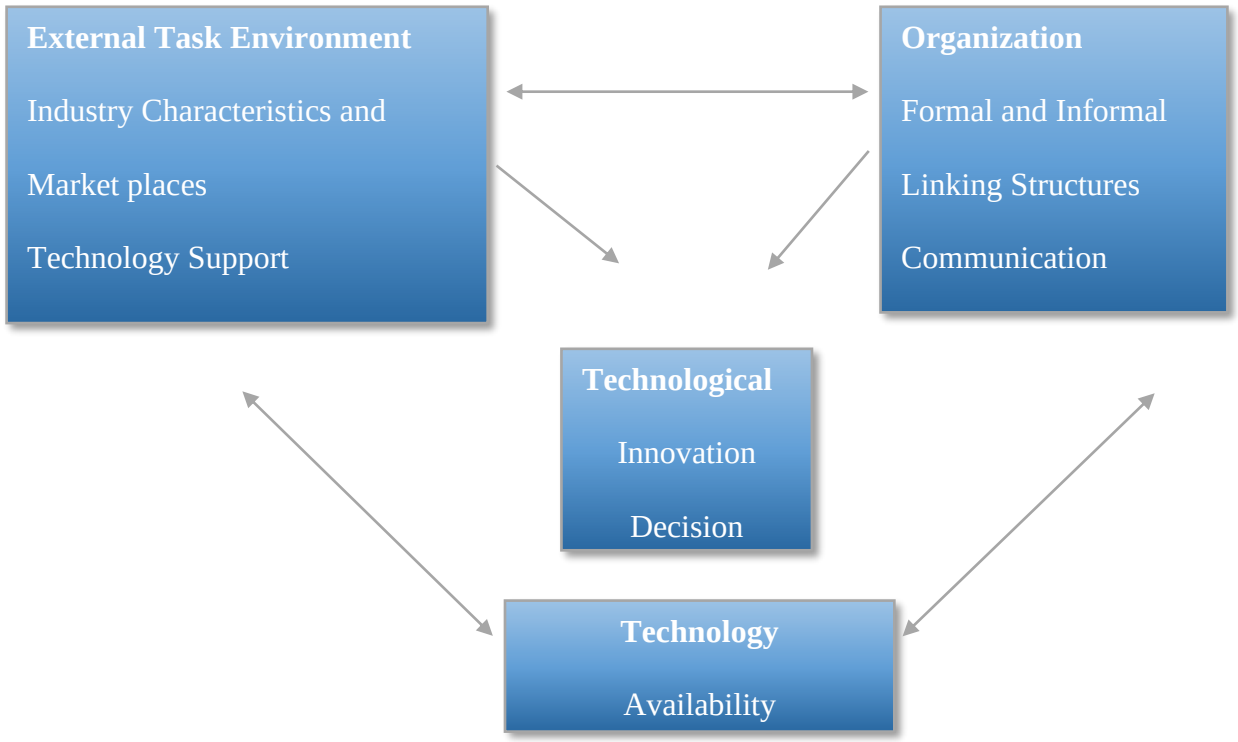


Figure 2.2.1: Technology-Organization-Environment Framework

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Technology is seen as a significant element for technological adoption in the enterprises based on either intent towards its use, present use, or previous use in the SMEs. It is essential for businesses to understand the metrics behind using the technology in business operations. According to Helfat (1997), technologies in businesses could be considered intangible resources and valueless when the organization lacks relevant knowledge on how to use them. The technological dimensions imply the availability of technology, which can be external or internal, by the organization. Various studies have been developed in this aspect. For instance, Zhu et al. (2002) and Salwani et al. (2009) uncovered three aspects with respect to technological context; knowledge on using the technology, IT employee expertise, and IT infrastructure technologies.

The organizational context involves the internal resources available to the organization for technology adoption, such as company size, scope, technical readiness, employee awareness, financial resources, and management system complexity. The environmental context describes the setting in which a company's commercial operations take place, including the market system, competition, technological support infrastructure, consumer pressure as well as government laws (Ghobakhloo et al., 2011).

The TOE model is taken as an outstanding theoretical basis that identifies the factors for adoption of e-commerce in SMEs (Bao and Sun, 2010). Therefore, TOE evaluation is under various elements of technological adoption. It has been studied, for example, based on the adoption of radio frequency identification (RFID) (Lee and Shim, 2007), ERP system (Pan and Jang, 2008), and knowledge management (Alatawi et al., 2013). Several studies point out that TOE is useful in looking at an organization's decisions to adopt technology, notably e-commerce adoption.

However, TOE possesses some downsides hence it could not be fully implemented into this study. The first one is that the model fails to provide deep insight into the managerial factors in cases where the business managers are regarded as the most crucial decision-makers in adopting technology (Hashim, 2007). Due to this, many researchers proposed expansion of the model by

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adding the managerial aspect as a fourth context (Thong, 1999; Sarkar, 2008; Bao and Sun, 2010). Otherwise, some studies were based on the managerial context as an aspect under organizational context, pointing out that successful e-commerce adoption in SMEs is critical to making decisions (Scupola, 2009; Alamro and Trawaneh, 2011).

Various models proposed in these studies acknowledged that managerial aspects such as managerial endorsement and the owner's IT competence have a key influence on technology adoption, especially in SMEs' adoption of e-commerce. Besides, other TOE's limitation is based on the fact that it requires more factors to provide a wider definition of technology acceptance. For instance, Iacovou et al. (1995) put forward a model based on TOE for studying factors influencing electronic information interchange adoption in organizations. The model is centered on three aspects; projected gains, organizational preparedness, and external pressure, as indicated in the diagram below.

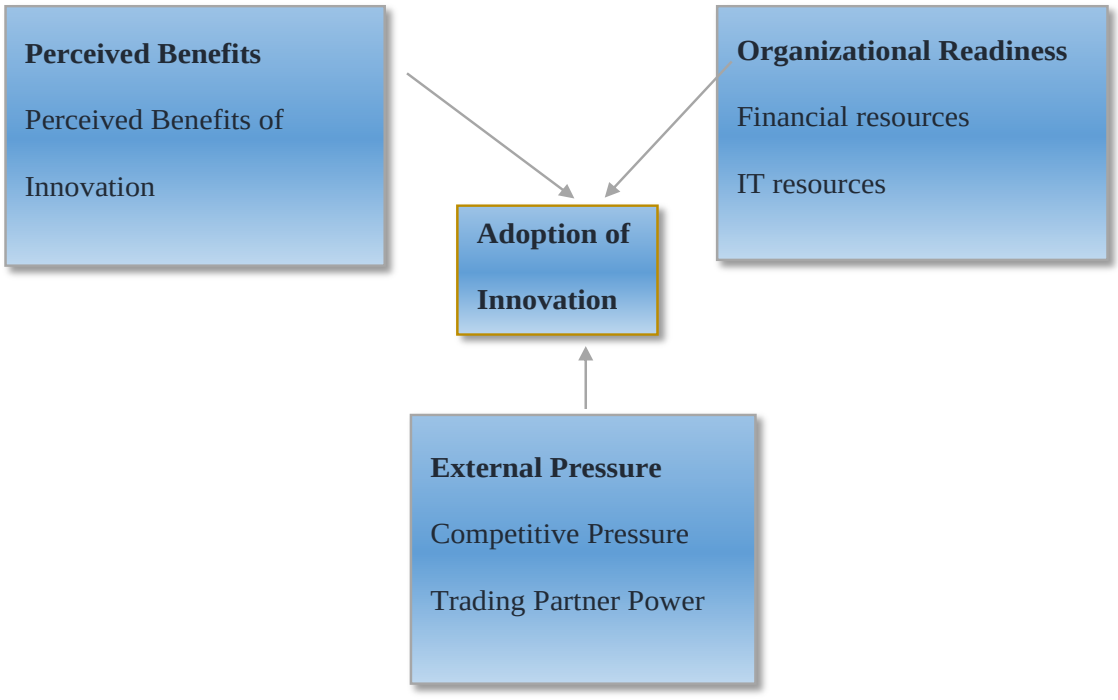


Figure 2.2.2: Iacovou et al. (1995) Model

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The Iacovou et al. model (1995) is a bit different from TOE. The organizational readiness context encompasses technological and organizational factors. Also, included in the external environment is the trade partner power construct, which is perceived to have an impact in technology adoption. Lastly, the Iacovou et al. model (1995) contains an additional perceived benefit as a new context explaining the potential technological gains implementation as perceived by organizations. TOE constructs emerge in this study during analysis in which technology and organizational structure tend to play a vital function adoption of e-commerce adoption among SMEs. As noted among various studies, it is also asserted that environmental factors such as competitive pressure are important to technology adoption. According to Chanvarasuth (2010, p.745), the openness in a firm and competitive pressure plays a vital function in Impacting them to adopt e-commerce. There is also an important link between management values and company culture and their impact on the intention towards e-commerce adoption. It is due to the fact, most activities in the business are based on culture and most organizations' culture may impose barriers to adoption of technology (Kanugo, 2006). For instance, the company's lack of technical knowledge and comprehension of e-commerce as the latest innovation hinders it from implementing a complete e-commerce framework in SMEs.

2.5.3 Diffusion Innovation Theory

The Diffusion Innovation Theory, also known as Rodgers' Model (1962), is among the popular innovation adoption theories. It was originally used to explain the adoption of technology in the discipline of rural sociology. However, it has been applied in various fields such as education, medicine, industry, and technology. Rodgers's model comprises four significant aspects related to the diffusion of the innovation process, that is, innovation, communication channels, time, and social structure, as illustrated in figure 2.2.3.

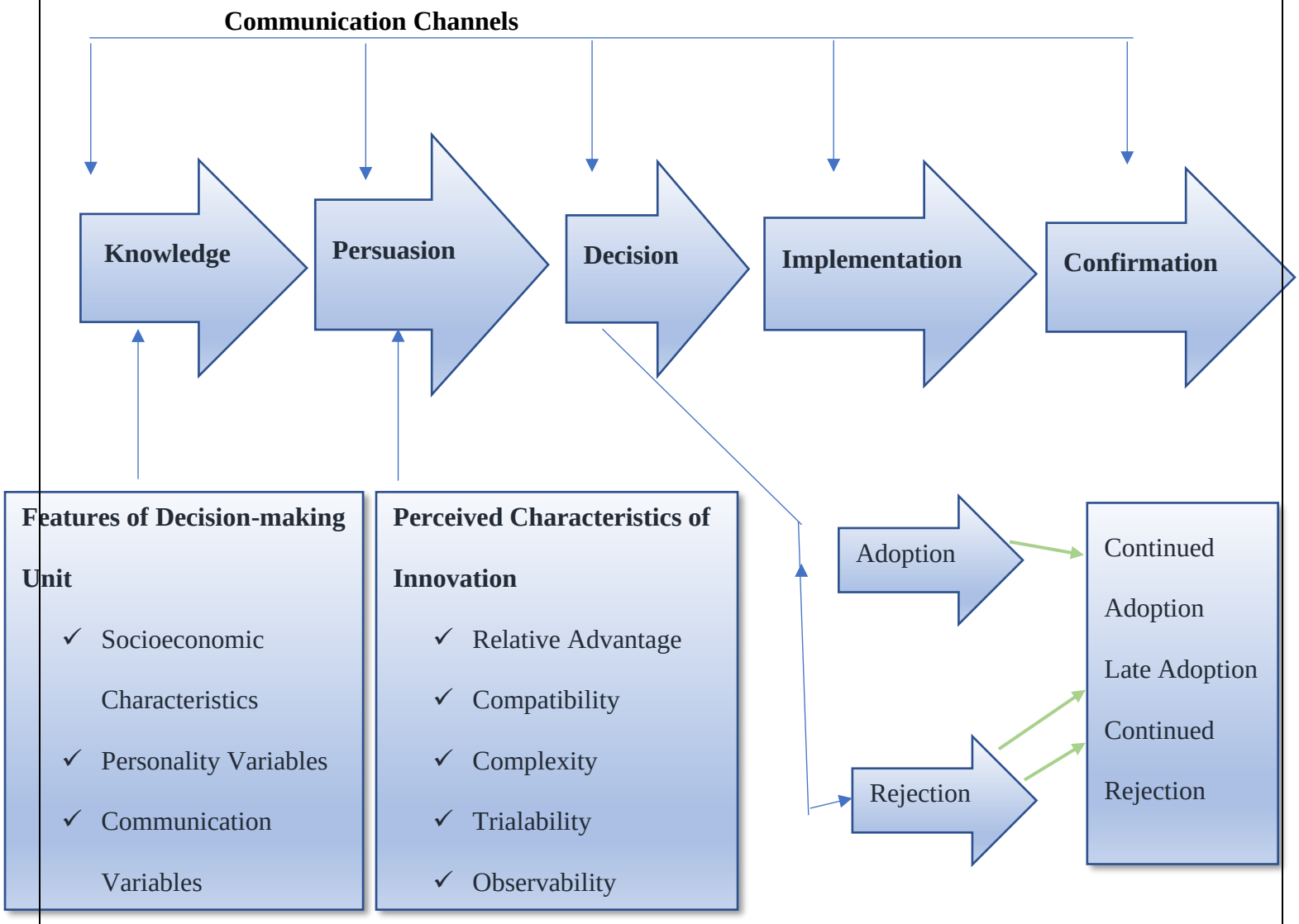


Figure 2.2.3: Model of Stages in the Innovation-Decision Process

According to Rodgers (2003), innovation refers to new ideas, exercises, or objects adopted by individuals or other units. The innovation aspect relies on the rate of adoption concept. The rate of innovation is determined by five factors: complexity, compatibility, observability, relative advantage, and trialability.

The degree to which an invention is perceived as being better than the concept it replaces is referred to as relative advantage (Rogers, 2003, p. 229). According to Rodgers (2003), relative

advantage makes up one of the important aspects predicting the adoption of innovation. The degree to which an innovation remains consistent with current values, prior experiences, and requirements of potential users is referred to as compatibility (Rogers, 2003, p.240). Complexity revolves around the difficulties in understanding and using the innovation (Rogers, 2003, p.257). Trialability denotes the ease with which technology can experiment when it is adopted (Rogers, 2003, p.258). Lastly, observability is involving the measure of how an innovation's internal state may be viewed only through its external outputs (Rogers, 2003, p.258).

The perceived benefits achieved by incorporating ICTs and e-commerce in the business activities are used to calculate the relative advantage, which includes cost reductions, market expansion, increased productivity, increased profitability, gaining competitive advantage, and products promotion (Poorangi et al., 2013; Apulu and Latham, 2011). The element of perceived benefits, which is similar to TAM perceived usefulness will be helpful in determining the intention towards adoption of e-commerce.

Compatibility is based on the fact that the adopted e-commerce system fits in with the existing traditional business operations and procedures. It implies that the existing processes experience little or no alteration during the integration of the innovation into the system. For instance, e-commerce is considered in how compatible it is with business operations involving suppliers and customers as well as the existing values of individuals in the organization (Poorangi et al., 2013).

Complexity revolves around the reduced likelihood of technology adoption by businesses or individuals if they find difficulties in using and understanding it as well as the inadequacy of tools and computers to support its adoption.

Trialability enables people to experiment with technological innovations for a certain time, hence reducing the uncertainties towards the adoption of new technology (Poorangi et al., 2013). It encompasses conducting a free trial of an e-commerce system before the company decides to

install it. It entails taking considerable time to evaluate the application and ascertain its workability (Kamaroddin et al., 2008).

From Roger's (1995) perspective, individuals' likelihood of e-commerce and innovation increases when they observe such benefits from other businesses. The internet has played a significant role in facilitating the companies' visibility to consumers, suppliers, and competitors, as they display e-commerce adoption benefits. Moreover, Organizations may use websites to convey information regarding their goods and services as well as business profiles to a broad range of potential consumers and suppliers (Poorangi et al., 2013).

A communication channel is the second aspect of the innovation process, which entails sharing of messages and feedback between senders and recipients (Rogers, 2003, p.18). It implies that individuals can share and exchange information through various communication channels, including television, radio, telephone, and the internet. Today, the internet has increasingly become common, providing a cheap communication channel for individuals from different geographical areas. As Rogers (2003) presents, communication channel plays important role in an individual's attitude towards new ideas, which leads to deciding whether to adopt e-commerce or not.

The third element of the model is time, which Rogers (2003, p.21) defines as the duration to finalize on a decision for innovation. The process takes place in five phases. The first phase involves knowledge, in which a person is aware of the technology but does not have a comprehensive background on its working. Persuasion is the second phase where the organization or an individual develops an interest in the innovation and acts as motivation for searching for information about the technology. The third step is the decision which is perceived as the most significant and challenging phase since it is here that data is collected and the idea of innovation is developed, and its actions result in choices to embrace or reject technology. The fourth phase is implementation, involving the individual's use of the innovation and may result in identifying its effectiveness, prompting the search for more details on innovation.

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Lastly, confirmation entails evaluation of the innovation and deciding whether to proceed using it. Also, Rodgers (2003), incorporated time into the theory of innovation, hence adopting a time-based classification. According to Rogers (2003, p.37), the extent to which a person or organization is ahead of the trend in adoption of new ideas compared to other elements of the social structure is referred to as innovativeness. He classified the adopters into five divisions:

1. **Innovators.** According to Rodgers (2003), innovators are individuals who venture into innovation adoption regardless of the accompanying risks at that time. In most cases, the innovators are young and possess large financial resources as well as high social class.
2. **Early adopters**: They are simply individuals in a position of adopting innovation. The early adopters possess a number of characteristics; higher leadership attitude compared to other categories, more financial resources and higher educational level, and younger compared to those of late majority. The early adopters make more careful steps during the adoption of the technology compared to the innovators.
3. **Early Majority:** The early majority take relatively longer to make decisions towards adopting innovation. They rarely hold the position of opinion leadership.
4. **Late Majority:** It represents a group of highly cautious individuals who have a negative attitude towards taking risks in relation to innovation adoption. Moreover, this group considers adopting an innovation after everyone else finishes adopting it. The late majority usually comprises individuals of low social class, with little financial resources as well as lower opinion leadership compared to the other categories.
5. **Laggards:** Laggard represents the last category of adopters who are usually conservative. The group almost lacks opinion leadership as well as financial resources. They cannot withstand the risks accompanying the adoption of innovation, as they are

usually at the lowest social class. Laggards are regarded as traditional as they always opt to adopt innovations based on prior innovations that have been implemented.

The social structure makes up the last aspect of Rogers' model procedure and is described as "a set of interrelated units" working together to solve a problem and centered on accomplishing a common objective. It revolves around individuals', organizations, and informal classes in the identification of diffusion, norms, and roles of opinion leaders (Rogers, 2003, p.23).

The social structure influences the diffusion procedure. Norms are founded on the social structure's varied behavioral attitudes and help in studying how such attitudes impact diffusion. Rogers (2003) pointed out that there are various levels of influences on individuals. An opinion leader has a significant impact on other individual's behaviors and attitudes, either in a positive or negative way. Such a leader, therefore, greatly influences the adoption process, especially at the initial stages.

Several works of literature point out that the attributes of the DoI theory, have been applicable in various theoretical bases among multiple empirical studies that address the adoption of technological innovation in enterprises (Tan and Eze, 2008; Poorangi et al., 2013). The researchers looked at the rate of innovation as they identify relevant factors, including compatibility, complexity, trialability, and observability.

Moreover, studies also point out that TAM and DoI are similar in terms of their constructs, only that DoI offers deep insights into the behavioral intention of the technology. Taking a Look at their constructs, TAM's PU is closely related to relative advantage in DoI, as the PEOU looks similar to the complexity attribute (Lee et al., 2011). Plouffe et al. (2001) pointed out the DoI's supremacy. Olatokun and Igbinedion (2009) weighed the relevance of DoI and TAM towards predicting the adoption of technology among various retail enterprises. Their study uncovered that

DoI provided a strong explanation on the technology adoption compared to TAM with 45 percent and 36.2 percent variance, respectively.

With respect to the studies' allusion that DoI provides a deeper explanation over TAM, most of them replaced TAM's elements of PEOU and PU with those of DoI to study the individuals' intentions towards technology adoption. Chen et al. (2002), as well as Zendehdel and Paim (2012), used DoI to study customers' intentions towards using online stores. Also, Olatokun and Igbinedion (2009) used DoI used it to look at customers' intentions to use automatic teller machines and Yatigammana et al. (2014) for e-learning. Besides, DoI offered an important analytical framework for studying individuals' attitudes towards using online banking services (Pearson, 2007; Perez et al., 2004).

Despite its strengths, researchers also identified some faults on the DoI, stating that the diffusion variables are not sufficient in explaining organizational environment since they emphasize mainly technological innovation. Multiple studies conclude that DoI fails to provide an explanation of the environmental, organizational, and cultural determinants of technology adoption in SMEs (Sparling et al., 2010; Allan et al., 2003; Ordanini, 2006).

Ordanini (2006) stated that there is a need to integrate DoI with other aspects such as organizational and environmental determinants so to provide significant predictions on firms' intentions to adopt the technology. Moreover, Perez et al. (2004) also pointed out DoI's insufficiency adoption based on organizational context and proposed adding extra factors or control variables in the original theory.

Various researchers extended opted for additional constructs while using the DoI with the aim of overcoming the limitations. For instance, Kamaroddin et al. (2009) measured the perceptions of Malaysian SMEs with respect to e-commerce applications, basing their study on DoI. During the study, they added security and confidence as extra constructs and noted their significant impact on predicting adoption of e-commerce by various SMEs. Within the same

country, Tan and Eze (2008) introduced security and cost constructs to examine ICT adoption and discovered that the integration of DoI attributes with security and cost were central in influencing adoption of ICT by the firms. In this study, the DOI construct, complexity is used in understanding intention towards e-commerce adoption among SMEs in Jordan. Complexity closely relates to how a technology is easy to use and where other users may shy away from using technology that is difficult to understand. For instance, consumers may not purchase online from a company's website that is difficult to navigate.

2.5.4 The Resource-Based View Theory (RBV)

The organization resource has been the cornerstone of research based on the organizational and management fields. Penrose (1959) first pointed out that internal resources as a significant determiner of organizational performance. Also, Wernerfelt (1984) emphasized resources as the main determinant for the success of a business. Barney (1991) was one of the main proponents of RBV who worked towards its definition. RBV is different from other frameworks such as evolutionary economics with its specific focus on resources as the main point of concern for businesses and their activities (Barney, 2001a; Barney, 2001b; Barney et al., 2011).

Some researchers have studied how companies collect and use their resources to create their own value. Much research has pointed out the acquisition of corporate resources based on diverse contexts such as foreign direct investment (Hooley et al., 1996), technology-oriented companies (Yli-Renko et al., 2001), enterprising companies (Leung et al. 2006), small companies (Winborg & Landström, 2001), and international links (Wever et al., 2005). Besides, academics in strategy and organization have studied the value creation of organizational resources in the contexts of e-commerce (Amit & Zott, 2001), organizational learning (Kang et al., 2007), and professional service companies (Lowendahl et al., 2001). Traditional scholars put companies in

the context of farmers and manufacturers who create certain kinds of products and services, gaining their competitive merit.

With respect to the role resources, RBV points out that organizations can still maintain the competitive advantage depending on the strength of their resource bases. However, they can use the same resource to block the competitors from creating their value. Such businesses keep their leadership in resource mobilization, and thus securing an effective competition. Some studies also point out how these organizations use these alternatives to obtain better resources.

Other studies have researched on innovative strategies as a mechanism of value creation based on different topics (Chesbrough, 2003), converge omics (Lee & Olson, 2010; Lee et al., 2010), industry structures (Jacobides et al., 2006), social networks (Tsai & Ghoshal, 1998), as well as trader relations (Walter et al., 2001). The studies imply that innovations play a vital part in the value-added to firms.

Innovations in organizations have been indicated to be significant in gaining a competitive advantage. According to Baldridge and Burnham (1975), competitiveness and a firm's performance can be described through innovation. Narayannan (2001), looked at an integrated framework for controlling technological adoption of innovation in enhancing the organization’s competitiveness. The research pointed out that firms increase their value by adopting innovations. With value addition, the organization achieves its competitive superiority. For instance, developing a new product can improve the competitive advantage.

Competitive advantage refers to the capacity to obtain ROI continually above the average of the particular industry. With respect to RBV, there are many specific resources to achieve competitive advantage. The organizations use both non-substitutable and inimitable characteristics in acquiring superior advantage.

Enterprise resource planning (ERP) involves a software package or interconnected business applications use in enabling the flow of information between processes and across

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organizations. The applications are geared towards integrating and coordinating business functions, including sales and marketing, purchasing, control of inventories, and accounting. Studies point out that ERP can offer system and information quality, which are significant contributors to achieving competitive advantage (Ram et al., 2014).

According to Hsu (2013), ERP and e-business applications both foster successful business strategies such as cost efficiency, differentiation, and intangible value. E-business plays a crucial role in linking two firms to carry out business operations such as online selling and buying among others. Studies point out to a positive correlation between E-business systems and firm's competitive advantage and performance. For instance, Beheshti et al. (2006) uncovered the positive impacts of different applications for e-business such as B2B and B2C in improving efficiency and reducing costs. Moreover, the studies point out the positive correlation between ERP and business value, and overall business performance (Matolcsy et al., 2005; Kallunki et al., 2007; Konthong and Ussahawanitchakit, 2009).

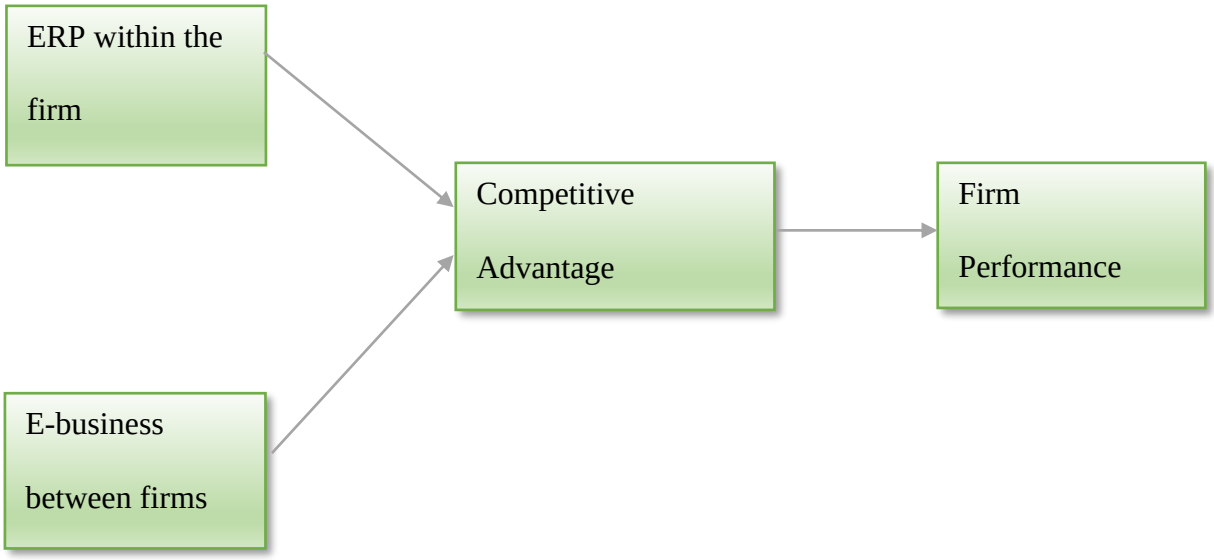


Figure 2.2.4: Relationship between ERP and E-business with competitive advantage in RBV framework (Konthong et al., 2016)

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However, the innovation bears two outcomes; it results in the generation of own value while lowering the competitors' resources. Business success has also been mentioned as a primary trait in adopting innovation (Herstatt & Kalogerakis, 2005; Mascitelli, 2000; O'Connor & Rice, 2001). Innovation is key towards creation of new products in a firm. With the introduction of innovations, an organization hopes that the competitors lose their strengths in the traditional products. Moreover, resources used for existing products, such as suppliers, may result in inventory without value. The adopters of innovation look forward to the extermination of current rights, and therefore they are able to push the business competitors into the value of the internally found resources.

The end superiority can influence the sustaining of organizational competitive merit. Organizations holding higher resources are likely to compete successfully, which can be achieved by adopting innovations (Barney, 1991; Barney, 1995; Fahy, 2002). Generally, it is possible to achieve competitive superiority by reducing the value of resources held by competitors by way of technological or innovation adoption. Also, some individuals look forward to adopting innovation since it would lower the competitor's resources; hence they could enjoy a highly competitive advantage.

One of the main advantages of RBV is that it points out the capabilities which any company and SMEs, must have to facilitate e-commerce adoption (Parker and Castleman, 2009). However, RBV also has its restrictions. It is based on the assumption that all firms maximize the use of resources, which is not the case for SMEs as most of them have limited resources such as personnel skills and also are less flexible (Rivard et al., 2006). The company’s resources are mainly used to determine the firm’s ability towards adoption of technology. It is limited to the organizational main stakeholders, that is, the management. Given that this study covers the intentions of employees, managers as well as customers, the model overlooks the role of customers but emphasizes the

management factor in adoption of e-commerce practices. For instance, the financial resources needed for implementing e-commerce affect the adoption process from the management's perspective. Financial resources in this context are related to the availability of sufficient financial budget essential for the deployment of advanced ICT infrastructure components, as well as the designing and maintenance of e-commerce websites.

2.5.5 The Perceived E-Readiness Model (PERM)

PERM model has been extensively used since both external and internal factors affecting e-commerce or technology adoption are tackled. The model was created by Molla and Licker (2005) during their research on measuring the E-readiness of developing countries for e-commerce adoption. PERM is based on imperative interactionism, which plays a significant role as a dynamic framework that combines all four viewpoints. Among the aspects, PERM entails multi-perspectives that include external aspects and internal institutional factors affecting the preparedness to adopt the technology. The model comprises two major constructs for e-commerce adoption. The first construct is the Perceived Organizational E-Readiness (POER), containing six variables within organizations that have an important effect on technology adoption. The second construct is Perceived External E-Readiness (PEER), which comprises three external elements that affect how organizations adopt e-commerce

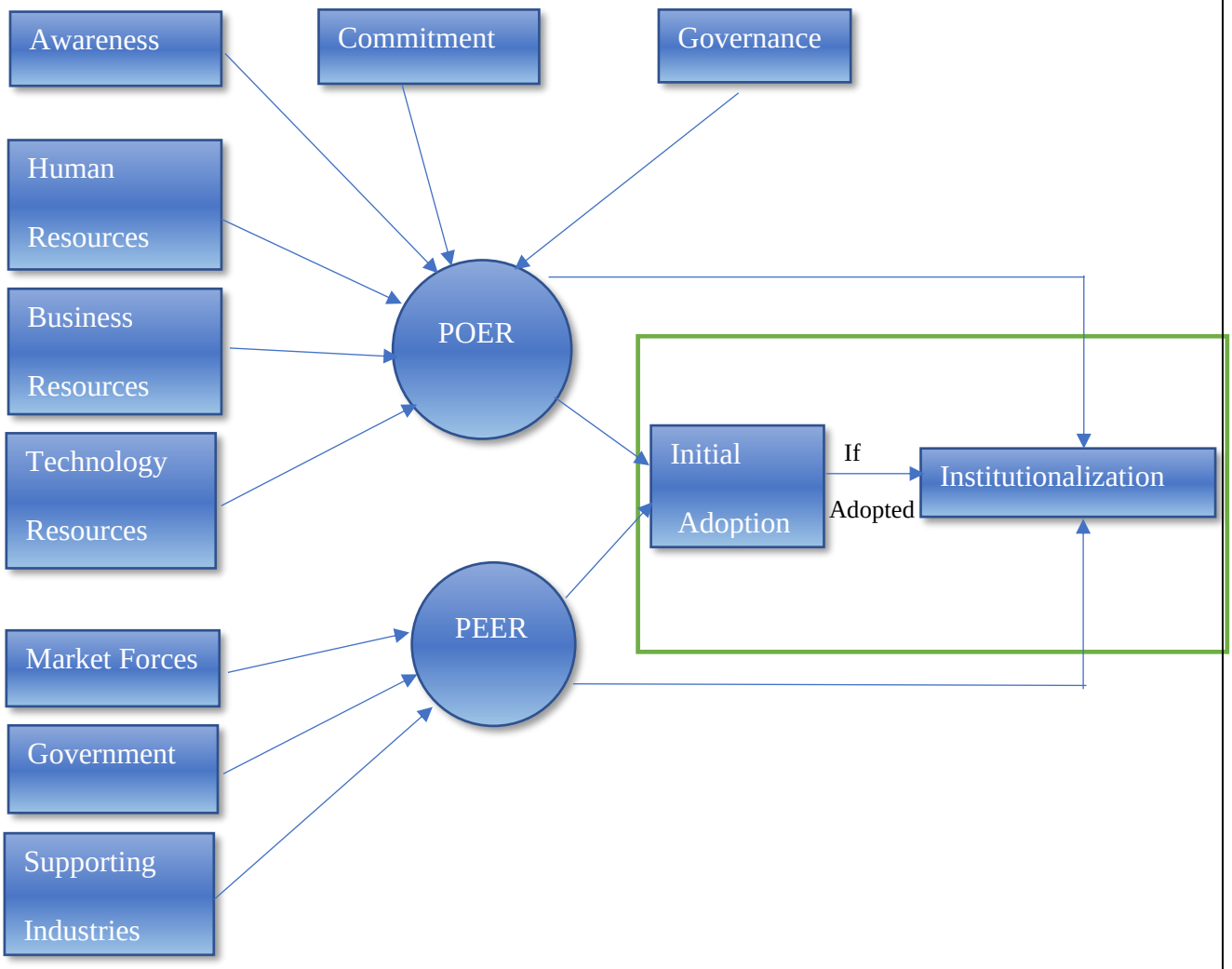


Figure 2.2.5 The PERM for assessing the E-procurement adoption (Molla & Licker, 2005).

The POER includes awareness, human, business, and technology resources, governance, and commitment, which have a huge influence during the initial stages of adopting technology. For the case of external E-Readiness, the factors include market forces, government support, and supporting industries. Both aspects impact the initial stages of adopting technology, as illustrated in the figure above.

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The model has been applied in various studies when measuring the enterprises' E-readiness towards e-commerce adoption. It differentiates initial and institutionalized adopters based on technologies, resources, and operational reasons.

2.5.51 Perceived Organizational E-Readiness (POER)

Awareness

Awareness points out the state of understanding the environment surrounding e-commerce. It could be achieved through a thorough comprehension of the ministry's system, technologies, conditions, gains, and risks, as well as predicting future trends of their effects. Studies suggest that understanding innovation and its advantages are a significant first step that affects the decision towards adoption or rejection (Rogers, 2005). When organizations are well informed concerning the potential e-commerce and have agreed to adopt technology, the urge to continue investing in the technology relies on the awareness of potential benefits, risks, failure as well as success rate (Han & Noh, 2016; Lawrence, 2011).

Resources

Resources involve the human, technological, and business resources of an organization. Resources play an essential role in the organization's capacity in responding to challenges and opportunities resulting from e-commerce (Hartman, 2010). The term "human resources" implies the accessibility of a workforce with skills in IT to handle e-commerce incorporation into the organization (Powell & Dent-Micallef, 2003; Zhuang, 2001). Technological resources revolve around the degree of automation and web application experience. Business resources involve the capability and assets such as readiness to embrace change, business relationships environment, and financial resources (Han & Noh, 2016; Zhuang, 2001).

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Since firms vary in terms of stock, uniqueness, durability, and specificity in relation to their resources, such variations may result in differences in the extent of e-commerce implementation (Han & Noh, 2016; Zhuang, 2001; Travica, 2002; Powell & Dent-Micallef, 2003). Several pieces of literature point out that employees (Wang & Cheung, 2004), degree of hardware and software components (Chwelos et al., 2001), financing (Wang & Cheung, 2004), and healthy culture (Goode & Stevens, 2000), influences initial acceptance of e-commerce. Therefore, the human, technological, and structural readiness of organizations may either facilitate or impede the initial and subsequent institutionalization of e-commerce.

Commitment

Molla and Licker (2005) point out that commitment involves the support by crucial stakeholders of firms, particularly the CEO, towards championing e-commerce. The study indicates that the senior management's commitment towards the deployment of technology is a significant aspect influencing e-commerce adoption (Willcocks & Griffiths, 2008). Many organizations do away with e-commerce implementation due to a lack of commitment (Daniel & Grimshaw, 2002; Hartman, 2010). According to (Gefen, & Straub, 2000), the high managerial turnover in most developing nations and incoming recruits tend to perceive predecessors' innovations with a particular degree of skepticism.

Governance

Governance involves the strategic, tactical, and operational models defining how enterprises set goals, distribute resources, and make decisions (Willcocks & Griffiths, 2008). The governance of firms determines the priorities granted to e-commerce adoption and implementation (Hartman et al., 2010). Moreover, governance influences the transition of an organization to e-commerce, the integration of e-commerce to businesses, and the urge to continue with adoption

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beyond the initial stages. (Palacios, 2003) points out that most SMEs in developing nations lack the governance to propel e-commerce adoption once they have made the initial steps.

2.5.52 Perceived External E-Readiness (PEER).

Government E-Readiness

The government has been noted to play a vital part in influencing the adoption of innovation, particularly in emergent states (Ang et al., 2003; King et al., 2004; Montealegre, 2001). It may encourage private sectors to adopt technology through the provision of supportive infrastructures, legal and regulatory frameworks as well as directives (Kuan & Chau, 2016; Oxley & Yeung, 2010). The readiness of the government in promoting e-commerce determines the environment for business operations and influences their confidence and urge to adopt it (Dutta et al., 2004; Gefen & Straub, 2000).

The competitiveness in developing countries s usually shaped by the relationship between businesses and government as well as the market forces (Montealegre, 2009). The governments, particularly in developing nations, usually manage technology development hence influencing e-commerce implementation decisions. When governments become committed to e-commerce, they improve policies that enhance the use of e-commerce (Dutta et al., 2004). However, various organizations hold perceptions on the extent of government preparedness in a different manner. It affects their decisions towards e-commerce adoption as well as beyond level adoptions.

Market Forces E-readiness

Market forces e-readiness involves the utilization of e-commerce by an organization's competitors, consumers, providers, as well as other partners within the business's cycle. E-commerce adapts to the doctrines of network externality in such a way that the contributors of e-commerce acceptance are overly embedded in the social structure than the innovation's attributes

(Au & Kaufman, 2001). For example, the pressure from market forces is pointed out as one of the primary aspects driving adoption and further technology usage (Dos-Santos & Peffers, 2001). Also, firms that perceive the suppliers, clients, and other business partners as ones with ease to accept e-commerce tend to adopt it or venture into more advanced technology implementation to avoid competitive disadvantage as well as enjoy the perceived benefits (Au & Kaufman, 2001; Chwelos, 2001; Wang & Cheung, 2004).

Supporting Industry E-Readiness

Molla and Licker (2005) indicate that the way e-commerce is conducted relies on multiple support-giving industries. The industries play a significant role in the creation of advantages by availing convenient, fast, and even privileged access to e-commerce resources (Porter, 2000). The most crucial aspects of support industries include the affordability of IT services, institutionalization, and growth of the financial sector, as well as expansion of carrier or shipping infrastructure, as well as penetration of carrier or transportation facilities (Humphrey et al., 2003; Travica, 2002). Several studies point out that in many developing countries, there is insufficient development of IT industry, the financial sectors are not well developed for handling electronic transactions, with poor transportation facilities (Dutta et al., 2004, Hadidi, 2005; Humphrey et al., 2003; Tigre, 2003).

PERM is praised due to various reasons. First, the model captures the firm's viewpoint, comprehension, potential gains, and risk of e-commerce, which are essential elements to be considered before adopting e-commerce. The second reason is that PERM represents SMEs' decision-making bodies' e-commerce knowledge and devotion. Thirdly, the model also looks at major organizational elements, including business infrastructure, business process, and governance. However, PERM's limitation is that it does not capture significant industry descriptors like sector and firm size (Tan et al., 2007). In this study, PERM constructs such as organizational

awareness and government e-readiness are seen to have a key impact on e-commerce adoption among SMEs in Jordan. It could emerge when looking at the managers' and employees' perspectives on the factors delaying the companies from adopting e-commerce. For instance, the attention that government gives to the implementation of legislation to secure online transactions determines the rate of adoption of e-commerce among SMEs.

2.5.6 The Application of Theory in E-commerce Adoption

From the previous discussions, it can be noted that no single theory can exhaust the explanation of e-commerce adoption. Several studies integrate one or more of the models to provide sufficient explanation for e-commerce adoption in SMEs.

Some of the models share similar weaknesses, hence need to borrow more constructs from other models to strengthen their explanation. For instance, TAM is considered a deterministic model as it solely focuses on users neglecting multiple interplays of other factors shaping e-commerce adoption among SMEs. In this research and after studying the theories and frameworks it has been found that TAM suits this study the most and decided to be used to study e-commerce acceptance by consumers in Jordan. Also, DOI and RBV do not exploit the contextual issues in SMEs especially in developing countries. Chooprayoon et al. (2007) suggest that TAM be extended by adding it with other theoretical frameworks to provide more insights on e-commerce adoption. Some studies indeed added extra constructs for enhancing their explanation (Awa et al., 2010).

However, a study shows that the TOE framework may be an entry point for comprehension of adoption due to its consideration of the various organizational determiners such as technology and environment (Ghobakhloo et al., 2011). According to Sila and Dobni (2012), the theoretical framework for e-commerce adoption requires considering factors affecting the tendency to use and adapt it, which revolve around technology, organization, and environmental circumstances for

businesses. Thus, in this study, TOE will point out significant aspects concerning e-commerce adoption in Jordan.

Also, several researchers pointed out that TOE could be integrated with DOI in order to evaluate factors for technology adoption in organizations (Abou-Shouk et al., 2012; Oliveira et al., 2010). The studies indicated that TOE is compatible with DOI in creating robust explanations of technological aspects influencing organizations' adoption of technology. According to Oliveira et al. (2011) studies, the resultant integration of TOE and DOI provided a robust explanation of the organization's technological adoption.

However, TOE falls short of providing a framework through which one can examine the nature of relationships and perspectives in which SMEs in emerging nations arrive at decisions concerning technology acceptance. Therefore, for better application in e-commerce adoption, TOE may be combined with another model, PERM in particular. PERM points out that assessing the managerial, internal and external organization issues are important in the provision of vital predictions for e-commerce adoption. The PERM, therefore, could be useful in complementing TOE through the provision of explanations of the interplay and social structures in which social structures operate. Given the current situation, PERM will help to understand the current status of e-commerce adoption in the economic development of Jordan.

There tends to be relationship between PERM and TOE, as they all point out at technology, organization, and environmental circumstances of firms, as main factors for e-commerce adoption. The advantage of PERM over TOE is that it ignores the factors individually but rather takes note of the synergy amongst all the factors, capturing relevant changes to firms, particularly in developing countries. Therefore, most would consider PERM to offer useful insight for investigating adoption of e-commerce by SMEs from its ability to account for interactions and structural characteristics affecting adoption. The researchers who have applied PERM in studying e-commerce adoption used it in outlining differences between the adopters and non-adopters of e-

commerce, that is, in the developing context (Tan et al., 2007). Moreover, studies indicate that integrating RBV with TOE can help develop an in-depth understanding of e-commerce in competitive markets (Zhu & Kreamer, 2005; Rivard et al., 2014).

Model/theory	Key positions	Advantages	Limitations	Relevance to the reported study	References
TAM	PU and PEOU	-It has a great predictive power and ability to explain individual acceptance and usage of e-commerce. -TAM features a more solid structure as well as a reliable measuring scale, allowing it to be used for a variety of technology adoption variables	-It is only dependent on two constructs: PU and PEOU, for determining technological acceptance; hence may need additional variables to offer comprehensive knowledge on the case. -It is only helpful in studying technological adoption at the individual basis than at the company level since it does not look at more descriptive factors such as organizational and environmental determinants.	The PU and PEOU will be used to identify consumers' intention towards e-commerce usage.	(Ahmed & Akhlaq, 2015; Hidayat-ur-Rehman et al., 2016). (Munir et al., 2013). (Taylor & Todd, 1995). Venkatesh and Bala (2008). (Fayad & Paper, 2015).

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TOE	Technology, Organization, and Environmental factors	It is important in describing setting in the business adopts particular technology	- In circumstances where business managers are viewed as the most important decision-makers in adopting technology, the model fails to give deep insight into managerial factors. - TOE's limitation is based on the fact that it requires more constructs to provide a better definition of technology acceptance	- Its constructs will be helpful in understanding the technological, organizational, and environmental factors that might impact e-commerce adoption during thematic analysis.	(Scupola, 2009; Alamro and Trawaneh, 2011). (Thong, 1999; Sarkar, 2008; Bao and Sun, 2010). (Lee and Shim, 2007), (Pan & Jang, 2008),
DIT	Internet, Communication channel, and time	It offers deep insights into the behavioral intention of the technology	The diffusion variables are not sufficient in explaining organizational environment since they emphasize mainly technological innovation.	Use of its constructs together with TAM's provides a deep insight into the thematic analysis	(Sparling et al., 2010; Allan et al., 2003; Ordanini, 2006). (Tan and Eze, 2008; Poorangi et al., 2013).
RBV	Organizational Resources	It points out the capabilities which any company and SMEs, must	It assumes that all firms maximize the use of resources, which is not the	It has been used in explaining the role of size of the organization and financial	(Barney, 1991; Barney, 1995; Fahy, 2002). (Herstatt & Kalogerakis,

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		have to facilitate e-commerce adoption, including tangible and intangible resources	case for SMEs as most of them lack resources, skills, and flexibility.	resources in e-commerce adoption	2005; Mascitelli, 2000; O'Connor & Rice, 2001). (Lee & Olson, 2010; Lee et al., 2010), i
PERM	POER and PEER	-The model captures the firm's viewpoint, acceptance, expected positive outcome, and downside of e-commerce, as key factors to consider before adoption of e-	-It does not capture significant industry descriptors like sector and firm size	-It has been used to explain readiness of owners and managers in e-commerce adoption.	(Tan et al., 2007). (Humphrey et al., 2003; Travica, 2002). (Au & Kaufman, 2001; Chwelos, 2001; Wang & Cheung, 2004).
		commerce. - represents SMEs' decision-making bodies' e-commerce knowledge and devotion.			

Table 2.9: Summary of Models

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2.6 Identified Gaps in Knowledge

The literature presents insufficient research on the utilization of consumer service tools to propel consumers; behaviors and manage sales. Gaps exist concerning aspects such as the association of the usefulness of e-commerce and the subsequent ease of use and the intention of firms' stakeholders in adopting relevant technology among SMEs (Yaseen et al., 2016). Implementation of succinct e-commerce tactics requires the managers to have a comprehensive knowledge of such order-fulfillment aspects affecting consumer behavior. There are no studies that looks at the collective role of employees, customers, and managers/owners in adopting and facilitating e-commerce in Jordan.

Therefore, various theoretical frameworks and adoption theories will be reviewed to evaluate the hidden contextual e-commerce uptake elements in the context of Jordan SMEs. This study will look at settings hindering the consumers from exploiting e-commerce platform. For instance, the ease of use of e-commerce links and trust, which help to determine the extent of usage of e-commerce by consumer. With the help of TAM constructs as well as other extra constructs, this study will explore consumer, employee, and managers' factors influencing adoption.

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CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

The chapter looks at the overall research strategies and methods with their development in this particular study. The chapter is also centered on developing and employing research methodology, which ensures the collected data meets the aims of the research.

The chapter describes the research design and develops a methodology for conducting the study. Therefore, it explains the sampling design and procedures as well as the data collection methods applicable. The research is based on adoption of e-commerce among SMEs in Jordan through qualitative and quantitative surveys. Various alternatives exist for carrying out research, so the chapter is centered on providing justification on the choice of research techniques or methods used.

3.2 Research Methodology

As Saunders et al. (2016) argue, research methodology refers to data as "facts, opinions and statistics that are gathered and recorded for purposes of referencing or analysis" (Saunders et al., 2016). Various techniques to collect data are used by researchers, including secondary data, experimentation, interviews (Saunders et al., 2016)

3.2.1 Secondary Data collection

Collection of secondary data is where the researchers use the data which has been gathered by other people for a specific purpose (Saunders et al., 2016). The benefits of secondary data include low expenses and ease of collection; the data is feasible for longitudinal research; provision of contextual information, and data permanence (Yin, 2017). Secondary data is gathered by other

individuals, often for other purposes, it may fail to meet researchers' demands. Also, another demerit may arise in such a way that content used on this data may not suit particular studies. For this research, secondary data was used to provide a basic understanding of e-commerce.

3.2.2 Primary Data Collection

According to Yin (2017), researchers use either qualitative, quantitative or mixed methods while conducting business research. A researcher uses a quantitative method for testing a hypothesis by evaluating relationships between variables (Walsh, 2015).

A methodology basically involves a set of techniques and procedures that scholars employ in constructing systematic plans to achieve the outlined research objectives (Glatthom, 1998). Clough and Nutbrown, 2007 point out that methodology refer to a process of interaction relating the research's conceptual framework to the empirical world, which involves a process of collecting and analyzing data. They also point out that it is essential to bring out a clear correlation between research objectives and field surveys to evaluate the statistical significance. The development of methodology is aimed at discovering and justifying study assumptions as far as practicability is concerned. With the methodology, the researchers can locate the claims within the traditions of inquiry (Clough and Nutbrown, 2007).

3.2.3 Research Philosophy

This study is based on pragmatism. Pragmatic studies are centered on individual decision-making in an actual real-world situation. Pragmatic research first begins with identifying a problem and observing from a broad perspective (Legg & Hookway, 2019). This results in research inquiries, seeking a better understanding of the problem. In social sciences, pragmatism remains committed to providing 'solutions' to problems in the real world through generation relevant knowledge, certified via consensus theory of truth (Kitcher, 2015).

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The driving force behind pragmatism is the prioritization of end-causes and results of practices over abstract first-causes. Hence, pragmatic study interprets the concept while tracing its practical implications. This study was conducted using a pragmatic research approach, that argues for the application of multiple research techniques which suit the requirements of the study while focusing on the most appropriate methodologies for the research problem (Hussey & Collins, 2014). The reason behind choosing Pragmatic philosophy and no other philosophies is because it was the only one that fits all the conditions which are mixed methods, qualitative and quantitative research and, either observable occurrences or subjective meaning can yield appropriate knowledge. Also, it emphasizes actual applied research and integrates multiple views which helps in data interpretation.

3.2.4 Research Approach

Research methods can be divided into three types: deductive method, inductive method, and abduction method. With deductive research, the conceptual as well as theoretical frameworks, are constructed and then tested through empirical observation. On the other hand, inductive research derives theories from observations of factual reality (Zellmer-Bruhn et al., 2016). Deductive methods are the most suitable for any research to create theories and hypotheses, and develop research strategies to test the hypotheses, or use inductive methods in the data collection and analysis towards coming up with theories (Yin, 2017). It also indicates that the data type can be digital information or recordings and reports of the voices of the participants.

All methods are important towards formation of either quantitative or qualitative research methods; the previous method-based research uses the theory in a deductive manner and puts it in the previous research plan, while qualitative research tends to be more comprehensive the subject data is constructed into generalized models or theoretical induction methods (Creswell, 2003)

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Inductive inquiry relies on investigators' knowledge and reality. In contrast, deductive inquiry relies on logic and structure. The hypothetic deductive method stresses on deductive thinking as a means of testing hypotheses. The method necessitates that the observable facts be aligned with the theory's logical conclusions (Rotledge and BSN, 2014).

Quantitative methods impact how a theory is placed within any study that uses quantitative methods. As presented by Creswell (2003), the researchers who use this research method place the theory in introduction, literature review, after the hypothesis or research question is posed, or in a separate part of their research. On the other hand, some researchers who carry out qualitative research consider that their work objectives are to develop theories. The reasons why deductive study is different from inductive study is because it originates from general ideas before it infers particular expectations from the ideas, and proceeds to use empirical data in testing the expectations (Chambliss & Schutt, 2009). For the inductive research, it uses a particular data set in the development of theories that explain these data. Based on their research, Collis and Hussey (2003) implore those inductive studies develop theories by observing empirical reality, whereas deductive methods begin with the development of a theoretical framework and then test it through empirical observations.

However, inductive and deductive methods are not without any criticism. For example, a structured deductive study ignores that human subjectivity exists simply because deductive researchers develop a theoretical framework to explore the phenomenon under study on the basis of its external logic, with little regard to the human logic involved internally (Gill and Johnson, 1997).

For an abductive type of study, the study process begins with "surprising facts" or "puzzles", and the investigation process is dedicated to their interpretation. When researchers come upon empirical facts that are beyond the purview of established theoretical frameworks, "surprising facts" or "puzzles" may be noted (Awuzie & McDermott, 2017). The abductive method

was chosen since in the abductive studies, the research process is centered on explaining the "incomplete observation," the "surprising fact," or the "puzzle" specified at the beginning of the investigation. Abductive research is important because there are usually many or infinite possible explanations for a phenomenon, so you need some way to decide which possible explanations to look at first.

A less experienced candidate of the researcher's stature needs a flexible form of research design to tell a story, because researchers' understanding is constantly evolving, leading to changes in research approach and information gathering methods. The story is an argument that begins with the most recent discussions in the literature and concludes with an explanation of how research has changed these discussions. The central part provides evidence of the development of cases and theoretical points that led to changes in the literature (Dubois and Gadde, 2002).

Abductive method also bears advantages because it can combine deductive method and inductive methods. It constantly shifts from the empirical dimension of analysis to the theoretical dimension. Dubois and Gadde (2002) pointed out that abductive logic is more useful than pure induction or deduction. Lukka and Modell (2010) pointed out that abductive reasoning is gradually accepted as an important part of explanatory research. It focuses on using multiple sources of evidence and discovering new dimensions of research questions. The research combines data from customers, employees, and managers. The research direction and redirection play a fundamental role to achieve matching. The direction of my thesis is based on theory, literature review, and exploratory case studies. Based on all the above the researcher decided to use the abductive approach

3.2.5 Quantitative Study

Quantitative methods extract data from participants' responses, converting them into statistical representation rather than a direct portrayal of a phenomenon. It is suitable for analytical

methods, such as statistical correlation, which is usually related to hypothesis testing. The research process of this study is objectively constructed, and the research results usually represent the population studied.

Quantitative methods are useful tools for researchers in increasing knowledge via predictive data in explaining relationships between variables (Awuzie & McDermott, 2017). Landrum & Garza (2015) point out that quantitative methods are the most suitable strategies for analyzing statistical data disparities.

Motwani (2016) used quantitative methods in examining data that describe different features of e-commerce. Similarly, Norshidah et al. (2014) conducted a survey among 197 respondents in Malaysia and analyzed the correlation among website usability, website usefulness, and consumers' willingness to continue using online shopping platforms. With respect to this, the researcher also used the quantitative method when examining the relationship between the PEOU and the PU of an e-commerce platform and the intention towards adopting online shopping.

3.2.6 Qualitative Study

The objectives of qualitative and quantitative research are vastly different (Bryman, 2016). A researcher uses a qualitative method in enabling in-depth examination of a subjective phenomenon that is yet to be well understood and fails to explain how the variables are related (Omair, 2015). Moreover, qualitative methods include a personal interview, observation, review of documentations, and focus groups during data collection (Arora et al., 2021). The researcher considered taking telephone interviews with the managers and online surveys for employees of the companies as the researcher incorporated qualitative questions in the questionnaires.

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3.2.7 Mixed Methods

This study used the mixed-methods approach where both quantitative and qualitative methodologies are utilized to address hypotheses (Venkatesh et al., 2016). The application of a mixed method involves bringing together attributes from qualitative and quantitative projects in the process of understanding all the aspects (Siddiqui & Fitzgerald, 2014). The mixed-methods approach is suitable in studies where a single method fails to sufficiently answer the study's question (Venkatesh et al., 2016). Given that this research includes both statistical hypotheses testing with qualitative inputs, the mixed method would be appropriate for the research process.

The study is explanatory in nature, seeking to investigate the relationship between variables and provide useful insights. It uncovers evidence of cause-and-effect correlations between the dependent and independent variables (Draper, 2004).

The conceptual framework of this research is based on TAM. The hypothesis formed were aimed at guiding the research. Therefore, the approach of study fulfills the abductive reasoning on the basis of outlined theory. Concepts in the hypotheses are further put into operation involving measuring via observations and testing, hence making it possible to reject or confirm the hypotheses (Greener, 2008).

3.2.8 Research Design

Research methods give the researcher ways for collecting data. Likewise, research designs provide a framework to examine research data (Yin, 2017). A researcher may conduct a study based on any of the four quantitative research designs namely correlational, descriptive, experimental, and quasi experimental (Bryman, 2016). Correlational designs are suitable for examining the correlations between independent and dependent variables (Bryman, 2016). According to Johnson & Christensen (2017), researchers may also decide to use correlational designs when examining whether an independent variable predicts a particular dependent variable

in the study. Therefore, the researcher also based the study on a correlational design, for evaluating the relationship between independent and dependent variables with respect to the data collected. Omair (2015) points out that studies may involve descriptive design for studying the features of a sample without the need to establish statistical relationships. Therefore, a descriptive design could not be used in this case. Moreover, several researchers indicate that experimental and quasi experimental designs are best suited to determine causal consequences and effects (Zellmer-Bruhn et al., 2016).

Multiple studies support the design, method, and instrument used in this study. For instance, in Wang et al. (2015) study, TAM model was used for testing the correlations between customers' motivation and acceptance of tourism e-commerce activities with the help of a survey tool. Moreover, in other studies such as Erasmus et al. (2015), TAM and correlational designs together with questionnaire instruments were used in examining the variables of PU and PEOU of IT and intentions to use it.

In regard to Easterby-Smith et al. (2008), the consideration of an appropriate research method is vital in guiding the researchers to settle for the best research strategy for data collection and analysis. Multiple research strategies can be used when studying information systems, including experiments, surveys, case studies, forecasting as well as reviews (Williams et al., 2009). However, the prevalent strategies employed in most studies include surveys, experiments, case studies, and interviews (Mingers, 2001).

Moreover, Choudrie and Dwivedi (2005) further explored Minger's (2001) study and reviewed the techniques used by prior studies when examining technology adoption. Their study pointed out that survey and case study methods are predominant in studying technology adoption over experiments.

In this research, the survey was employed as a data collection method due to various reasons. First, the study involves a variety of samples of different e-commerce companies in Jordan

to reach reliable results. Ditsa (2004) pointed out that survey is the most appropriate method for collecting a large amount of data, hence increasing the result's validity and generalizability. Secondly, the survey method is a feasible and economical method for large data collection within a short period as it involves fewer costs. Thirdly, given the current situation involving the COVID-19 pandemic, surveys prove to be effective as they reduce close interactions between researchers and correspondents. The lessened face-to-face interactions play an important role in curbing the spread of the disease while at the same time adhering to set COVID-19 protocols. Moreover, Williams et al. (2009) pointed out that surveys were more effective for studying technology and innovation acceptance and adoption among organizations (Williams et al., 2009).

Moreover, Ditsa (2004) also noted that surveys were most appropriate in studying information systems, particularly in looking at individuals and organization variables relevant to technology adoption. It was pointed out as a significant method for achieving research objectives. He proposed that survey outcomes provided robust statistical inputs for the research since they provided relatively strong tools for examining correlations between dependent and independent variables.

	Telephone interview	Personal Interview	Mail Survey	Internet Survey
Geographical location	Easy	Difficult	Easy	Very easy
Cost	Low	Low	Low	Low
Training	Required	Required	Not required	Not required
Response rate	Medium	High	Medium	Low

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Respondent's feeling of privacy	Uncomfortable	Less comfortable	Comfortable	Comfortable
Sample size	Medium	Low	Large	Large
Reaching respondents	Easy	Difficult	Medium	Easy
Interviewer bias	Yes	Yes	No	No
Missing data	Low	Low	Medium	Medium

Table 3.1: Survey research methods (Saunders et al., 2012; Jackson, 2011; Ditsa 2004)

The survey approach can take place through various methods including telephone interviews, postal questionnaires, personal interview as well as internet surveys (Saunders et al., 2012). The table above compares various types of surveys.

3.2.9 Sample design

It is difficult and nearly impossible to collect information from all members of a population. Therefore, the study will focus on the sampling technique, which involves collecting information from a subset of the group to represent the entire population. The technique constitutes different steps: target population, sample frame, sample technique, sample unit, and sample size (Saunders et al., 2012).

3.2.91 Target Population

A target population refers to a group of potential participants bearing common characteristics in which the researcher can obtain the desired data (Creswell (2012, p.142). The study often identifies the group to be researched upon, basically termed as the target population. The study goes on to select a sample out of the identified population, assuming that it represents

the whole population. In this research, the target population includes consumers of SMEs in Jordan. Survey was being distributed to 146 consumers that frequently conduct their businesses with SMEs. For purposes of narrowing the scope and obtaining accessibility to potential respondents, the researcher emphasized the data collection process solely from Internet users living within the city.

The strategy used for picking the participants was associated with e-commerce purchasing. The individuals (customers) who were eligible to participate in the survey were those that purchased from the enterprises at least once. Also, the participant was required to be English literate. This was geared towards avoiding errors related to the translations.

Free Online surveys platform has been used for creating the web-based data collection tool and presented it to the respondents via email. Ramsey (2016) points out that web-based data collection methods are effective methods for generating large amounts of data since they eliminate the need for data entry, expensive transfers as well as tracking of forms and verifications.

3.2.92 Sample Frame

The sample frame is a list of the population under study that can be used to create or draw the sample (Bruce et al., 2002, p.161). The aim of the sampling design is to choose certain participants from the population to be reached to undergo the survey. Usually, the sample frame is compiled from yellow pages, phone directories, and other reliable sources relevant to the research's target audience (Arora et al., 2021). Sample frame plays as a critical function in sample design as it reflects the cost as well as the survey's quality.

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3.2.93 Sample Unit

The sampling unit, according to Dodge (2003, p.360), is one of the units into which an aggregate is split or considered as divided for sampling purposes. The units are considered individual sets or indivisible ones. Davis (2004) emphasizes that it is essential to locate the sample unit since it's the set from which information will be collected. In this research, the sample unit comprised of the owners or managers, customers, and employees. It is because they make up a significant group of individuals who are key players in e-commerce adoption.

3.3 Sample Method

Sampling methods are used in identifying the unit of analysis as well as obtaining data from the target population (Etikan et al. (2016). Sampling methods are geared towards reducing potential errors during the sampling process (Davis, 2004). It is categorized into probability and non-probability sampling methods. Selection of the sampling method relies on various factors, including the type of research, samples available, time, and financial capability (Hair et al., 2006).

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Targeted group	Sample size	Sampling method	Type of data collection	Research method
Owners/Mangers	31	Purposive sampling	Interview	Thematic analysis
Employees	40	Simple random sampling	Survey	Mixed methods
Consumers	95	Simple random sampling	Survey	Inferential statistics

Table 3.2: Research sampling (Targeted group, Sample size, Sampling method, Type of data collection)

3.3.1 Probability Sampling

Probability sampling comes when each person in the target population has an equal chance of being chosen to participate in the study. Chance occupies a great space in this type of sampling. It comprises four types; simple random sampling, systematic sampling, stratified sampling, and cluster sampling (Bruce et al., 2002). In simple random sampling, random candidates are chosen from the consumers and from the employees of different kinds of SMEs to answer the survey that is structured for them. Emerson (2015) notes that random samples lead to the reduction of the impact of uncontrolled factors. Simple random selections provide the most practical estimations of the entire group due to the fact the average number of participants selected would be an accurate representation of the population (Solanki & Singh, 2015).

The probability sampling approach is often used as it helps reduce biased findings given that no participant is denied an opportunity to participate in the survey, which implies that the researcher will obtain a more accurate picture of the population's characteristics (Fricker, 2016). According to Fricker, 2016, the main benefit of a probability sampling method is that the findings

from the research can be generalized in populations bearing similar characteristics. Etikan et al (2016) notes that the downside probability sampling method is that it is resource-consuming with respect to money and time. Moreover, another downside of probabilistic sampling is that it demands testing the representativeness of the achieved samples (Fielding et al., 2016).

3.3.2 Non-probability Sampling

For the case of non-probability sampling, the technique excludes chance as a way of selecting the sample for study (Bruce, 2002, p.165). Therefore, non-probability sampling is different from probability sampling due to the fact that it does not include random selection. The selection is based on the traits of the population and the aim of the research. In contrast to probability sampling, nonprobability sampling techniques including convenience, purposive, snowball, and quota sampling are based on the premise that each of the participants does not have known probabilities for selection to participate in surveys (Fricker, 2016). This approach is advantageous as it is less expensive since the researcher may not require the whole population to attain the required participants, but instead, it narrows down to specific groups (Etikan et al., 2016).

However, the non-probability sampling techniques are not suitable for researchers lacking adequate information concerning the population under study (Etikan et al., 2016). Otherwise, a researcher may use a nonprobability sampling method due to the ease of accessibility to the participants (Fricker, 2016). The researcher employed a non-probability approach in this research when selecting owners and employees due to budget and time constraints as well as lack of enough information with respect to the participants. Moreover, it was difficult locating participants due to the lockdown and restricted interactions as a result of COVID-19 outbreak. Multiple companies declined requests to have to interact with their staff due to fear of contracting the disease. However,

the researcher resorted to a random sampling technique to obtain a sample of customers to include both customers that have or have never used e-commerce before.

Etikan (2016) points out that non-probability sampling methods are advantageous since they are less expensive compared to probability sampling regarding time and money required during the study. Due to time constraints and COVID-19 related restrictions and delays, the researcher conducted a non-probabilistic convenience sampling to obtain data from owners/managers and employees.

According to Hays, Liu, & Kapteyn (2015), sampling methods need to be systematic in order to the results to valid implications from the population. In this study, the researcher used random sampling and considered all the available participants then, listed the participants living within the city, regardless of whether they have used e-commerce platform before. The enterprise leaders helped me in sending the link of the survey to the customers living in the city and who had transacted with the enterprise or other vendors. In this study, the researcher also considered using purposive sampling among the owners/managers of the SMEs or the management. It incorporated choosing the members based on specific features that meet this type of sampling (Lavrakas, 2008).

Etikan et al. (2016) pointed out that researchers should utilize convenience sampling when the populations are huge. The researcher began by creating trust with each participant and establishing rapport with them. And after gaining their confidence by opening to them about the study's intended goal. The researcher also strengthened the confidence by assuring the participants that their information will remain anonymous and confidential in accordance with the University's review board standards. It was further facilitated by a businessman in Amman who deals with electronics.

The businessman owns an e-commerce platform dealing with car accessories and electronic equipment. The businessman’s database contains details of consumers that had purchased a least once from the business including their names, numbers, and emails. With his help, we distributed

a link to the web-based survey to the customers living in the city. The enterprise's IT leaders helped send personal invitations for taking one online survey, that would play a vital function in uplifting the e-commerce state in Jordan. In addition, as part of developing rapport with each participant, the researcher sent a separate email outlining the study's scope and objective. The participants were aware that they were granted the freedom to stop the exercise at any time.

For the managers, the sample population was selected on an unbiased purposive sampling technique basis. According to Cooper and Emory (2011), purposive sampling techniques are best suited in cases where it is hard to identify the participants. In this technique, the initial stage involves discovering the population through non-probabilistic means. Following this procedure, the researcher was able to obtain respondents who qualify for the interview. Steer (2015) suggests that the purposive sampling method is a common technique which been vastly used in business research. Several researchers have adopted this method, such as Roldán and Leal (2003) who used it during their research on Spanish organizations. From an identified organization with technology and using the purposive sampling technique, the researcher targeted 31 SMEs operating within the city. In the case of employees, purposive sampling was used which involved those working in the SMEs.

3.3.3 Sample Size

Often, it is important to determine the suitable sample sizes in empirical study. Bartlett et al. (2001) stated that studies with inadequate sample sizes or excess sample size experience quality issues during the research. However, most researchers suggest that the large sample sizes, reduce the probability of producing errors during generalization of the findings (Creswell, 2012). The sample size of consumers comprised 95 participants. The city's consumer population is large enough to reach the least number of respondents needed for answering the surveys. The eligibility criteria used to select the participants involved consumers living within the city and were literate

in English. The study also comprised 31 managers. The sample of 30 questionnaires complied with the least number of participants which is recommended and required for statistical inference purposes as well as qualitative studies. The employees' sample comprised 40 participants.

3.3.4 Data Quality

The verification of data quality is important before proceeding to data analysis and findings generalization as it ensures data consistency as well as realigning the survey concept to the objectives. Quality of data comprises reliability and validity criteria. The following sections point out the two criteria for determining data quality.

3.3.41 Reliability

Reliability is the degree to which experiments, tests, or measurement procedures would lead to similar results in repeated trials (Carmines and Zeller, 1979, p.11). It implies the stability and consistency of the scale in the research are guaranteed. Therefore, reliability plays an important role in ensuring that the data collected has minimal or no errors given that the measurements are highly dependable (Bryman (2012).

The study employed Cronbach's alpha technique in checking the data's reliability, as it is regarded as the frequently used and suitable method for determining how homogenous a scale is with respect to the study's constructs (Cresswell, 2012). Also, the composite reliability technique was used in the research in verifying how reliable the items were before embarking on the research.

3.3.42 Validity

Validity is defined as the extent to which the measuring equipment serves the right purpose (Carmines and Zeller, 1979, p.17). Basically, validity revolves around the ability of the instrument

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to measure what it is purposed to measure. In this study, the validity was based on the examination of both content and construct validities.

The classification of validity falls into internal and external validity (Sekaran and Bougie, 2013). Internal validity is "the question of the veracity of the cause-and-effect relationship" (Sekaran and Bougie, 2013: 225); while external validity is the "generalizability of findings beyond the focus of the study" (Easterby-Smith et al., 2012: 45).

Moreover, a triangulation research strategy was also carried out in this study. This method of research is generally sought when various sources of data exist and there is a requirement to guarantee that the research conclusions deducted from the data analysis process are as inclusive and precise as possible. Triangulation is additionally beneficial in determining areas of the research that require more intensive study that will eventually result in the betterment of research results and the greater assurance of their validity and precision. There are four different types of triangulation:

- Theory triangulation: This type is predicated on resorting to more than one theoretical perspective in the investigation conducted.
- Investigator triangulation: This type relies on more than one investigator for the purpose of research and data collection.
- Methodological triangulation: This includes the utilization of multiple data collection techniques, such as observations, interviews, and surveys.
- Data triangulation: This type of triangulation consists of information about people, time, and space.

The state of e-commerce in Jordan is a subject that has not been thoroughly researched or investigated. (Masarweh, Al-Qaisi, Al-Masaeed, & Hunaiti, 2016), specifically in regard to SMEs. Hence, for the purpose of tackling this subject and ensuring a trustworthy and valid investigation, two methods of triangulation will be concentrated on. The first method will be methodological

triangulation which as mentioned relies on multiple sources of data collection; interviews for owners/managers, questionnaires for employees and clients as well as secondary data collection methods. The data gathered will then be compared and exemplified. The second method of triangulation that will be resorted to is the data triangulation method, which will include the collection of data from the different individuals that are concerned with this research.

3.3.5 Accessibility Issues

Accessibility is among the major issues in studies, particularly specific for the literature review. It was difficult locating the free best and most reliable sources from the internet which specifically address e-commerce in Jordan; the resources were limited due to that the researcher had to purchase some of the relevant research materials to develop an insight into e-commerce in Jordan, also encountered problems when collecting data from the respondents. Given the current COVID-19 pandemic, it was difficult to get access to the SMEs, as most owners looked forward to reducing personal interactions. Another accessibility issue is that a lot of SMEs in Jordan have a trust issue with sharing their information, as most of the contacted SMEs declined the researcher request to participate in the survey.

3.3.6 Limitation

The study involved online questionnaires as one of the techniques for collecting data from the employees and customers. This technique bears multiple downsides; it is related to the risk that the questionnaires may not be completed by the right persons. However, the researcher was able to minimize such sending questionnaires directly to the respondent's personal emails with the help of the SME owners. Although there are chances, They may not have been completed by the correct people, however, the examiner was required to acknowledge the answered questionnaires in good faith. Structured telephone interviews, in addition to the online questionnaire, were used in this

study. Additionally, various flaws in the use of telephone interviews have been identified. For instance, the individuals lacking a telephone obviously cannot be interviewed. Moreover, challenges are encountered among those who have hearing impairments. The researcher fails to have a view of a sign given by the respondent's face or non-verbal cues. Also, it may prove to be difficult when asking respondents sensitive questions through the telephone, since one could not see the reaction. Even though this method had several drawbacks, it was still used in the study.

3.3.7 Instrumentation

The questions used in the questionnaire were based on TAM framework; the work of Davis (1989), which was implemented as an online survey through the Free Online survey website. The instrument involved measurement scales for PEOU and PU. It is comprised of three sections. Section I involves demographic questions and questions related to experience. Section II entails the PU questions while Section III involves PEOU and intention to adopt. With respect to PU and PEOU constructs, they entailed a 7-point Likert-type scale, which ranged from 1 (implying strongly disagree) to 7 (Implying strongly agree). Davis (1989) employed the TAM for examining the extent to which an individual would enhance to use technology with respect to the ease of performance of these technologies.

In the case of interviews applicable to managers, they also consisted of three parts. Section 1 pointed out the demographic information, experience, and qualitative questions. Section 2 dealt with questions concerning the PU. During the interview, the respondents were asked to rate how much they agreed or disagreed with each of the four PU statements. Each participant's response was associated with a number ranging between 1 and 7, denoting strongly disagree and agree respectively. The questions in Section II were based on a Likert 7-point scale, as the respondents indicated how useful they perceived e-commerce in their business.

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Also, in section III, the participants needed to show how much they agreed or disagreed with the five statements in which four were in regard to their perception of the usefulness and how easy they thought was in their businesses on a scale model with strongly agree (1) and strongly disagree (7). This section involved PEOU and PU of e-commerce in the interviewee's organization. The researcher also employed a 7-point Likert-type scale statement for the intention to use (I) construct. The statement was adapted from Davis (1989) statements; however, the researcher employed strongly agree and strongly disagree scales. Interviewees were asked to indicate how much they agreed or disagreed with the statements, centered on predicting future use. Likewise, in PU, and PEOU statements, also necessary modifications had to be done on the questions to ensure their relevance with respect to this study.

As mentioned, the researcher modified the TAM survey to ensure it relates to the context of e-commerce, while considering e-commerce as a platform that eases or enhances the performance of the users. Researchers can alter TAM survey so that it fits their needs during the research process and indicate the intention of consumers towards e-commerce adoption (Lee et al., 2017). The adjustments to the survey encompassed replacing the references to consumers' intent to adopt e-commerce. With respect to previous research, the PEOU and PU constructs were measured as independent variables and the Intention towards e-commerce adoption as a dependent variable (Hidayat-ur-Rehman et al., 2016). TAM was considered with respect to its reliability. Reliability entails how consistent an instrument is when it comes to producing similar results in repeated tests (Fink, 2016). The framework was found to be reliable in measuring the correlation of PU, PEOU, and Intention towards adopting e-commerce.

Davis employed Cronbach's alpha to create and validate the measuring scale. Similarly, several studies have relied on it to determine the internal consistency and reliability of participant answers (Vaske et al., 2017). The Cronbach's alpha formula revealed that PU had reliability of.97 and PEOU had a reliability of.93 (Davis, 1989). A coefficient of.70 or above is generally regarded

as adequate by researchers (Lo et al., 2014). The researcher also employed Cronbach's alpha to assess the instrument's reliability in this academic research. Validity is also crucial in research since it shows whether or not an instrument can measure the concepts being studied (Bryman, 2016).

The goal of this research was to determine the relationship between the independent variables (PU and PEOU) and consumers' intention towards e-commerce. As a result, the components provided useful information for determining the perceived ease-of-use and Perceived-usefulness of an e-commerce platform. Basically, PU is related to users' perceptions concerning the impact of the technology on their performance while PEOU is related to how they view the technology to be simple or easy when incorporating it into their operations (Davis, 1989).

The researcher needed to make sure that the survey questions are designed in accordance with the research questions, as well as the variables being measured. The first TAM variable, PU, corresponds to the TAM Survey Instrument's Section II, questions. The TAM variable PEOU corresponds to the TAM Survey Instrument's Section III questions. The study's questions have been created based on a thorough literature analysis and TAM research that backs up the instrument's validity.

3.3.8 Questionnaire Development

When collecting data from employees and customers, self-administered email surveys using questionnaires was considered suitable for this study due to various reasons; little expenses and the ability to collect a large amount sample. Also, with this type of survey, it is convenient for the participants to describe their attitudes, beliefs, and behaviors concerning the desired topic, especially the adoption of technology. Structured interviews were considered when collecting data among the managers due to multiple reasons. The manager is usually busy individuals which

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mostly proves difficult to allocate a lot of time to tasks that are perceived not directly beneficial to the organization.

The questionnaire used in this study is attributed to the literature review and proposed conceptual framework upon which the research is based. It is made up of three sections. The first section involves general information concerning the respondents. The second and the third sections address the factors; perceived ease of use and perceived usefulness as well as intent for adopting e-commerce.

3.3.9 Questionnaire Design

A good questionnaire allows one to easily answer the questions, which in this case, minimizes the burden on participants. On the other hand, poor questionnaire design implies inadequate research conclusions, which negates the advantage of obtaining answers with the researcher's presence (Walliman, 2006)

Creswell (2003) points out that researchers develop questionnaires to evaluate attitudes in a variety of social situations, measure perceptions of vast social and political issues, and explore various demographic changes. As a result, large samples become feasible, increasing the chance of showing statistically significant results, even when the research involves multiple variables. Standardized surveys ensure uniformity during the collection, interpretation, and comparison of data from different groups, interpreted, and compared (Creswell, 2003).; Babbie, 2004).

It is necessary for researchers to measure and design questionnaires during any study. Researchers need to be observant when designing, drafting, and reviewing questions and questionnaire layouts. Pilot tests are of essence for the purposes of ensuring that the questionnaire format is correct and that participants cannot find difficulties when it comes to understanding the topics as well as questions (Bruce et al., 2002). Sanders et al. (2012) pointed out that a well-structured questionnaire can maximize the responding rate and effectiveness, as well as the

reliability of the collected data. This research questionnaire comprises 3 sections with specific questions in which the content, length, and clarity of the questions are standardized. All survey questions were crafted and modified in a careful manner to attain a high response rate. A description of the questionnaire was provided to make sure the participants' responses were as accurate as possible.

The layout of the questionnaire is an important aspect of the questionnaire as it maximizes the number of participants willing to take part in the survey (Bell et al. (2015). Hence, the layout of the questionnaire was crafted in such a way that it could be easy for participants to read. Moreover, in the case of the online surveys, text and colored templates were designed to be attractive with the sole aim of encouraging the participants to complete the questionnaire. Since long questionnaires can have a negative impact on the response rate, it was ensured that the time taken to complete the questionnaire should not exceed ten minutes.

3.4 Data Collection Technique

The research employed web-based self-administered structured surveys for collecting data from the employees and customers, and telephone interviews among the managers. A couple of benefits are realized with surveys, such as low costs, minimized bias, and speedy data collection (Rowley, 2014). Moreover, web-based questionnaires reduce the time taken between data collection and analysis as the research only transfers the data from the website directly to a database (O'Brien et al., 2016). However, the drawback is that since the interviewer is absent, the risk of missing data increases as the researcher fails to recognize the respondents' ability to understand the questions, which leads to lower number of responses (Cameron, 2016). The researcher, therefore, used telephone interviews to balance the merits and drawbacks as well as extract qualitative responses from the managers.

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The web-based survey has been applicable in various research-based on TAM framework (Hidayatur Rehman et al., 2016). After approval, the web-based questionnaires have been sent via emails so as to gather data from various participants. For purposes of best participation, the researcher focused the data collection among participants living in the main city in Jordan. Within the survey tool, the researcher also included participant consent, an introduction as well as an invitation for participants to answer the questionnaires. The period of answering the questions was estimated to be 10 minutes or less. When noticing any delay, the researcher made sure to send emails, reminding the participants to participate by providing their responses. The time for data collection has been extended many times till the minimum number of responses received.

For the employees, the survey was conducted among 40 participants. The respondents were asked to respond to questions on a seven-point Likert scale, with 1 indicating "strongly disagree" and 7 indicating "strongly agree." The questionnaire items were lifted from prior studies on TAM which looked into the use of technology by SMEs and were adapted to fit into the investigation of e-commerce. The first (Part A) of the questionnaire covered demographic data, experience, and qualitative research. The second part (Parte B) focused on PU while Part C comprised of PEOU. For purposes of validity, the research ensured that the questionnaire items met the study's objectives and examined the parameter that was supposed to be measured.

3.4.1 Pilot Study

The pilot study is a vital practice in the research process since it improves the efficiency and accuracy of data gathered. According to Bell et al. (2015), research can conduct the pilot study on a portion of the target respondents and use their feedback to evaluate the clarity of the questions as well as their readability. However, there is no specific number agreed upon by the researchers that can be used to carry out the research. For instance, Baker (1994) proposed ten to twenty percent of the research sample while Saunders et al. (2012) insisted on ten respondents.

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The pilot study purposed:

- To estimate the time respondents would take to fill in the questionnaire or respond to the questions.
- To determine if participants will find any difficulties while answering the questions.
- To test how adequate the language is in the research.
- To estimate the reliability of the questions.
- To determine the clarity of the questions.
- To determine whether the questionnaire's outline was clear and attractive.

The respondents have been informed that it was a test version of the questionnaires, asking to be crucial and provide feedback unclear questions. They were also needed to point out the wording while providing opinions with respect to the questionnaires' outline, completion time as well as other comments and suggestions that would help to improve it. In this regard, ten participated in the survey and gave opinions.

The results have been used for amending the number of questions, layout as well as length of the questionnaires. With respect to wording and clarity, some questions were reworded to make sure they were clear, and the respondents could easily understand. For example, the majority of respondents did not comprehend the meaning of e-commerce and could not differentiate it from traditional commerce hence, it was clarified. In the case of layout, the font size of the questionnaire was changed from Times New Roman-10 to Times New Roman-12, as some participants claimed it was too small.

Concerning the questionnaire length, respondents took 15-20 minutes on average to complete it. Most proposed that they preferred if the number of pages was less. Upon that, the researcher had to redesign the questionnaire and print into lesser A4 pages. After receiving

feedback from the pilot study, a few amendments have been made and the questionnaire's final version was created and utilized to collect data from respondents. The versions for customers, employees, and owner/managers' questionnaires are indicated in Appendix 1, Appendix 2, and Appendix 3 respectively.

3.4.2 Ethical Research

Polonsky and Waller (2005) pointed out that ethics in the research is necessary particularly in a study involving communication with individuals. It plays a role in the way one conducts the research when using any research method such as a survey. During the research involving communication, it is important for the research to avoid offensive language while talking to the respondents. The researcher has adhered to several agreed ethical research standards for purposes of avoiding any offensive activity against the participants.

Also, among the important ethical standards which require strict adherence involves the preservation of confidentiality as well as maintaining high levels of credibility. During the research, the researcher ensured to remain credible while abiding by the regulations to ensure the rights and safety of the respondents are respected. Encryption software was used for securing the collected data. The acquired data was encrypted and then stored in a portable device using encryption software. The researcher followed the review board's requirements as set forth by the university.

With respect to the research protocols, academic researchers, observe the ethical standards laid down by the institution. One of them involves respect for persons, in which the researcher must treat every participant as an independent agent eligible for protection. Another ethical standard involves beneficence, which requires researchers to treat participants ethically by ensuring their safety and preventing harm. Apart from respect and beneficence, the researcher must

observe justice, by treating each participant in a fair and equal manner (U.S. Department of Health and Human Services, 2016).

3.4.3 Data Analysis

In this research, data analysis was conducted using both quantitative and qualitative data. Data analysis using the quantitative data involve application of different statistical techniques to explain the data trends. Data analysis may involve various forms, including t-tests, ANOVA, correlational analysis, and regression analysis. T-tests carry out a comparison of the means of two separate groups of data to evaluate their level of statistical significance. Therefore, T-tests check if data sets possess different means, SD, and skewness. Although ANOVA test is the same as the T-test since it carries out a comparison of the means of different groups, ANOVA permits analysis of several groups and not just two groups of data like T-Tests. This step is very important so that relationship between two variables can be established for further analysis of correlation. Whenever there is an increase in one variable, the same happens to the other variable as well and vice versa. Regression analysis and correlation are the same in that RA assess the relationship available between different variables. To analyze the quantitative data, multiple linear regression was applied while the thematic method was used in the analysis of the qualitative data used in the research. Based on Bryman (2016), multiple linear regression analysis remains the most suitable for the research that has more than two independent variables towards prediction with the dependent variable. To analyze the quantitative data and establish the link between PEOU, and PU of e-commerce channels, and the willingness of the users to use the e-commerce platforms, the quantitative correlational design was used in conjunction with multiple linear regression analysis. The researcher used SPSS to analyze the quantitative as the hypothesis played a role in addressing the research questions and reported the findings according to the theoretical framework adopted in this research.

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The process of qualitative analysis was based on the thematic method. The main qualitative analysis methods include qualitative content analysis, discourse analysis, and thematic analysis. Content analysis on its part conducts an evaluation of patterns found in given content (Jansen, 2021). The central focus of content analysis is some particular timelines and ignores the happenings of before or after. Discourse analysis entails the analysis of a language in its social context. Discourse analysis is done until the point of saturation and thus it is time consuming. On the other hand, thematic analysis takes into consideration the similarities in groups of data and therefore thorough review of the data, themes that crop up repeatedly are identified. Thematic analysis was perfect for this study as it helps find out about respondents' experiences, views, and opinions. With thematic analysis, it is easier to analyze reviews of the respondents to find out what they think about the adoption (Jansen, 2021).

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CHAPTER FOUR

4.0 DATA ANALYSIS

4.1 Data Analysis Overview

The study's primary purpose was the evaluation of the link between PEOU, PU, and consumers' willingness to adopt e-commerce. With respect to TAM framework, the question that is centered in addressing the relationship between the independent variables and the dependent variable.

To analyze the collected data, and answer the research questions appropriately, the researcher used SPSS. The quantitative data were presented in a logical and coherent manner in accordance with the research's theoretical framework.

Researchers have used partial least squares (Lombardo, & Durand, 2017; Hess et al., 2014), Pearson's correlation (Bryman, 2016), and multiple linear regression analysis (Jung & Lee, 2016) to investigate the correlation between variables in previous studies. The analysis of variance is another tool that is common in TAM research (Magsamen-Conrad et al.,2015). Researchers have also employed descriptive as well as path analysis in other works (Thakur & Srivastava, 2015).

Among various analysis techniques, multiple linear regression analysis stands out as an appropriate one when the research involves two or more independent variables as well as when its purpose is predicting how they relate with the dependent variable (Tan & Lau., 2016). Partial least squares may be suitable in modeling latent variables (Dijkstra & Henseler, 2015). Hence, partial least squares were not applied in this study. For the purpose of this research, multiple linear regression analysis is the ideal choice due to its overarching purpose in the examination of linear correlation among the PU and PEOU and the customers' intents.

Moreover, there exist other statistical analysis methods including discriminant analysis, factor analysis, and bivariate linear regression. Discriminant analysis classifies the participants

into groups (Ivashchenko et al., 2016). Also, according to Ivashchenko et al., (2016) research that entails the examination of two variables, must utilize the bivariate linear regression. However, this study involves more than two variables, that is, PU, PEOU, and Intention.

Researchers who use multiple linear regression analysis for analyzing databases the analysis on the assumptions regarding variables contained in the study. In cases where researchers fail to draw valid conclusions with respect to how the study variables interact, an error is likely to occur. For example, Auer, Reiner & Leal (2016) points out that a Type I error may occur if outlier or non-normality is ignored. A Type II error can also occur when an assumption concerning the rejection of a false null hypothesis is violated (Guerrero-Bosagna, 2016). Common assumptions that the researcher used in linear regression analysis are linearity, normality and homoscedasticity (Suki, 2015). To effectively identify the outliers, histogram and scatterplot of standardized residuals are used as visual inspection techniques. Hopkins and Ferguson (2014) point out that the assumption of normality denotes the normal distribution of variables. The insufficiency of the sample size is better indicated when normality is violated. Hence the researcher performed a visual inspection for purposes of testing this assumption. Also, the researcher resolved to bootstrap testing since McNown et al. (2018) pointed out that it is a useful technique in reducing the inconclusive inference possibilities.

The assumption of linearity is when it is projected that a dependent variable and the corresponding independent variable have a linear relationship (Hopkins & Ferguson, 2014). For purposes of assessing the linearity also a test has been performed for nonlinearity. For visual observations, the residual is plotted using the SPSS program. Moreover, according to Psaradakis and Vávra (2018), the skewness-kurtosis test is the most reliable at providing excellent overall performance when testing the normality assumption.

The assumption of measurement reliability relates to the consistency and reliability of the equipment that researchers use for measuring the variables (Leopold et al., 2015). Regarding

Davis (1989) study, Cronbach's alpha formula suggested that PU had a 0.97 reliability while PEOU had a 0.93 dependability while formulating TAM. Many researchers who conducted studies with respect to TAM framework also based their test for the reliability on Cronbach's alpha (Raman). Similarly, the researcher also used Cronbach's alpha for looking into reliability of the measurements in this study.

In the case of homoscedasticity assumption, it implies clarity with respect to the pattern of data distribution (Hopkins & Ferguson, 2014). The test of homoscedasticity is a recurrent difficulty in applied statistics (Chang, Pal, & Lin, 2017). Yang and Mathew (2018) remarked on the Bartlett test, which is a famous homoscedasticity test. According to Disatnik and Sivan (2016), researchers can examine homoscedasticity using a variety of statistical tests such as Durbin-Watson. The homoscedasticity condition was tested using the Durbin-Watson statistic, and the homoscedasticity was displayed using a scatter plot and a residuals plot.

Disatnik and Sivan (2016) pointed out that when the correlation between a predictor variable and the other is a high then assumption of multicollinearity arises. By examining the strong pairwise correlation between two constructs, a researcher can uncover potential multicollinearity issues (Hopkins & Ferguson, 2014). According to Yu et al. (2015), the large the sample size, the less degree of multicollinearity. The variation influence factor (VIF) is another technique for dealing with multicollinearity. Hopkins and Ferguson (2014) state that a number ranging from 5 to 10 is an indication of the probability of multicollinearity problem. A VIF number greater than 10 also indicates a multicollinearity issue (Williams et al., 2015). SPSS is employed by several researchers for calculating VIF figures (Hopkins & Ferguson, 2014). Through the use of VIF values, the researcher was able to rule out the possibility of independent error terms.

To define the essential characteristics of the study, researchers such as Hidayatur Rehman et al. (2016) employed descriptive statistics derived by regression analysis. To offer an overview

of the data, sample, and representative score, the researcher utilized SPSS when generating descriptive statistics. Moreover, when calculating the probability (p-value), and again used the same program. The probability criteria, or alpha, are set at 0.05. Based on the study of four publications using TAM as the outcome measure, the researcher took the average impact size (f 2 =0.15) and calculated the medium effect size (Hidayatur Rehman et al., 2016; Disatnik & Sivan., 2016).

4.1.2 Data Coding

Coding involves the use of numbers or symbols to denote responses, enabling the researcher to divide the responses from the participants into lesser categories (Kothari, 2004, p. 123). It implies that in every type of response in the questionnaire, a particular code is assigned, which helps the research to convert it into a computer-recognizable form and facilitate further analysis (Saunders et al., 2012). For this research, the continuous response scale uses a pre-coding technique to assign a number to each question, where number the 1 means "strongly disagree" and the number 7 means “strongly agree". This is done on the closed-ended questions in the second and third parts of the questionnaire. Before entering the computer software, the researcher keyed the question into the coding scheme, then entered the collected data into SPSS and marked each variable with a code to illustrate them.

4.1.3 Data Cleaning and Screening

In this study, data cleaning and selection were performed prior to further statistical analysis for purposes of ensuring that the input data did not contain coding errors, missing data, or inappropriate responses. According to Leopold et al. (2015), it is necessary for researchers to employ a data cleaning process to guarantee or ensure that the data collected is accurate for analysis. Missing data occur in situations where the survey participants do not answer one or more

questions (Leopold et al., 2015). After collecting data from the survey, the researcher made sure that the information received was devoid of too many incomplete responses. There may be many reasons why the participants may fail to respond to the questions. For example, the respondent may forget to respond to the question or not know the answer or maybe ignorant of the subject or question (Bryman, 2016). Surveys with incomplete responses have been eliminated and resend additional surveys so as to attain the targeted number of participants.

Studies point out that the unit level and project level are the two types of missing data commonly experienced in the research process (Dong & Peng., 2013). The unit level is related to participants who did not fully take part in the survey or completely avoided answering the questionnaire, while the item level involves respondents who provide incomplete responses. There are two main reasons for the occurrence of the item level. First, the participants may not be willing to respond to more than one "sensitive" question, or the participant may be unable to complete part of the questionnaire due to a lack of information. Secondly, lack of time to complete the questionnaire may also contribute to missed responses (Saunders et al., 2012). Therefore, this research must solve the problem of missing data to avoid erroneous results in presenting research results, loss of statistical power during generalization. There are multiple approaches for addressing the missing data including list-wise deletion, pairwise-deletion, and Expectation-Maximization method (EM) (Dong and Peng 2013).

The researcher calculated the proportion of data that was missing prior to further statistical inferences being made. On average, the missing data was approximately 5.7% of all responses from the customer’s questionnaires and about 7% from the employees, and exclusion of this type of forms has been considered as unsuitable for this survey as it decreces the sample size, which may negatively impact the generalizability of data results. Even though is no consensus on the acceptable percentage of missing data in the relevant literature, many researchers point out that 10% is regarded as just acceptable (Bennett, 2001; Schlomer et al., 2010).

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The researcher used Expectation-Maximization approach (EM) for the replacement of the missing data values due to various reasons. The first reason is that the EM technique employs a recursive process that involves expectation stage as well as a maximizing step in this process. The missing and non-missing values are obtained using parameters in the expectation step. (such as means, variance), and where the missing values are substituted using the projected values by means of regression techniques. The maximum likelihood function is used to compute the projected scores of the missing values at the maximizing stage in order to acquire new values for parameters. With the expectation step, the process is repeated till confluence is achieved. Second, the EM gives an accurate and unbiased parameter projrction, making it suitable for exploratory factor analysis (Schlomer 2010).

4.2 Presentation of Findings

4.2.1 Customers

Quantitative correlational design, as well as multiple linear regression analysis, was used in analyzing the quantitative data to study the relationship between independent and dependent variables.

The null hypotheses were:

H1: The PU has no direct significant effect on consumers' acceptance of E-commerce by SMEs in Jordan.

H2: The PEOU has no direct significant effect on consumers' acceptance of E-commerce by SMEs in Jordan.

The researcher gathered data through a self-administered structured web survey to answer the study question. To guarantee maximum participation, the survey link was emailed to the respondents. The survey has been based on people living within the main city in Jordan. A total of

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a hundred and forty-six eligible participants received an email inviting them to take part in the study. Follow-up reminders were sent to a select group of participants.

In the case of customers, 101 completed questionnaires have been received but had to exclude six of them due to a high percentage of missing data. The remaining 95 complete questionnaires were used for analysis.

4.2.2 Customers' Characteristics

The section below shows customer's demographics.

Age

Age Range	Number of Responses
18-20	4
21-34	52
35-64	39
Above 64	0
Total	95

Table 4.1.1: Age Range of Customers

Gender

Gender	Responses
Male	29
Female	66
Total	95

Table 4.1.2: Customer Gender

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Education Level

Education level	Responses
High School	9
Undergraduate	76
Postgraduate	10
Total	95

Table 4.1.3: Customers Education Level

4.2.3 Survey Results

The section below describes the results obtained from the survey questionnaire.

4.2.31 Customer Technology and E-commerce Experience.

Table 4.1.4 shows customers' experience with respect to using technology. The results indicate that 62% use technology very much, 36% use it from time to time, 2% rarely use it. None of the participants has never used technology. Table 4.1.5 displays the customers' statistics regarding e-commerce use. The results show that 48% have used e-commerce while 52% have never used it.

Frequency of Use	**Responses**	**Percent**
I use it very much	59	62
I use it from time to time	34	36

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I rarely use it	2	2
I never used before	0	0
Total	95	100

Table 4.1.4 Frequency of Technology Usage

Category	Participants	Percent
Yes (used)	45	48
No (Not Used)	50	52
Total	95	100

Table 4.1.5 Participants who used E-commerce before

4.2.32 Level of E-commerce

Table 4.1.6 shows the results of participants when asked about their opinion about e-commerce in Jordan. From the responses, 13% feel it is excellent, 37% think it is very good, 41% feel it is 'good', and 9% said it is poor.

Level of E-commerce	Responses	Percent
Excellent	12	13
Very Good	35	37

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Good	39	41
Poor	9	9
Total	95	100

Table 4.1.6: Level of E-commerce.

4.2.33: Traditional versus E-commerce

Table 4.1.7 shows customers responses when asked their choice between e-commerce and traditional e-commerce. The percentage of those who preferred e-commerce were 61% while 36% preferred traditional e-commerce.

Traditional/E-commerce	Participants	Percent
Would prefer E-commerce	61	64
Would prefer traditional commerce	34	36
Total	95	100

Table 4.1.7 Traditional and E-commerce

4.2.34: Reasons behind adoption and non-adoption

Table 4.1.8 indicates the frequencies of customers' reasons for using e-commerce. The comparison of prices was selected '42 times', Increase marketplaces by accessing a wide range of

products, 38; decrease cost and Increase savings, 37; ease to use, 33; increase speed and accuracy which can obtain information, 13; reduce information search and transaction cost, 11; improve communication/quality information, 9. Table 4.1.9 shows the frequency of reasons for not using e-commerce; Lack of trust with the sources, 37; limited financial resources, 19; internet access problems, 3; additional charges, 17; poor user experience, 19; limited online resources in the country, 13; high taxation and customs when shopping from abroad sources, 12; security concerns, 36; concerns with delivery options, 35.

Category	**Frequency**
Decrease cost and Increase savings	37
Increase marketplaces by accessing a wide range of markets	38
Improve communication/quality information	9
Reduce information search and transaction cost	11
Ease to use	33
Increase speed and accuracy which can obtain information	13
Comparison of prices	42

Table 4.1.8 Reasons for using E-commerce

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Category	Frequency
Lack of trust with the sources	43
Limited financial resources	19
Internet access problems	3
Additional charges	17
Poor user experience	19
Limited online resources in the country	13
High taxation and customs when shopping from abroad sources	12
Security concerns	36
Concerns with delivery options	35

Table 4.1.9 Reasons for not using E-commerce

4.2.4 Descriptive Statistics: Customers

A Likert-type scale was used to create the survey questions. The scale's range was 1-7 where 1stood for 'strongly disagree') while 7-was 'strongly agree'. After adequate data was collected for analysis, the dependent variable was subjected to post hoc power analysis and yield

power of 0.92, resulting in a sample size of 95. Table 4.2 shows the results of the post hoc power analysis for the dependent variable.

Based on a correlation coefficient of 0.15 for customers' intention to adopt e-commerce and an effect size of 0.15.

Parameters	**Values**
Analysis Input	
Effect-size f^2	0.15
α err prob	0.05
Total sample-size	95
No. of predictor	2
Analysis output	
Non-centrally parameter λ	14.25
Critical F	3.0954328
Numerator df	2
Denominator df	92
Power (1-β err prob)	0.9241740

Table 4.2: Post-hoc Power Analysis

The effect-size of 0.15 determined in G*Power with respect to the correlation coefficient the dependent variable (consumers' intention) of .917.

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	N	Minimum	Maximum	Mean	Std. Deviation
PU	95	1.00	7.00	5.3018	1.34047
PEOU	95	1.50	7.00	5.5211	1.29790
CI	95	2.00	7.00	5.7105	1.22383

Table 4.2.1: Descriptive Statistics: PU, PEOU, and I

Note PU means perceived usefulness, PEOU means perceived ease of use and CI means consumers 'intention.

4.2.5 Test of Assumptions

Below is as presentation containing the results of normality, linearity, homoscedasticity, and multicollinearity.

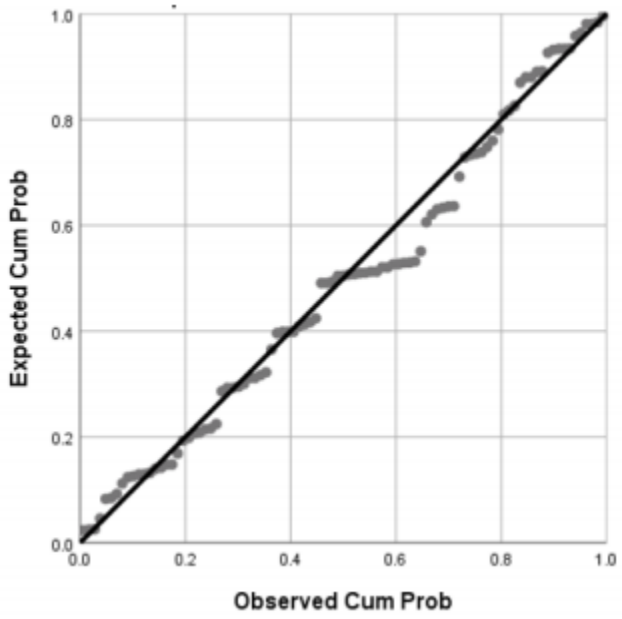


Figure 4.1: Normal-probability plot of regression standardized-residuals

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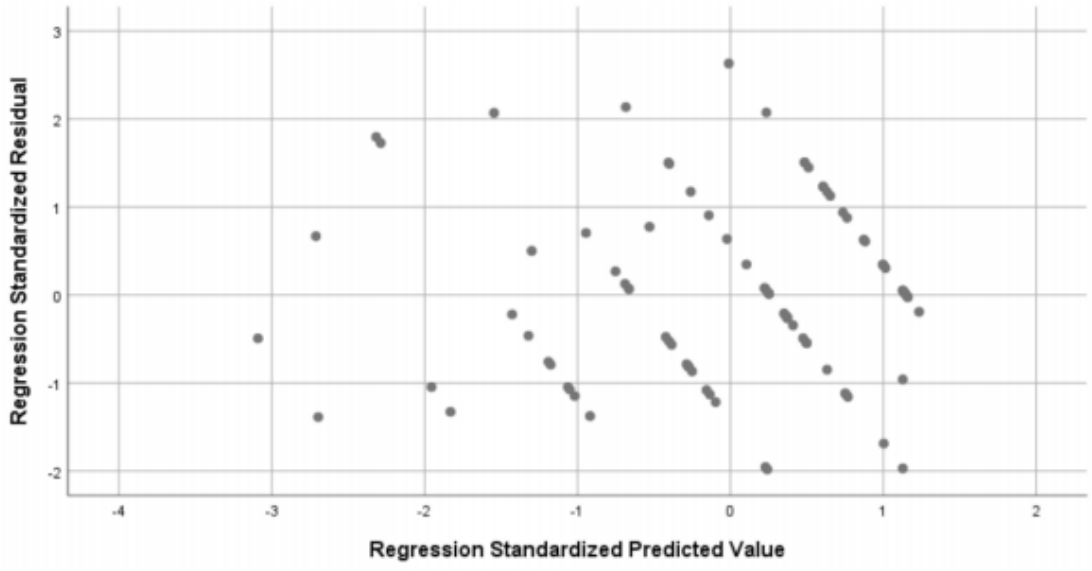


Figure 4.2: Scatterplot of the standardized-residuals.

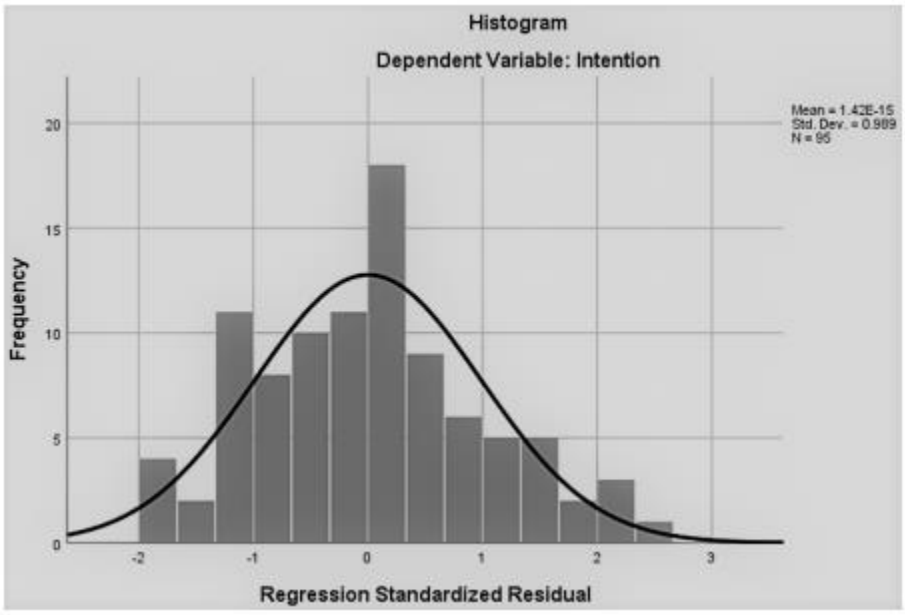


Figure 4.3: Histogram of the regression standardized residual.The outliers, normality, linearity, homoscedasticity, and residuals

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Researchers pointed out that without properly managing the outliers, the results may end up being false (Leys et al., 2018). The researcher used a visual inspection approach that included a histogram and scatterplot of the standardized residuals to examine for normality, linearity, and homoscedasticity that form solid foundation for identification of outliers. To easily detect the nonlinearity, Hopkins and Ferguson (2014) suggest that probability plot of the function must be examined. The probability plot of the residuals (shown in figure 4.1), the scatterplot (shown in figure 4.2), and the histogram of the standardized residuals (shown in figure 4.3) were all evaluated. A few values of the derived outcome variable deviated from normality.

Bernal-vasquez et al. (2016) pointed out that bootstrapping approach could be used for evaluating the outliers. Therefore, bootstrapping analysis has been considered for examining the assumption violation (s). The bootstrap regression involved about two thousand random samples to ensure guarantee the accuracy of the estimates of the variables. In evaluating the assumption violations, the researcher employed a 95 percent confidence interval and generated p-values to eliminate possibilities of any normality-related assumptions with respect to the distribution in the typical linear regression. No single and major violations of any of the assumptions were discovered during the examinations. The propensity of the points indicated that there were violations that were absent, such as the normality. The scatterplot of the standardized residuals (Figure 4.1) revealed no consistent pattern that supported the assumptions.

Also, an examination of the normality issue was done through analysis of the skewness and kurtosis values of the data. McAlevey and Stent, 2018 pointed out that when kurtosis is high, it implies that the distribution is accurate. According to Gravetter and Wallnau (2014), skewness and kurtosis limit values of ±2 from zero indicate that the data is regularly distributed. After evaluating the normality test findings, the particular variable values of skewness and kurtosis test result were within the stated norms of normalcy. As shown in Table 4.2.2, the skewness test values ranged from -1.187 to -.930, while the kurtosis test values ranged from.512 to 1.407 for all variables. Also,

the researcher deemed the information gathered to be normal, therefore transformation was not required. With a sample size of 95 individuals, there is a chance that multiple linear regression analysis will slightly deviate from the normality assumption, which is acceptable in this study. The Durbin-Watson test has been utilized and looked at the residual scatter plot to verify the homoscedasticity assumption. Table 4.2.3 shows that the Durbin-Watson value of 1.905 was above the limit of 1.587 and lower than the threshold value of 2. As a result, the homoscedasticity assumption is correct.

	PU	PEOU	CI
N Valid	95	95	95
Missing	0	0	0
Skewness	-1.187	-1.070	-.930
Std. Error of Skewness	.247	.247	.247
Kurtosis	1.407	.780	.512
Std. Error of Kurtosis	.490	.490	.490

Table 4.2.2: Descriptive Statistics: Skewness-values and Kurtosis-values

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate	Durbin-Watson
1	0.917[a]	0.840	0.837	0.49471	1.905

Predictors: (Constant), PEOU, PU b. Dependent Variable: Intention

Table 4.2.3: Durbin-Watson value

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Multicollinearity

For multicollinearity assumption to exist, two predictor variables must indicate a high correlation (Disatnik & Sivan, 2016; Williams et al., 2015). Often, the SPSS® has been used in calculating VIF values (Hopkins & Ferguson, 2014). To ensure that there was no multicollinearity assumption, the researcher had to calculate and examine the values of the independent variables' VIFs. Hopkins and Ferguson (2014), point out that when the VIFs values range between 5 and 10, it is an indication that multicollinearity issues exist. Moreover, VIF values exceed 10 points at a multicollinearity problem (Williams et al., 2015). After calculating it has been found that the values were below the conservative threshold of 5, hence implying that multicollinearity was absent in this study. The calculated VIF values (which was 1.765 and below the threshold value) are indicated in Table 4.2.4. The predictors were below 0.5, which shows the absence of a multicollinearity problem.

Model	Unstandardized Coefficients		Standardized Coefficients	T	sig	95.0% Confidence Interval for B		Collinearity	Statistics
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
I Constant	0.971	0.23		4.10	.00	.501	1.44		
		6		8	0		0		

`

PU	-	0.05	-.22	-.395	.69	-.120	0.80	.567	1.76
	0.020	1			4				5
PEOU	0.878	0.05	0.931	16.8	.00	0.774	.981	0.567	1.76
		2		3	0				5

i) PU = perceived usefulness, PEOU= perceived ease of use. a. Dependent Variable: CI: consumers 'intention.

Table 4.2.4: Correlations Coefficients Among Study Predictors Variables

4.2.6 Inferential Results

The PEOU and PU as independent variables were examined to check any possible prediction of the intent of the consumer to adopt e-commerce by use of standard multiple linear regression where the significance level is 0.05. Prior to the regression test, the researcher checked for normality, residual independence, linearity, homoscedasticity, and multicollinearity to see if the assumptions of multiple linear regression analysis were met. The findings revealed no deviations from the assumptions. The model was statistically significant for predicting consumers' intention towards e-commerce adoption, F (2, 92) = 241.630, p.001, accounting for 84 percent of the variance in consumers' intent to adopt online shopping (R2 =.840, adjusted R2 =.837), as indicated in the Tables. The PEOU and PU of e-commerce platforms stood for 84 percent of the consumers' intention variance towards using e-commerce, according to the R2 of.842. The

researcher, therefore, rejected the null hypothesis. PEOU had a p-value of less than 0.05. The p-value for PU, on the other hand, was greater than 0.05. As a result, the PU variable was found a non-significant predictor of consumers' intention to adopt e-commerce. Conversely, PEOU variable, was a statistically significant predictor of consumers' intention towards e-commerce adoption. PEOU (B=.878) and customers' intention to utilize the e-commerce had a positive slope, implying that an increase in the PEOU constructs resulted in a considerable increase in the intention to adopt online shopping.

Model	Sum of squares	Df	Mean Square	F	Sig.
Regression	118.273	2	59.137	241.63	0.000[b]
Residual	22.516	92	0.245		
Total	140.789	94			

Table 4.2.5: ANOVA with the Dependent Variable Behavioral-Intention

(a. Dependent Variable: CI: consumers' intention)

(b. Predictors: (Constant), PEOU=perceived ease of use, PU=perceived usefulness)

		CI	PU	PEOU
CI	Pearson Correlation 1 .591** .916** Sig. (2-tailed)	1	0.591** .000	0.916** .000
	N	95	95	95

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PU	Pearson Correlation 1 .591** .916** Sig. (2-tailed)	0.591** .000	1	0.658** .000
	N	95	95	95
PEOU	Pearson Correlation 1 .591** .916** Sig. (2-tailed)	0.916** .000	0.658** .000	1
	N	95	95	95

**. Correlation is significant at the 0.01 level (2-tailed).

PU = perceived usefulness, PEOU= perceived ease of use. CI: consumers 'intention.

Table 4.2.6: Pearson's Correlations Coefficients

4.2.7 Summary

The study's aim was to evaluate how PEOU, as well as PU of e-commerce platforms, is related to consumers' intention towards adoption of online shopping. In this regard, standard multiple linear regression tests were conducted. Even though the study lacked serious violations with respect to the assumptions, the researcher considered carrying out bootstrapping test with 2000 samples and 95 percent confidence with an aim of addressing any possibilities of statistical assumption violation. TAM instrument has been verified with respect to previous studies, with

Cronbach alpha resulting 0.90 for PEOU and 0.89 for PU. Like in Davis (1989) studies, where Cronbach's alpha indicated a 0.97 reliability for PU and a 0.93 reliability for PEOU, the instrument was reliable. Also, several other studies were used in comparing the instruments' reliability regarding the Cronbach's values, such as Raman (2014) research which indicated acceptable results of 0.876 for PU and 0.879 for PEOU. Conclusively, perceive ease of use was the only construct of the TAM model that predicted consumers' intention for adopting online shopping, $F(2, 92) = 241.630$, $p < .001$, $R2 = .840$, adjusted $R2 = .837$. The multiple linear regression analysis results indicated showed that the model is significant.

4.3 Owners / Managers

4.3.1 Participant Demographics

Age Range	Number of Responses
18-20	0
21-34	5
35-64	26
Above 64	0
Total	31

Table 4.2.7: Age Range of Owners / managers

Gender	Responses
Male	23
Female	8
Total	31

Table 4.2.8: Owners / managers Gender

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Education level	Responses
High School	1
Undergraduate	28
Postgraduate	2
Total	31

Table 4.2.9: Owners / Managers Education Level

Number of Employees	**Number of SMEs**
Less than 51	24
51-150	6
151- 250	1

Table 4.3: Number of Employees

4.3.2 Results: Owners/Managers

4.3.21 Customer Technology and E-commerce Experience.

Table 4.3.1 shows owners' and managers' experience with respect to using technology. The results indicate that 61% use technology very much, 39% use it from time to time. None of the participants has ever used technology or rarely uses it. Table 7.3.2 displays the owners' and managers' statistics with regard to e-commerce use. The results show that 55% have used e-commerce while 45% have never used it.

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Frequency	Participants	Percent
I Use it very much	19	61
I use it from time to time	12	39
I rarely use it	0	0
I never used it	0	0
Total	31	100

Table 4.3.1: Frequency of Technology Usage

Category	Participants	Percent
Ever used E-commerce	17	55
Never Used E-commerce	14	45
Total	31	100

Table 4.3.2: Participants that Used E-commerce Before

4.3.22: Availability of website

Table 4.3.3 shows the availability of a website from owner/manager's responses, 41% indicated their organization has a website while 59 % indicated they do not have a website.

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Category	Participants	Percent
Yes (Has website)	14	41
No (lacks website)	17	59
Total	31	100

Table 4.3.3: Website Presence in the Company

4.3.23 Level of E-commerce

Table 4.3.4 shows the results of participants when asked about their opinion about e-commerce in Jordan. From the responses, 6% feel it is excellent, 39% think it is very good, 52% feel it is 'good', and 3% said it is poor.

Category	Participants	Percent
Excellent	2	6
Very good	12	39
Good	16	52
Poor	1	3

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Total	31	100

Table 4.3.4: Level of E-commerce

4.3.24 Reasons behind adoption and non-adoption

Table 4.3.5 indicates the frequencies of owners and managers' reasons for using e-commerce. The comparison of prices was selected '14 times', Increase marketplaces by accessing a wide range of products, 16; decrease cost and Increase savings, 6; ease to use, 15; increase speed and accuracy which can obtain information, 11; reduce information search and transaction cost, 4; improve communication/quality information, 8. Table 4.3.6 shows the frequency of reasons for not using e-commerce: Lack of trust with the sources, 6; Limited financial resources, 1; Internet access problems, 0; Additional charges, 1; Poor user experience, 5; Limited online resources in the country, 5; High taxation and customs when shopping from abroad sources, 7; Security concerns, 4; Concerns with delivery options, 7.

Category	**Frequency**
Decrease cost and Increase savings	6
Increase marketplaces by accessing a wide range of markets	16
Improve communication/quality information	8
Reduce information search and transaction cost	4
Ease to use	15
Increase speed and accuracy which can obtain information	11
Comparison of prices	14

Table 4.3.5: Reasons for using E-commerce

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Category	Frequency
Lack of trust with the sources	6
Limited financial resources	1
Internet access problems	0
Additional charges	1
Poor user experience	5
Limited online resources in the country	5
High taxation and customs when shopping from abroad sources	7
Security concerns	4
Concerns with delivery options	7

Table 4.3.6: Reasons for not using E-commerce

4.3.3 Descriptive Statistics: Owners/Managers

Also, in this study, calculations were done concerning the interrelations between the scale values to PU constructs and inter-correlations between the scale values to PEOU constructs, and the results tabulated in table 4.3.7.

Statement No. and text	1	2	3	4
In my job, using E-commerce allows me to do duties faster.	1			
Using E-commerce improves my				

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performance in my job.	0.581381	1		
Using the E-commerce makes it easier for me to do my job	0.625311	0.451258	1	
I find E-commerce to be useful in my job	0.324384	0.334883	0.439406	1

Table 4.3.7: **Intercorrelations between scale values to PU statements**

After substituting the values in the Cronbach's equation, coefficient alpha for PU was 0.80.

Statement No. and texts	1	2	3	4
Learning to operate E-commerce technology is easy for me.	1			
I find it easy to get E-commerce technology to do				

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what I want it to do.	0.122943	1		
I find E-commerce technology to be flexible to interact with	0.555738	0.065362	1	
Interacting with e-commerce is clear and understandable	0.320175	0.108040	0.423216	1

Table 4.3.8: Intercorrelations between scale values to PEOU statements

The calculation resulted to the coefficient alpha of PEOU =0.75.

The Cronbach alpha is known for measuring the extent to which a set of items (variables) measures a particular construct, simply termed as the measurement's reliability. As pointed out earlier in the customers' section, studies such as those of Davis (1989) study, used the Cronbach's alpha tests when looking into the reliability of TAM, which resulted to 0.98 for PU and 0.94 PEOU. Following his study with respect to TAM framework, other researchers indicated the measurement's reliability by conducting Cronbach's alpha test. In this study, Cronbach's alpha coefficient was 0.80 for PU and 0.75 for PEOU. The researcher considers the 0.75 value for PEOU as relatively low. However, the Cronbach's alpha value (0.80), for PU is considered as "just

acceptable." The values reflect some doubts on the measurement's reliability since relatively low values may predict that the data is multi-dimensional.

The researcher calculated the Spearman rank-order correlation coefficients (r) for PEOU and Intention to adopt e-commerce as well as for PU and intention to adopt e-commerce. The results indicated r=0.144 for PU and r=0.373. Such values are relatively lower when compared to Davis (1989) results. In his studies, the PU was correlated .63 with adoption in the first study and .85 in the second study. Also, PEOU was correlated .45 with adoption in the first study and .69 with adoption in the second study. However, the correlation in my study indicates 0.144 for PU-adoption and 0.0373 for PEOU-adoption. Looking at these values, it is clear that they are not consistent with Davis' results. Therefore, the low correlation values indicate that PU is not "significantly more strongly associated with usage than was the ease of use" (Davis, 1989). Davis (1989) insisted that PU represents one's subjective appraisal performance and PEOU is a subjective appraisal for effort; however, they may not necessarily predict an objective reality.

Just to iterate, the findings, are not consistent with the basic tenets of TAM. The framework emphasizes the significance of PU over PEOU with respect to predicting the acceptance of e-commerce. The empirical evidence has often substantiated this claim, resulting in PEOU being treated as less predictive. Conversely, the study findings of researchers such as Venkatesh (2002), points out that the PEOU can be a stronger catalyst in promoting technology acceptance. Also, the interviews' results partially support these findings, that is, the perceived ease of use can be a stronger catalyst for promoting e-commerce acceptance compared to the Perceived Ease of Use. Moreover, it also supports Brown's (2002) study findings which pointed out that PEOU is more significant since it can influence both technology usage as well as PU. Looking at the earlier researchers when TAM was developed, there seem to be conflicting results. For instance, Doll et al. (1998) indicated that despite TAM's wide acceptance, a series of cross-validation studies have

shown conflicting findings which fail to guide researchers or other professionals who might want to use it for decision-making.

Regarding the low correlation values, the researcher investigated the responses from the managers/owners. Among the responses, nineteen interviewees reported that they are currently using technology extremely frequently in their enterprises when asked about the technology. Twelve interviewees pointed out that they currently use technology from time to time in their organization. From these responses, it can be noted that there is little variation. Moolman (2002), emphasizes that, there likelihood of issues when the correlation is determined on the basis of a 3-point scale. However, that question was based on a 4-point scale in this study. Regarding, the question on their prediction on using e-commerce in the future, 27 (87.1 percent) interviewees strongly agreed that in the future they will incorporate technology in their organizations and 4 (12.9 percent) of them slightly agreed that in the future they will incorporate technology in their businesses.

Generally, in this study concerning managers/owners, the Cronbach's coefficient alpha values for PU and PEOU items were slightly below the acceptable range. Also, the researcher calculated the low correlation coefficients for PU and Intent for adopting e-commerce as well as PEOU and Intent for adopting e-commerce constructs. Comparing the two, the PU's correlation was lower than the correlation for PEOU. Therefore, the findings fail to go hand by hand with Davis (1989) findings. Given that this was abductive research, such 'puzzles' are expected. However, the results partially support findings which point out that PEOU can be a strong catalyst compared to PU for promoting technology acceptance.

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4.4 Employees

A total of 48 questionnaires were filled out; 8 of them were discarded due to missing information, and the rest were used in the data analysis. SPSS version 23 was employed for statistical analysis following data coding and editing.

4.4.1 Demographics

Age Range	Number of Responses
18-20	3
21-34	15
35-64	22
Above 64	0
Total	40

Table 4.3.9: Age Range of Employees

Gender	Responses
Male	16
Female	24
Total	40

Table 4.4: Gender of Employees

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Education level	Responses
High School	2
Undergraduate	38
Postgraduate	0
Total	40

Table 4.4.1: Education Level of Employees

4.4.2 Results: Employees

4.4.21 Employee Technology and E-commerce Experience.

Table 4.4.2 shows employees' experience with respect to using technology. The results indicate that 55% use technology very much, 45% use it from time to time. None of the participants has ever used technology or rarely uses it. Table 4.4.3 displays the employees' statistics regarding e-commerce use. The results show that 52% have used e-commerce while 48 % have never used it.

Frequency	Participants	Percent
I Use it very much	22	55
I use it from time to time	18	45
I rarely use it	0	0
I never used it	0	0
Total	40	100

Table 4.4.2: Frequency of Technology Usage

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Category	Participants	Percent
Ever used E-commerce	21	52
Never Used E-commerce	19	48
Total	40	100

Table 4.4.3: Employees who ever used E-commerce

4.4.22 Availability of website

Table 4.4.4 shows the availability of website from employee responses, 33% indicated their organization has a website while 67% indicated they do not have a website.

Category	Participants	Percent
Yes (Has website)	13	33
No (lacks website)	27	67
Total	40	100

Table 4.4.4: Website Presence in the Workplace

4.4.23 Level of E-commerce

Table 7.4.5 shows the results of participants when asked about their opinion about e-commerce in Jordan. From the responses, 10% feel it is excellent, 30% think it is very good, 40% feel it is ‘good’, and 20% said it is poor.

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Category	Participants	Percent
Excellent	4	10
Very good	12	30
Good	16	40
Poor	8	20

Table 4.4.5: Level of E-commerce

4.4.24 Reasons behind adoption and non-adoption

Table 4.4.6 indicates the frequencies of employees' reasons for using e-commerce. The comparison of prices was selected '15 times', Increase marketplaces by accessing a wide range of products, 16; decrease cost and Increase savings, 14; ease to use, 11; increase speed and accuracy which can obtain information, 2; reduce information search and transaction cost, 11; improve communication/quality information, 1. Table 4.4.7 shows the frequency of reasons for not using e-commerce; Lack of trust with the sources, 17; Limited financial resources, 1; Internet access problems, 1; Additional charges, 5; Poor user experience, 6; Limited online resources in the country, 2; High taxation and customs when shopping from abroad sources, 7; Security concerns, 11; Concerns with delivery options, 13.

Category	**Frequency**
Decrease cost and Increase savings	14
Increase marketplaces by accessing a wide range of markets	16
Improve communication/quality information	1
Reduce information search and transaction cost	2
Ease to use	11

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Increase speed and accuracy which can obtain information	2
Comparison of prices	15

Table 4.4.6: Reasons for using E-commerce

Category	Frequency
Lack of trust with the sources	17
Limited financial resources	1
Internet access problems	1
Additional charges	5
Poor user experience	6
Limited online resources in the country	2
High taxation and customs when shopping from abroad sources	7
Security concerns	11
Concerns with delivery options	13

Table 4.4.7: Reasons for not using E-commerce

4.4.25 Challenges Facing SMEs

Table 4.4.8 Shows the frequencies of challenges faced by organizations with respect to employee responses: category, 36; taxation, 15; Untrained business owners in technical and managerial skills, 33; Due to low salaries structure most of the skilled employees leave SMEs to work for bigger companies, 26; many SMEs in Jordan have failed to adopt modern technologies due to different reasons that has been discussed later in this research, 13.

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Category	Frequency
Financing	36
Taxation	15
Untrained business owners in technical and managerial skills	33
Due to low salaries structure most of the skilled employees leave SMEs to work for bigger companies	26
Many SMEs in Jordan have failed to adopt modern technologies due to different reasons that has been discussed later in this research	13

Table 4.4.8: Challenges Facing SMEs

4.4.3 Descriptive Statistics: Employees

In this study, the researcher used the mean of items that represent each variable to conduct a preliminary regression analysis. This preliminary multiple linear regression test was aimed at checking for outliers and influential cases only. The test comprised of Mahalanobis distance, Cook's D, Leverage standardized DF, Beta, as well as the standardized residuals. Eliminating the cases exceeding the limit with more than one measure. The researcher also chose to assess factor loadings of each item of the variable of interest and utilized SPPS to conduct exploratory factor analysis on the survey data to determine convergent validity among the constructs. As a result of a Varimax rotational principal axis factor extraction of the independent variables using the 1.0 eigenvalue cut-off criterion, the rotated factor matrix indicating the factors that emerged and their associated factor loadings. The SPSS Exploratory Factor Analysis (EFA) was used in testing the validity, by calculating the Cronbach's alpha, which ranged between .79 and .90. As shown in the

table, the factor loadings exceeded 0.5, hence it was found to have a significant level of internal validity. The resultant factor loadings range was .703 to .752 for PEOU and .595 to .705 for PU.

Variables	Factor loading	Cronbach Alpha Total Cumulative %
PEOU		0.90
The skills required to learn to operate E-commerce technology would be easy.	0.752	
Interacting with E-commerce technology would be flexible	0.731	
My interaction with E-commerce technology would be clear.	0.716	
Integrating these technologies into our current work practices would be easy	0.703	
PU		0.89
E-commerce technology enables my company to accomplish specific task more quickly	0.705	
E-commerce technology improves my job performance.	0.682	
E-commerce technology makes it easier to do	0.614	

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my job.		
I would find E-commerce technology useful in my job.	0.595	

Table 4.4.9: Cronbach's Alpha

Model Summary					
	R	R^2	Adjusted R	Std. error of the Estimate	
	0.31	0.130	0.098	0.867	
ANOVA Model					
	Sum of Squares	Df	Mean Square	F	Sig
Regression	15.273	5	3.055	4.064	0.002
Residual	108.244	34	0.752		
Total	123.518	39			

Table 4.5: Regression Analysis

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig
	B	Beta		
I constant	6.108		86.225	0.000

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PU	0.239	0.197	3.151	0.002
PEOU	0.176	0.175	2.283	0.024

Table 4.6: Coefficients

The researcher carried out the regression analysis to investigate the relationship between PU and Intention towards e-commerce adoption as well as the PEOU and intention for e-commerce adoption. The findings are tabulated in Table 4.5.1. The results from the analysis indicate that PU (t= .3.151, p< 0.040), PEOU (t= 2.283, p< .0002).

Generally, the primary aim of this survey was to evaluate employee acceptance of e-commerce in Jordan, while exploring the underlying factors which affect this new phenomenon with respect to TAM framework. The model proposes that the perceived usefulness and the simplicity in terms of technology usage have an impact on its acceptability. The researcher tested the model by carrying out a survey among 40 Jordanian employees and using their raw data to conduct a regression analysis. After conducting factor analysis, it was noted that PU and PEOU significantly impact the employees' intention towards adoption of e-commerce. The results from the regression analysis on the factors pointed out that Perceived usefulness and Perceived ease of use are statistically significant and influential factors that affect e-commerce usage. These findings are in support of Davis (1989) study which indicated that PEOU and PU have a significant impact on the acceptance of technologies. The results indicated that PU has no direct significant effect on consumers' acceptance of E-commerce by SMEs in Jordan, hence the first hypothesis was accepted. Also, it was shown that PEOU has direct significant effect on consumers' acceptance of E-commerce by SMEs in Jordan, hence the second hypothesis rejected.

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4.5 Thematic Analysis

4.5.1 Perceived Usefulness

As presented in the quantitative study, the results analyzed using multiple linear regression, showed that the PU has no direct significance on the customers' intention towards adoption of e-commerce. However, the managers and employee's data analysis indicated a positive of correlation PU with the e-commerce acceptance. The findings result shows that PU is regarded by SMEs in Jordan as a factor which influences individuals to adopt e-commerce. The result is also supported by the qualitative responses from employees and managers. From the interviewees, it was noted that perceived usefulness is among the factors which encourage the owner-managers to adopt e-commerce technology in their enterprises. Concerning the perceived benefits of e-commerce, the following responses were captured from the respondents;

"In my opinion, I believe that e-commerce technology will allow us to grow our business. I have a dream that when individuals come into contact with us, they only think of crisps from our company" (Manager).

"I believe that e-commerce offers numerous benefits; think of a larger market share with customers from all over the world, the ability to communicate quickly with suppliers and customers, and the ability to receive fresh information, which is important for our growth" (Employee)

"It will be such a good chance for my business if could sell our stuff through the website without the need to involve sales agents" (Manager).

"It is such a wonderful opportunity in enhancing our productivity and performance at the agency. While working from the office, we will be able to reach out to a larger client base with the help of the Internet". (employee).

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4.5.2 Perceived Ease of Use

With respect to the quantitative results, the behavior intention to utilize information systems is positively influenced by the perceived ease of use construct. Among the employees, customers, and managers, the perceived case of use construct has a direct positive effect on behavior intention in adopting e-commerce. The PEOU construct in e-commerce is related to the perceived ease of completing transactions, such as working on an order and receiving payments, which tends to trigger the respondents' attitude towards technology acceptance. The qualitative data also points towards the same direction, following the responses from the participants.

"*Selling tourism packages over the internet is not that complicated. We will definitely use it in the future" (Employee).*

"In general staff has a positive attitude towards it; found it to be easy and interesting; so, we won't be hesitant to use it, given that it will even save us time especially when everything will be automated" (Manager).

"We don't believe it will be difficult for us to use. I am confident that all of the businesses around here will use it in the future. It will be a norm" (Manager).

4.5.3 Factors Affecting E-commerce adoption

One of the themes that emerged from the study involves factors influencing the adoption of e-commerce. Together with the quantitative results, the researcher also analyzed the qualitative responses provided by the customers, employees, and managers which indicated multiple factors which impact e-commerce adoption in Jordan. The section is centered on providing an explanation of different factors influencing the effective adoption of e-commerce among enterprises in Jordan, particularly SMEs.

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4.5.31 Online Payment Security and Data Privacy Mechanism

In Jordan, the security of online payments, as well as the confidentiality of consumer data, might make it difficult for businesses to accept e-commerce transactions. The management of SMEs have encountered a number of issues when it comes to online digital banking in relation to online payments via the website, as indicated by the respondents. It is noted that online customers get concerned with the payment option provided on the organization's website for purposes of data security. Not only is this issue pointed out by the interviews, but also noted among the employee responses. One of the employees pointed out that:

"The online payment option needs a boost in light of the bank's technical infrastructure failures; When customers shop online, they should receive an email confirming that their order was received successfully as well as the payment, however sometimes – owing to technical challenges – the company receives the order, but no confirmation of the transaction is ever received from the customer.." (Employee)

The sentiment was echoed during an interview with the managers, as one stated;

"Because banks periodically decline online credit card transactions, there is no 'appropriate and secure' online payment communication method provided by banks to online businesses for receiving online payments in a 'safe and timely' manner due to insufficient funds in the consumer's account or transactions declined as result of internet failure.' ... and when the payment is yet to be confirmed. When the bank denied the payment, "it didn't alert us, not even the customer, but a request was made online," causing major misunderstandings between the company and its consumers." (Manager).

Moreover, some participants argued that in Jordan, lots of financial systems revolve around either cash or the emerging electronic systems which are not sophisticated enough to handle e-commerce effectively. As noted by the respondents, the majority of consumers are skeptical about

e-commerce purchases since they believe that digital transactions are insecure with respect to payment verifications. One participant speculated that it was because of outdated technology:

"*The e-payment confirmation process is reliant on the infrastructure of the bank, which might be discouraging at times. There is a time I placed an order online and experienced problems. I called to confirm whether the seller had received the order or not and they said that the issue was not with them but the electronic network. (Customer).*

Following the respondent's responses, from the qualitative questions, it was also noted that due to the lack of a secure online payment mechanism that protects the data and privacy of clients, some organizations have resorted to giving their online customers other payment options. This includes payments from the store or cash on delivery.

4.5.32 Size and Structure of the Organization

Small business adoption of e-commerce technologies is hugely affected by the organization's overall size and structure. The enterprise's size reflects the managerial style employed in the organization's e-commerce business operations. Regarding this study, the respondents strongly emphasized on the size as well as the structure of the organization and supported the sentiment that indeed this aspect impacted the firm's decision to adopt the technology. From the raw data in the qualitative studies, it was noted that the appropriate company size and formalized structure have a significant influence on each of the organization's e-commerce strategy adoption resources.

In an interview with one of the respondents, the enterprise comprised of a small business hierarchy with an informal structure, which negatively impacted the e-commerce adoption initiatives. Mostly, the owner-manager, who manages most of the divisions with minimal business resources, was in charge of most e-commerce or large project decisions. To back up these claims, one of the responders stated:

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"We don't have a clear framework in place to connect with our divisions and costumers using the most current technologies. Due to the lack of a formal structure and the fact that we are a small firm, most decisions are made by the owner, who oversees the majority of the organization's activities and manages the services that affect e-commerce decisions." (Sales manager).

From the employee questionnaires, participants also pointed out that size and structure of the organization influenced the majority of the system progression decisions. Given that they operate on a small size and structure, the available resources are not sufficient if they were to restructure e-commerce technology's traditional framework.

"*I believe that our organization's size and structure severely limit our ability to effectively utilize our resources. The owner had considered modifying the organization's traditional structure to accommodate developments in the technological realm, but a smaller company and inadequate resources pushed him to stick with traditional sales and communication tactics, but I hope he will install in future" (Employee).*

Due to the organization's small size and lack of resources, the owner-manager was unable to develop and upgrade current ICT infrastructure units, which are required for the installation of e-commerce technology. Also, another participant from another organization further explained that incase the organization had a formal structure and proper infrastructure, management would definitely be more willing to implement e-commerce technologies and even help in communicating electronically.

Another company has experienced a similar situation with respect to the interviews. It is a small firm that relies on informal services and operates under a horizontal organizational framework to carry out day-to-day operations. Their activities do not involve formal services or the most up-to-date communication infrastructure units. The owner of the organization controls

the typical business activities and channels that are regularly employed by management. According to one of the respondents:

"It centralizes decision-making with the sole owner, I can certify that our company operates on a horizontal structure, with no clearly defined departments or adequate administration. The bulk of the company's employees are family or friends, which has an impact on the company's vision for adopting e-commerce ventures." (Manager).

Given that the owner is responsible for most business operations, and because of the organization's flat structure, decisions have had a great impact on the organization's development of e-commerce with the most up-to-date ICT hardware equipment and units. The organization suffers inadequacy in terms of technological resources due to its size and structure including the internet and email, for communicating with other business partners and customers. The main communication channels involve the intranet and the telephone calls, which the staff members, including management, use to get connected with the tour guides and drivers during fieldwork. All this is because the enterprise lacks staff communications tracking software; something that was pointed out by the manager.

The owner pointed out that employees shy away from conformity and control. While modern e-commerce technologies are regarded as components that can enforce transparency in the business, some view it otherwise. Given that some have mutual relationships with suppliers, they feel affected by the changes, since they can rarely gain similar benefits from customers.

"The main barrier to e-commerce adoption is the organizational culture; top-to-bottom management in a structured framework is still used for manual processes: The official adjustments are met with resistance from employees. They don't want openness, exchange of information, and commitment to compliance" (Manager).

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4.5.33 Financial Resources

Financial resources in this context are related to the availability of sufficient financial budget essential for the deployment of advanced ICT infrastructure components, as well as the designing and maintenance of e-commerce websites. The resources are also needed to provide technological training to the employees in particular sections within the business. With respect to this qualitative study, the respondents believed that owing to the small size and informal structures of the businesses, the inadequate financial budget crippled the projects in relation to e-commerce. For example, when they needed to develop websites or upgrade an up-to-date ICT infrastructure among the SME departments. One interviewee noted:

"Because of the organization's tight ICT budget, as owner-manager... I have no interest in upgrading the business's networking communication channel by installing the latest ICT networking gadgets; I have not budgeted for that" (Owner-manager)

The statement was iterated among the employees in different organizations, one stated;

"*A few years ago, the owner-manager was interested in employing ICT professionals and planned to update the systems to create an e-commerce environment. However, following a few discussions with the ICT experts, it was decided that they would not be hired due to internal cost concerns." (Employee).*

In another company, respondents felt since the organization was suffering internal cost problems and hence lacked adequate financial resources for ICT services; they were cornered to keep using the basic ICT infrastructure devices to conduct their day-to-day business activities. The manager pointed out the reason behind the unavailability of advanced ICT infrastructure for supporting e-commerce:

"Remember this is a small business and there is currently insufficient IT advancement funding to acquire sophisticated ICT covering devices, particularly for e-commerce, which necessitates the implementation of the most up-to-date computers, including hardware and

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software networks for communicating, storing, and managing information in a short period of time." (Manager)

Some respondents believed that they lacked enough budget for managing the websites; something that was costly for the Owner. However, another company acknowledged they have no financial problems regarding improving their ICT infrastructure or building an e-commerce-friendly website. According to the participants, they had enough budget for supporting e-commerce related applications. In agreement with the views about financial capability, one respondent indicated;

"*We have adequate financial resources to enhance e-commerce with the availability of the advanced ICT devices coupled with a strong wireless internet connection. I can confidently say that the organization does not experience any internet outages." (Finance Manager*)

The manager, on the other hand, pointed at senior management's aversion to technological innovation as a limiting factor. It was regarded a problem because the management believed that since everything was running smoothly without the use of e-commerce software, it was pointless to increase technical expenditures by implementing e-commerce. Globalization and competitive activity, on the other hand, have reawakened senior management in the market, and e-commerce adoption is now a requirement for the following reasons:

"If the organization does not adjust its technological policy in the future, no doubt change will force it to conform." (Manager"

The reasons why firms did not have the most up-to-date ICT infrastructure with respect to this qualitative study were projected towards limited technology budget. A substantial budget is required for the owner to improve the systems and assist his staff in adopting e-commerce and working on online gadgets by providing enough technological training.

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4.5.34 Skilled ICT Expertise

The qualitative interviews as well as employee responses indicated that effective e-commerce adoption was attributed to ICT skills within the SMEs. For proper management and installation of the latest ICT devices for e-commerce, ICT competence and adequate human resources are required. However, the SMEs looked at in this study believed that they lacked qualified ICT personnel who is able to operate and maintain e-commerce technology devices, install software and fix hardware, as well as design websites to support e-commerce within their firms. The marketing manager brought up the issue of a scarcity of qualified ICT skills during discussions with the participants. The organization enlists the help of a local small ICT firm for technical assistance and maintains control over design equipment like laser printers as well as the general ICT facility:

"*We haven't had any serious technical issues with our ICT and manufacturing systems in the past few years, but when it happened, we "called the contacted agency that fixed the issue...as we didn't have any IT professional" to fix the problems." (Manager).*

Another respondent further explained that at the beginning, their company relied on (TYPO 3) technology to conduct its business processes before updating and installing (Magento) 2 for its e-commerce operations. However, when it came to implementing the Magento 2 software, the company struggled to find qualified ICT personnel who could quickly deploy the software. According to the manager:

"When the company opted to upgrade its (TYPO 3) e-commerce platform to (Magento 2), the process of customizing all of the company's software took seven months... because management was unable to locate Magento resource people capable of properly configuring, running, and managing its applications in accordance with business requirements..." (Manager).

In each organization, there is a need to have an ICT department with specialists for controlling ICT infrastructure and managing e-commerce activities. According to the qualitative

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interview data, the company would need a sufficiently equipped ICT department for managing the organization's e-commerce and ICT units, which may be a separate budget item for the owner. The manager reported the following during telephone interviews with participants:

"*Employees' overall level of ICT skills does not meet international standards*." *(Manager).*

However, the company has effectively established a strong ERP system for managing crucial information for decision making. An employee also explained the Owner-role managers in the organization's e-business advancements.

"The owner intends to employ a Bidding Management System and a Data Exchange system, which are rival's types of production systems, to manufacture automobile spare parts in a convenient, cost-effective, and timely manner in order to satisfy customers' delivery needs." (Employee).

Generally, the businesses that participated in the study stated that their organization lacked ICT professionals with the requisite abilities for managing and controlling technological systems, establishing long-term websites, and maintaining electronic commerce applications that included a variety of software. It was attributed to costs associated with the hiring of an ICT expert, as well as limited organizational finances

4.5.35 Organizational Website and Ordering Payment Facility

The respondents also stressed on the importance of good e-commerce websites with reliable payment systems; that could be used as a valuable mechanism to handle e-commerce transactions, connect to the internet in order to sell a variety of goods and services, as well as communicate with potential customers. The qualitative data provides a clear indication that the perceived success of small businesses rely on the availability of the website, which is central to facilitating sales via multiple payment gateways.

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Regarding organizational e-commerce capabilities, some SMEs resort to using social media in supporting e-commerce activities. The organization promotes its products on the Web 2.0 Facebook channel by posting various product photos. Responses from the SMEs indicated since some of the organizations do not have commercial websites, the e-commerce competence was assessed using a Facebook page. One respondent pointed out that the page was comprised of product images and contact details only. The page lacked product's detailed descriptions and prices. Therefore, the customers who needed to know more about the products could contact the organization via Facebook messaging or by telephone. The owner-manager further indicated that:

"The company's profile has been a barrier to the owner to develop a website providing payment options and the ability to place purchases online, which is a necessary component of e-commerce adoption. The company uses Microsoft Office programs and email when communicating with consumers and taking orders. In the absence of electronic sales channels, and given the country's conventional business climate, the company is forced to rely on traditional sales tactics, such as social media channels, to sell items and engage with customers." (Manager).

Most clients reach out to the business for further product details and features before placing orders online due to the website's lack of information on items and services. The employees' responses reflected this issue, with one stating that the low quantity of online orders in Jordan was due to the high value placed on the website's appearance. The employee also mentioned the necessity with respect to information clarity:

"*The presence of a website only draws the attention of buyers, but it would be much better if product information and specs could be posted on the organization's website. Rather than relying just on social media, I believe the website will provide a greater opportunity to receive more online orders from potential clients." (Employee)*.

The primary purpose of the organization's website, as previously mentioned, was to attract potential clients before they reached and visited the firm, display general information about the

company and promote its goods and services should be provided. The websites lack payment options or ordering facilities.

4.5.36 Traditional Business Selling Methods

The respondents strongly emphasized the traditional business selling methods during the survey in this qualitative study. Traditional sales practices proved to be an important sub-theme, according to qualitative data. Traditional sales tactics such as personal connections, personal relationships, and phone or mobile communications between consumers, suppliers, and business partners have been and still embraced by SMEs over the adoption of e-commerce.

For some organizations, a traditional business approach method is key to the organization. According to the manager, there is high competitiveness in the travel and tickets field, with various ticketing firms operating in the city and it is difficult to compete in such an environment, in which traditional method remains crucial to sustain the customers.

"To retain the clients, our organization strives to develop a trusting environment and keep a traditional connection with its consumers and buyers." (Owner-manager).

The sales team also visits their clients, that is, the SMEs' owners and owners of large retail outlets to circulate vital information concerning various commodities as part of the business operations. Those who are interested in the products can visit the enterprise in person to learn more. Participants stated:

"*Personal selling is nothing new in this form of a family business. Often, we depend on people to market the goods to clients "face-to-face." The goal of the sales team is to engage and persuade customers to purchase a package or, at the very least, visit the company..." (Manager).*

The sales crew is extremely important to the company. They frequently visit local customers, business owners, and corporate clients in order to disseminate pertinent information regarding the company's travels and ticket packages. Customers who want to learn more

concerning the offers usually contact the company by phone or in person. Individual customers visit the enterprises for in-person consultations with the sales department concerning the packages.

"In small businesses like this one, many clients prefer face-to-face communication when looking for group discounts and hotel arrangements for families and groups can be negotiated. It's only possible if you go to the business and talk to the employees about packages." (Marketing Assistant).

However, because of society's growing knowledge of e-commerce and the high penetration of young Facebook and other social media users through mobile devices, media has started to take an active part in promoting e-commerce. As a result, the mindset of several SME owners and young businesses is shifting away from traditional sales approaches and toward e-commerce.

"I think that will be one great move as the owner had anticipated developing a platform that clients can order and pay directly. Given that the current advertising and sales on social media have begun to generate more benefits than the old techniques, no doubt he will think of putting it into action" (Employee).

4.5.37 Consumer Trust

This study's qualitative data analysis revealed a number of other cultural obstacles that can influence an organization's decision towards adopting or not adopting e-commerce. A respondent noted that, while many households in large cities have the spending power to visit online stores and purchase products and services, they lack trust in the internet, making them shy away from online shopping. Consumer distrust is among one of the biggest roadblocks restricting e-commerce purchases in Jordan, and hence a barrier to complete depending on online transactions. She asserted that:

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"*Making sales is difficult unless the "manufactured product" can be properly felt and touched. As a result, 'physical observation' is considered necessary while purchasing manufactured goods...*" *(Manager).*

Moreover, the trust issue is iterated by some consumers. Despite the fact that product specifications and descriptions are shown accurately, alongside details on prices, warranty choices, as well as shipping, most Jordanians are hesitant to use the e-commerce sites and transact online owing to a lack of trust in the system.

"I was deceived by an online business since I did not receive the identical products that I paid for. As a result, the next time I visit their store, I'd want to physically inspect the item before engaging in discussions to negotiate a price, something I can't do online." (Customer).

4.5.38 Role of owner-manager- Technological Awareness and Education

The respondents explained that it is necessary for the business owner-managers or CEOs to possess practical knowledge and understanding of the current technology if effectiveness in e-commerce technology is desired in Jordan. The owner-manager education is critical to e-commerce adoption, according to qualitative data. A manager stated that the company's lack of technical knowledge and comprehension of e-commerce as the latest innovation hindered it from implementing a complete e-commerce framework. The owner-manager perspective on potential benefits was minimal but encouragement or rather awareness on e-commerce would possibly push him to embrace and adopt the technology. The marketing assistant added;

"Because of the company's size, the owner-manager has shown no interest to adopt e-commerce system, but as far as I know, he has no interest in the e-commerce because of a lack of technological awareness and minimal advantages." (Marketing Assistant).

The adoption of e-commerce technologies in the firm was facilitated by the owner-managers's and executives' computer proficiency. The Owner-manager mentioned that although

he had availed latest computer and accessories, which enables most executives and other staff are to use the most up-to-date tools, some of the most senior executives (older employees) expressed a lack of enthusiasm in working with new technology to engage with customers online;

"Our head office includes ten workers, that is together with four senior executives, the majority of whom have worked in various areas since 1997 and are good at what they do. However, they are unable to deal with ICT-related issues caused by the lack of computer knowledge and expertise of latest technologies." (Owner-manager).

The interview revealed that employees needed necessary technical abilities to operate computer systems and associated technology-related tools including website design and implementation as well as managing communications for effective e-commerce adoption. This needed extensive training. The accounts officer believed that the company would be unable to meet its e-commerce objectives because it lacked personnel with critical ICT skills. He noted;

"Most senior employees are only capable of handling a few basic tasks, such as sending and receiving emails and dealing with clients through phone and fax. To learn complicated systems, however, proper computer training is required." (Accounts officer).

4.6 Institutional Assistance

The data revealed that SMEs may considerably improve their whole commercial structure with the help of bank loans and that many owner-managers or businesses can embrace the latest technologies with the help of technology loans, which support e-commerce activities. Basically, such loans contribute to their growth as well as that of the country. However, Jordan SMEs, which are recognized as the country's economic backbone, still face problems with the financial sector. An ICT manager pointed out that Jordan's commercial banks shun individuals with minimal investments due to a lack of liquid assets and/or a good credit score. The manager stated:

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"SME funding is viewed as a riskier alternative by commercial banks, and Many banks believe that because SMEs operate mostly in the informal sector, they are badly managed." (manager).

Another mentioned that SMEs are significant contributors to the GDP in terms of creating employment and positively impact imports as well as the overall economic growth of Jordan. However, the government has not created appropriate policies to ensure that SMEs have access to much-needed financial assistance, owing to banks' unwillingness to support them. Various banks are hesitant to give small businesses supportive loans for fear of losing their money.

"Some private banks have been granted a chance to lend them up to one million to micro or small businesses; however, if the central bank grants them "regulatory space" by enabling them to support a company with up to ten million in cash initially, and then progressively increasing the investment, they can also finance the medium-sized businesses." (Manager).

4.7 Government and SMEs

Law and order issues give the impression that government agencies are lagging behind in supporting e-commerce enterprises in the country. Local business groups, according to one manager, need to take the lead and enact legislation for the e-commerce framework. The findings also suggest that the government should prioritize revising the country's e-commerce and ICT regulatory policies. According to the manager;

"To fulfill the demand for e-commerce and to prepare Jordan's SMEs for future technology challenges, the government must think of taking the relevant steps to enhance and improve electronic systems, including revising the ICT digital policy to match current needs." (Manager).

In this study, the data indicates that the government has not paid enough attention to put in place legislations that provide SMEs with a secure legal framework which allows interactions between sellers and buyers to be handled securely over the internet. A manager continued

highlighting that the government has proved its dedication since the founding of government entities, as it plays a significant important part in the development of an e-commerce infrastructure to modernize its economy. He went on to say that governments' influence on the business environment has a massive affect on how fast organizations adopt e-commerce.

"The government policies which aim at improving are among key drivers of e-commerce. However, Whenever it concerns e-commerce, I believe the government is yet to maximally play its role in promoting e-commerce in the country; since, in my opinion, the government has not set proper e-commerce policies." (Manager).

4.8 COVID-19 and SMEs in Jordan

Majority of businesses surveyed during the research reported to have experienced enormous disruptions in their business operations in relation to lockdown and associated COVID-19 situation Many businesses appeared to be forced to transition and operate remotely; while many of them continued to function, albeit at a reduced capacity. Cash flow was mentioned as one of the most pressing issues affecting firms across the surveys.

The pandemic changed the operation status among the SMEs. Less than 10% of the SMEs that participated in the research were operating without major disruptions at the time of the study. The participants mentioned operating with less employees and working fewer hours, while other enterprises had settled for temporary closure.

"Closing down was the only option especially during the initial periods when the pandemic struck. Customers were not flocking in to purchase the electronics as they used to-business was running into losses'' (Manager).

Reduced demand and sales negatively impacted all the SMEs under survey. They reported a loss of revenue as they feared plunging into financial crisis to point of complete shutdown. The economic effects are quite spread evenly among numerous businesses of various sizes. The

managers attributed the reduced sales to the customers' priorities at the moment; most rushed to satisfy basic needs as they may face financial problems as well.

"The sales are terrible at the moment. In fact, they cannot even be half of the revenues received in pre-COVID19" (manager).

During the interviews, the participants mentioned hurdles when it comes to paying their workers. If the current environment, which existed at the time of the study, persisted for another few months, the majority of studied businesses would be unable to pay employee wages. When compared to SMEs with less resources, those with better financial standing were able to pay their employees for a longer period. A manager mentioned that he had to negotiate with employees for pay-cuts;

"The employee needed to understand that we are in a crisis, with lower sales and revenues that aren't enough to keep the business afloat. We had to cut costs, especially wages, in order to keep it running." (Manager).

With respect to the financial problems related to the COVID-19 pandemic, respondents believed that e-commerce was no longer an option but a necessity if they were to survive the hurdles. Especially those that had not fully functional websites, they had to reconsider putting more emphasis on it. One manager mentioned;

"We're going to virtual markets, and we've got an online e-commerce platform up and running. Overall, we plan to double revenues by going online in B2B; this year, we aim to maintain a certain level of output, but I am not hopeful that we will be able to expand." (Manager).

A large percentage of the respondents mentioned they were not yet aware of the government programs that could support the sector. Among the managers that recognized government initiatives such as the CBJ special JD 500 million funds, complained of not being able to solve their problems. They pointed out during the survey; banks were not sufficiently promoting soft credit programs with low interest rates to businesses. Banks are hesitant to lend to businesses

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in these conditions, according to interviewees, because they follow a zero-risk policy and prefer to invest in lower-risk government bonds. As one manager put it;

"Banks operate on a zero-risk basis, requiring collateral and guarantees; declining to lend unless they have strong financial backing. The majority of businesses are in debt and have defaulted on payments. Bank profits are guaranteed, but they require government pressure to lend more and lower interest rates." (Manager).

Themes and Sub-themes	**Emerging codes**
Perceived Usefulness	PU has no direct significance on the customers' intention towards adoption of e-commerce. The managers and employee a positive of correlation PU with the e-commerce acceptance.
Perceived Ease of Use	Among the employees, customers, and managers, the perceived case of use construct has a direct positive effect on behavior intention in adopting e-commerce.
Online Payment Security and Data Privacy Mechanism	Majority of consumers are skeptical about e-commerce purchases since they believe that digital transactions are insecure with respect to payment verifications.

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Size and Structure of the Organization	Size and structure of the organization impacted the firm's decision to adopt the technology.
Financial Resources	Inadequate financial budget limited adoption of e-commerce projects.
Skilled ICT Expertise	Lack ICT professionals with the requisite abilities for managing and controlling technological systems affected technology adoption.
Organizational Website and Ordering Payment Facility	E-commerce adoption relies on the availability of the website, which is central to facilitating sales via multiple payment gateways.
Traditional Business Selling Methods	Traditional business selling methods is unavoidable in certain circumstances which seek to strengthen consumer relationship.
Consumer trust	Consumer distrust is among one of the biggest roadblocks restricting e-commerce purchases in Jordan, and hence a barrier to complete depending on online transactions.

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Role of owner-manager- Technological Awareness and Education	Company's lack of technical knowledge and comprehension of e-commerce as the latest innovation hindered it from implementing a complete e-commerce framework.
Institutional Assistance	Jordan's commercial banks shun individuals with minimal investments due to a lack of liquid assets and/or a good credit score.
Government and SMEs	Government has not paid enough attention to put in place legislations that provide SMEs with a secure legal framework which allows interactions between sellers and buyers to be handled securely over the internet.

Table 7.7 Summary of Themes and Sub-themes on E-commerce adoption in Jordan

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CHAPTER FIVE

5.0 DISCUSSION

5.1 Review of Research questions

The following section explores the research questions with respect to data collected and analyzed.

5.1.1 SMEs, E-commerce, and Economic Development

RQ1. What is the impact of E-commerce adoption by SMEs in Jordan and how it will contribute to the economic development in the country?

Sub-questions:

What is the situation of E-commerce in Jordan?

With respect to the data gathered from the respondents; employees, managers, and customers, the countries' e-commerce development can be gauged based on the various contexts. There is room for e-commerce to flourish in Jordan and compete at the international level, however, if not some obstacles blocking its way. E-commerce adoption is yet to reach its full capability in Jordan. The study has helped in exploring e-commerce penetration in Jordan, with respect to a legal framework, payment systems, government role, delivery systems.

Delivery Systems

Delivery is a vital factor in facilitating e-commerce activities in a country. From the interview with managers, it was evident that delivery in Jordan is yet to be established to support online business. The evidence tends to conquer with Yaseen et al. (2015) studies; Jordan is rated

as sufficient with respect to technological preparedness, only that it is still in the early stages of creating delivery services. The Jordanian postal service, which is run by the government, is among the sectors which seem to drag the development of e-commerce. In comparison to first-world country standards, the postal service is inadequate, although it is capable of providing basic postal services. Money transfers and parcel deliveries via rental post office boxes are among the services provided by the postal service.

In most places in Jordan, the delivery system excludes door-step delivery because they lack associated addresses to the streets and residences, making it impossible for e-commerce enterprises to deliver effective and efficient services to the customers. The majority of individuals collect their mail from post offices since it is still processed manually. This environment inhibits the rise of a new age system, particularly e-commerce that is strongly reliant on user information access. Consumers are also demotivated by the lack of an effective postal system. The system of delivery is a crucial service for e-commerce clients in order to receive their purchases timely and at a reasonable price. As one customer pointed out in the responses;

"Sometimes I prefer to purchase the products from the company stores due to the high charges when it comes to delivery fee" *(Customer)*

Consumers in Jordan continue to have delivery issues when it comes to e-commerce services, something that is contributed fact that homes have not been allocated addresses. Concerning the delivery of goods, a manager pointed out:

"Consumers normally include their contact information and city address in their orders, so we call them for delivery arrangements in their preferred location. Customers always guide us to their current location to pick up their package." (Sales Manager).

The lack of a fixed residential address is not unique to Jordan; it affects the majority of developing countries, including Pakistan (Nazr, 2019). Allocating associated addresses to all

residences in Jordan appears to be challenging at this level, since it will demand a significant amount of funding and planning, and it will not be accomplished overnight.

Payment Systems

The payments systems in Jordan are rapidly changing, making it possible for consumers to shop online. Digital payments have increased with an exceptional rate from card to mobile wallets. This may be associated with the high rate of diffusion of the Internet in Jordan, significantly changing the financial services industry. Many banks are promoting the e-commerce sector by providing customers with the opportunities to shop and transact online through various credit or digital payment options. Payment systems including debit and credit cards, which are offered by financial institutions and support online payment transactions, are the cornerstone to Jordan's e-commerce progress.

E-commerce adoption also demands a reliable and safe payment system to mitigate corruption and other illegal activities, something that Hassan et al. (2018) pointed in their study concerning trust issues in Jordan e-commerce adoption. To ensure effectiveness in e-commerce, a strong electronic payments infrastructure is necessary, as it’s a bridge the gap between online transactions and the financial systems of the economy, something that managers emphasized. E-commerce development can either be enhanced or hampered by the effectiveness and availability of the payment system. Most Jordanian banks allow their clients to use their cards for online purchases after they have activated their cards.

“There are many banks giving customers an opportunity to transact with their cards. Visa electronic cards and charged cards, both are authorized to make online payments as long as they are activated in advance” (manager).

However, as pointed out in the thematic analysis, some respondents lacked confidence in the security of online transactions.

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E-commerce Awareness

According to Molla and Licker (2015), absence of e-commerce awareness is a factor which is neglected in most developing economies. It is critical to possess broad knowledge of all facets of e-commerce in order to ensure effective e-commerce adoption. Consumers' cultural perspective in relation to the lack of e-commerce awareness plays a significant role in limiting customers from engaging in e-commerce. From interviews with the managers, the responses indicated that the managers lacked awareness of the merits of e-commerce adoption, they had opted for traditional e-commerce or partial e-commerce. Also, with respect to the employee's qualitative responses, some owner-managers were reluctant to implement e-commerce as they were ignorant of potential benefits that accompany the utilization of a fully integrated e-commerce platform.

It may be attributed to the customers being unaware of the services available to them while purchasing online. For instance, the payment and delivery alternatives that are open to them, their rights as well as the laws protecting them. When customers become conversant with these necessities, there is a high likelihood of adopting e-commerce. Qasim et al. (2018) study on e-commerce in Jordan, points out that knowledge of e-commerce and its advantages is a vital step that might influence whether or not an individual will choose to adopt e-commerce. Once a customer understands benefits of e-commerce, the individual will likely use it.

- **What is the current situation of SMEs in Jordan?**

SMEs are significant contributors to job creation and economic development in Jordan. Until 2019, Jordan's SMEs have been the sector that has expressed hope for the country's economic future. These enterprises employ over 60% of Jordan's labor force and account for 97 percent of the country's private sector revenue (UNDP, 2019). According to Building Markets (2019),

Jordanian-owned SMEs facilitated an enormous job creation for both the large refugee populations and locals. These enterprises create new job opportunities more than Jordan's large organizations. From the interviews with the managers, it was evident that SMEs were giants in economic contribution with respect to the anticipated continued problems to the pandemic at the moment. The current state of SMEs is not as it used to be, given that it is the most fragile sector.

The COVID-19 epidemic and its socioeconomic consequences are transforming. With the crisis being determined not only by the effects of the virus's spread on Jordan's and other countries' economies but also by the government's response regarding movement restrictions and other emergency measures. To safeguard lives and prevent the collapse of health care, efforts to restrict the spread of COVID-19 are critical. These regulations, while necessary, have caused production disruptions and put numerous Jordanian businesses into financial distress.

Given that the lockdown forced many customers to shift to online shopping, the respondents pointed out that they had to think of selling their products and services using e-commerce platforms; they considered website platforms for sales and marketing purposes. This was mentioned as one of the ways to adapt or respond to the crisis and maintain – or perhaps expand – their consumer base, although at a slow rate. According to the interview data, a number of the businesses that were already using e-commerce prior to the COVID-19 outbreak enhanced or expanded their internet usage. However, most businesses are indeed enterprises that came up with such measures in a way to counter the adverse effects of the COVID-19 crisis. Organizations that had not used the Internet for business before the pandemic had begun to do so by the time the study was conducted.

As previously stated, just a few of the studied businesses were able to operate with almost the same as they used to before the pandemic. A vast majority of the businesses had to downscale their operations or even halt their operations, either on a temporary or permanent basis. Laying off employees due to the COVID-19 outbreak is definitely a very unpleasant and unfortunate outcome,

both for the company and for the individuals who lost their jobs However, from a business standpoint, the managers took it as a critical opportunity to determine their ability to survive and continue operating in extraordinarily difficult circumstances. They were forced to lay off some workers and induce pay-cuts as they struggle to cope with the expenses.

- **What is going to be the effect of adopting E-commerce by SMEs on the people, SMEs, and the economy of the country?**

With respect to the studies, it can be projected that e-commerce adoption will be accompanied by multiple opportunities in Jordan. The benefits of e-commerce are multiple parties including citizens, businesses, and the country as a whole.

Interview with SMEs indicated that businesses are already enjoying the flexibility that comes with the adoption of e-commerce. Moreover, e-commerce contributes to flexible working hours and practices, as the businesses could be reached 24 hours for seven days of the week. The customers or suppliers could contact the businesses at any time compared to the traditional business. It could involve checking balances, purchasing products, or obtaining information from the enterprises. The flexibility in working hours is essential in improving the quality of life of individuals as one could access urgent services or products when needed. It facilitates happier and healthier working environments as it reduces environmental pollution since some people could work by reducing the number of people commuting to workplaces. With respect to the current COVID-19, the managers acknowledged that they could work from home especially when there was a need for individuals to reduce interactions.

E-commerce adoption is also projected to improve SMEs' access to markets. From the qualitative studies, the e-commerce adopters were recognized some benefits of e-commerce including increased sales due to access to wide market opportunities. Some of the SMEs entered the e-commerce market recently and reported having the ability to explore a wider market. Also,

Sarhan, (2018) notes that the networking advantages that come with e-commerce can greatly help the enterprises in overcoming the information obstacles through increased speed, richness, and amount of data flowing between the enterprises and market actors. It eventually leads to significant inter-firm information flows as well as expanded market reach.

SMEs in Jordan will also experience operational efficiency. According to Al-Husban et al. (2020), accessing and using the traditional data communication infrastructure in developing countries is quite expensive. Moreover, the interview responses indicated that dealing with traditional e-commerce was costly especially when the manager had to consider employing sales individuals for door-to-do sales. The high cost usually results in the high price of the products, adversely affecting the competitive potential in the global market. From transaction cost theory, there is no doubt e-commerce could play a key function in reducing intra-firm coordination and addressing the inefficiency problems faced by businesses (Moodley, 2003). As e-commerce reduces the cost competitiveness of the businesses' products in local markets, as well as transaction costs, the cost of being part of partnerships and strategic alliances also reduces.

As e-commerce evolves, it significantly impacts employment and wages as a result of a complex set of interactive variables. E-commerce is affiliated with the creation of job opportunities, as it plays a vital function in scaling down unemployment rate in the country. Direct job creation emanates from sectors dealing with goods and services, as well as digital products. In this study, it is indicated that although the owner-managers had laid off some employees to cut down expenses, the adopters still needed employees to execute duties such as deliveries. Apart from the average employment gains, e-commerce has also been a major influence on demand for certain skills. According to studies, ICTs and e-commerce necessitate new skills, particularly if duties and decision-making are strongly reliant on information (Ahmad, 2019). Consequently, the demand for such experts who can manage the information eventually rises. Another research on the impact of e-commerce indicated that new technologies in the e-commerce industry increase

the demand for highly skilled employees, particularly in information-based organizations (Bresnahan et al., 2015). As noted in the thematic analysis, some managers noted that they had to rely on third party ICT firms to execute high skilled operations in their business. This impacts the livelihoods of individuals in such sectors.

SMEs are regarded as an important source of boosting production capacity and for effectively combating poverty and unemployment. Many countries, like Jordan, have given this type of initiative increased attention (Al-Afeef, 2020). They are thinking of integrating and harmonizing the general structures of industrial development as they use simple manufacturing processes. The government has realized the impact of SMEs in the economy, hence facilitating initiatives to boost the e-commerce network. SMEs account for more than 90% of all businesses in Jordan. They employ around 60% of the labor force and contribute roughly half of the country's GDP. (Moh'd AL-Tamimi & Jaradat, 2019).

- **What are the challenges facing the development of Jordanian SMEs?**

Lack of Credibility and Reputation

SMEs in Jordan are encounter challenges with respect to reputation and credibility issues. They need to prove that they are credible and trustworthy players and that they are linked to offering high quality products and services in their respective industries (Elseoud et al., 2019). From the surveys, it was evident that SMEs share a common characteristic of lacking consumer confidence, particularly when it comes to online purchases. The cases presented in this study indicate that consumers prefer visiting the stores instead of relying on online purchases. The participants pointed out several aspects that contribute to low online purchases and use of e-commerce services, one of which was customer skepticism of e-commerce and associated services.

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The participants agreed that in Jordanian markets, there is an existence of a culture of fear of fraud and dishonesty, with vendors concealing their items' faults, something that consumers prefer to avoid by choosing traditional commerce. Consumers are increasingly visiting markets and stores as a necessity for verification of product quality and quantity, which is usually not practicable with online transactions. One participant described a situation in which a consumer purchased merchandise online but was delivered something different from what was paid for in terms of quality, leading to a feeling of being deceived. This research's findings support those of Al-Bakri and Katsioloudes (2015) in Jordan, who found that customer confidence in online transactions has become a crucial determinant in developing countries' e-commerce adoption.

Operational Costs

The cost of running or upgrading key aspects in the business operations has been proven to be a challenge among SMEs. In the context of e-commerce, running sophisticated e-commerce projects and online transactions demands that companies to have a functioning website with an e-payment infrastructure to facilitate e-commerce payments through multiple channels. Potential clients can conveniently access the organization's online products and services if such mechanisms are in place. However, SMEs under the survey show that the absence of a website with an effective payment option is a limiting factor that makes it tough for organizations to offer e-commerce services via e-commerce channels.

Traditional marketing strategies, such as cash payments, are largely available in the country, according to participants from these SMEs, the website is regarded as an additional burden for the business. As a result, the outcomes of this survey demonstrated that a website is merely a marketing tool in most SMEs, rather than a platform for core transactions. The complete e-commerce transaction system was unavailable in most SMEs. A barrier that affects other developing countries such as Thailand (Rahayu and Day, 2017).

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Inadequate support from Financial Institutions.

For SMEs to expand and thrive, they need access to capital. SMEs rely on internal sources of capital in the early phases of their development, such as the owner's savings, retained earnings, or asset sales. External sources become more significant as the firm grows, and the availability of resources can dictate the potential of the organization to expand. Finance from external sources has a strong and positive relationship with productivity. Access to capital for SMEs in Jordan is a significant challenge, as echoed by the managers. Most financial institutions do not have confidence in SMEs due to the risk of loan defaulting. From the interviewee's sentiments, it is difficult to secure adequate financial help from the institutions, just as Karim, 2019, in his study on Jordanian SMEs.

Inadequate Finance and Expertise

SMEs are characterized by limited internal resources, with volatile investments. The SMEs therefore may shy away from investing in some sectors or businesses, particularly where the results are not openly guaranteed. Also, most SMEs in Jordan may find it difficult to survive in harsh economic environments due to limited resources to adjust to the changing economic environment. During the survey, the SMEs indicated huge disruptions in their operations with respect to the challenges posed by the pandemic. Also due to inadequacy of resources, the SMEs resort to the production of local or low value-added goods or services.

With respect to e-commerce, Most SMEs face financial budget constraints and a shortage of qualified personnel, according to participants. The development of e-commerce within SMEs has frequently failed as a result of concerns with the owner-managers' financial capacity and staff''s ICT abilities (Modzi et al., 2016). Some SMEs raised worries about their ability to fund the establishment of new ICT infrastructure or the enhancement of current ICT infrastructure since the available resources are meant to maintain the enterprise.

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As a result, even establishing a commercial website for e-commerce transactions and recruiting professional ICT workers for webpage design and ICT unit maintenance are challenging for smaller SMEs in particular. Additionally, highly skilled employees in Jordan usually provide their services to large enterprises since small businesses cannot afford to hire pricey services or pay exorbitant wages. (Alrawabdeh, 2016).

Size and Structure of SMEs

Majority of SME managers and other survey participants agreed that the organization's size and structure were important factors in demonstrating the company's potential to deliver necessary resources and make relevant changes. According to the findings of this study, medium-sized SMEs have a stronger ability than smaller SMEs to supply unique resources to their businesses. Therefore, there is a high likelihood that medium-sized businesses adopt e-commerce. Small SMEs surveyed had underdeveloped structures, and the owners had a huge influence on e-commerce decisions. As a result, the installation of ICT technologies was greatly impacted. The findings of this study support previous findings by Martins et al., 2015, indicating size and structure are important determinants in an organization’s decision to implement e-commerce.

Inadequate government support

Previous research revealed that in economies where e-commerce technologies were effective, the government had initiated preliminary actions to support and improve e-commerce at different levels (Walker et al., 2016). However, the respondents in this survey pointed out the government's inability to provide an adequate legal and regulatory e-commerce framework hampered its efforts to develop SMEs and e-commerce technologies in Jordan.

- **What strategy can be used to support the adoption process?**

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The strategies for supporting e-commerce adoption can be split into two divisions: (i) the role of government and local business institute readiness, and (ii) role of owner-managers and SMEs' readiness.

The findings of this research assist in identifying the most important factors influencing SMEs' adoption of e-commerce as a crucial and current innovation in the country. As mentioned before in this chapter, there are insufficient government regulations on e-commerce, as well as inadequate financial help from institutions. The findings also show that the government's status in Jordan is insignificant in terms of e-commerce promotion and that its attempts to promote SMEs at various stages have been slow and insufficient. As a result, the Jordanian government as well as local business organizations must establish lasting and efficient e-commerce policies that can promote and fasten e-commerce adoption in all industries. Individual customers will also gain from such policies since they will be able to fully engage in the opportunities created by e-commerce. Additionally, government may need to structure mechanisms for SMEs to be trained in all Jordanian sectors in order to uplift regional SMEs, as well as provide knowledge on e-commerce and ICT systems at the grassroots level. To ensure small businesses in Jordan are at par with the latest developments in the international e-commerce standards, the training institutions for e-commerce and ICT can solely be established in collaboration with both public and private agencies, as well as other international bodies and non-governmental organizations.

A basic guideline and technique that might apply to all SMEs are for the owner or manager to critically assess the numerous components of e-commerce adoption that are already present in their organizational operation. It will facilitate appropriate decision-making concerning the evolution of e-commerce activities in specific departments, owing to the fact that distinct firms have varying e-commerce conditions (AlBar & Hoque, 2017). Also, it noted that the circumstances prevailing in SMEs react to technical and environmental issues in different ways (Abrar-ul-haq, 2015). Therefore, the key SME leaders need to be conversant with the developments in e-

commerce and should not fall for the temptation to shy away from exploring new technological innovations for global e-commerce (Abualrob & Kang, 2016). As shown in the interview responses, owner-managers are critical determiners of e-commerce adoption. Therefore, given the significant role of owner-managers in SMEs in Jordan towards adopting e-commerce, it is vital to consider the characteristics of owner-managers inside businesses, as well as to identify and optimize the function of those owner-managers. Also, it was noted during the survey that owner-managers have the power to promote or discourage e-commerce adoption, thus it's critical to equip and train them to move on with more advanced e-commerce projects. (Al-Qirim, 2007).

5.1.2 Revisiting Conceptual Framework

RQ 2: What factors need to be included in the proposed conceptual framework to study and identify the adoption of E-commerce in Jordan?

The study was based on the TAM, which revolves around factors affecting e-commerce with respect to the user's intention to adopt e-commerce. The framework is based on two constructs; PU and PEOU. However, given that this study is abductive research; multiple factors with respect to e-commerce adoption emerge, which bring up the need to add more constructs to gain comprehensive knowledge on e-commerce adoption in Jordan.

Outcomes from this research suggest technological acceptance may be attributed to factors more than just PU and PEOU. The factors can be integrated with those of the TOE such as technological and organisational capability, as well as technical, human, and financial resources. The study pointed out to a no single approach, formula, model, or framework that assured automatic technological effectiveness in adopting e-commerce and developing. The framework, on the other hand, can just improve the rate at which businesses implement e-commerce technologies. Most of the framework models examined only the reflection of the overall position

of SMEs when it came to embracing innovations which can boost e-commerce adoption at the organizational level.

Previous studies that have been mentioned in chapter four indicated that innovative technologies play important role in enabling businesses to take the first step towards adopting e-commerce in their operations. Moreover, analysis of frameworks further pointed out that organizational, environmental, and technological factors affect the enterprises to adopt or not adopt e-commerce as business innovation. In addition, many businesses could reap the most technology benefits by effectively integrating e-commerce with the help of SME management. Also, prior frameworks have shown that in business environments where the latest ICT infrastructures are available, positive technological changes are realized, particularly in the contemporary business operations. With the government's help, such technological advancements are possible.

Within this conceptual framework, four items can be added: traits and SMEs' status, availability of infrastructure units, the role of owner-managers, management characteristics, and government role. All these factors must be considered to fully comprehend the profile of e-commerce adoption. Several variables connected to the adoption of e-commerce that have influenced firms were uncovered during the data presentation and analysis stages of the interviews with respondents. As a result, it suggests that the broad categories of adoption predictors are mutually dependent, allowing for a comprehensive combination of components in the overall conceptual framework. The general features were deemed as an adoption factor themselves and hence were required to create the organizational adoption strategy. Therefore, a study could be able to answer associated research questions using the revised conceptual framework.

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5.1.3 Factors influencing E-commerce Adoption

R3: What are the significant factors related to the adoption of e-commerce in Jordan?

Government Support

Support from the government is critical for e-commerce adoption. It is crucial in the establishment of e-commerce technology policies that benefit the country's enterprises. Government support was found to be among the most important drivers in e-commerce adoption with respect to these study findings, with participants mentioning infrastructural improvements, financial assistance, and training programs. According to Al-Bakri (2015), government involvement is deemed to have a significant impact on the economy's growth and the dissemination of technological advancements. However, this study's findings indicated that the government has not been fully involved in assisting SMEs, it has instead focused mainly on infrastructure improvement.

Payment and Delivery Systems

For successful e-commerce activities, reliable digital payment methods are inevitable to conduct transactions. The payment systems should be accompanied by convenient and affordable delivery options to the consumers. Robust delivery systems not only contribute to e-commerce adoption but also reduce business' operational' costs. However, most study participants noted that, if not for the COVID-19 situation, consumers' preference has long been associated with cash payments upon delivery of products. According to one respondent, it was noted that even when the majority of Jordanian businesses offered cash on delivery options for online purchases, paid cash on delivery, some customers could not use digital payments. As previously stated, a lack of trust in electronic payments may explain why consumers and small businesses are fully participating in e-commerce. Among the biggest roadblocks to the widespread adoption of e-

commerce by Jordanians is skepticism in accepting credit or debit cards as well as other online payment options. The preference for physical cash payments has dominated for long the business space in Jordan, impeding the adoption of e-commerce, only that currently the customers are forced by circumstances to use online payments. The findings of this survey back up Khaskheli and Jun (2016) earlier conclusions on the impact of payment systems on e-commerce adoption.

ICT Skills

The findings disclosed that the majority of Jordanians are not well-versed in the utilization of ICT services and other internet tools. Jordan's literacy rate is the underlying factor behind the lack of technical expertise. Participants in this research believed that government has attempted to fix the availability of technical knowledge, although it would take time to be fully functional. The government has incorporated teaching programs into many schools and institutions, as well as training centers, all of which are located mainly in Jordan's major cities (Alrawabdeh, 2016). Altayyar and Beaumont-Kerridge (2016) found that technology training courses not just to raise people's awareness of online services, but also motivate and empower them to use them. Additionally, they acknowledged the importance of computer training and e-commerce awareness in fostering a positive and flexible e-commerce attitude in society.

Owner-manager Innovativeness

In this study, innovation is attributed to the owner-manager's ability in adopting the latest technologies faster than others, particularly e-commerce technologies. According to a previous study, owner-managers who were active participants in the decision-making process also had full control over everyday management operations and administrative functions (Ahmad & Siraj, 2018). Usually, owner-managers take up the responsibility of controlling their enterprise's finances and human resources and engage fully in administrative and financial roles. In this study, the

innovation capacity of some of the owner-managers was evident in the adoption of technology within the organization, particularly e-commerce. Despite being conversant with e-commerce technologies, they may be reluctant to the adoption of any technological change.

5.1.4 E-commerce Adoption and Jordan's Economy

R4: What is the current state of e-commerce adoption in the economic development of Jordan?

E-commerce adoption in Jordan is rising, which can be attributed to various factors such as government support. As mentioned, the government played a significant role in increasing technology penetration among businesses. This is after realizing the impact of the businesses to the country's economy, particularly the SMEs. Although the pandemic has significantly affected businesses in many aspects including revenue losses, it has greatly resulted in most enterprises shifting to e-commerce activities, to cope with the market dynamics.

E-commerce adoption has been a pillar in eliminating income inequality. With respect to the thematic analysis, evidently, e-commerce activities are expected to generate positive returns in terms of profit and income production by incorporating innovative business techniques. Martin et al. (2010), in this regard, it has pointed out that the capitalist's approach is restricted so as to reduce income inequalities and encourage equality in terms of income distribution. Among the businesses surveyed, most had played a significant role in reducing unemployment rates before the onset of the pandemic. Nevertheless, Lecuna (2015) pointed out that e-commerce activities and income inequality are positively related. In Jordan, SMEs make up 98% of business, which employ more individuals than any other sector.

E-commerce is emphasized as being closely linked to a country's economic development and, as a result, is referred to as a key source of job creation. Undoubtedly large organizations and

SMEs provide jobs for individuals as they are increasingly emerging with respect to increased demand. According to the survey, entrepreneurial activity can help enhance economic growth under the current COVID-19 circumstances, when economic growth has slowed, and unemployment is high. This is because entrepreneurs that take advantage of business opportunities and build new markets increase demand for workers to develop creative products. Alawamleh and Ismail (2016), studies support this point.

In Jordan, the government has recognized the contribution of e-commerce activities and the country's GDP, prompting it to provide support through initiatives as noted in this study. Governments also use venture capital to fund their start-up business activity. More particularly, the e-commerce activities of these SMEs contribute largely to the revenues. Therefore, greater financial investment in e-commerce operations has a significant impact on Jordan's GDP growth. This study has pointed out that Jordan has tried to boost technology and improve business activities in anticipation of its contribution to the economy. It tallies with Soundararajan, 2018 study. The study indicated that less developed countries that are not inclined to online businesses have lower economic growth; on the other hand, high-income developed countries with effective online businesses and entrepreneurship activities have higher economic growth.

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CHAPTER SIX

6.0 CONCLUSION

6.1 Introduction

The major goal of this research is to learn more about SMEs' adoption of e-commerce technology in Jordan, the elements driving it, and the merits acquired regarding the country's economy. A thorough model of e-commerce adoption was constructed on the basis of examining existing literature. Two hypotheses were formulated and tested. Questionnaires and semi-structured telephone interviews were used for information collection, and were analyzed using regression analysis, and thematic method. Online survey was used among the employees, while the interviews involved the managers/owners. The interview provided an insight on the situation of e-commerce implementation in Jordan and actual benefits based on qualitative data collected, which gave useful support to the discussion. With respect to findings from previous chapters, this chapter gives the study's conclusion highlights its significant contributions. The limitations and the effects of COVID-19 on the study as well as recommendations for future examination are also incorporated.

6.2 Summary of Theory and Hypothesis Development

6.2.1 Perceived Ease of Use and Perceived Usefulness on E-commerce acceptance

In this abductive study, the research explored the influence of PU and PEOU on the consumer’s intention towards e-commerce adoption. This was evaluated under two hypothesis:

H1: The PU has no direct major impact on consumers’ acceptance of e-commerce by SMEs in Jordan.

H2: The PEOU has no direct major impact on consumers’ acceptance of E-commerce by SMEs in Jordan.

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The quantitative results indicated that PU variable was a non-significant predictor of consumers' intention towards adopting e-commerce and only PEOU was a statistically significant predictor of consumers' intention towards adopting online shopping. Therefore, the researcher accepted the first hypothesis and rejected the second one. However, the quantitative outcomes from the employees' and managers' survey indicated that both PU and PEOU had a significant direct impact on the intention to adopt e-commerce. With regard to these results, the two hypotheses were rejected. The study outcomes, therefore, have implications, as discussed in the next segment.

6.2.2 E-commerce adoption in Jordan

The findings indicate that while some Jordanian enterprises implemented e-commerce in their operations, the level of acceptance is still low. The majority of them use merely basic websites, such as an online brochure or catalog, or a simple interactive website focused on advertising and client communication. Given the low maturity of e-commerce among the businesses, it is logical to assume that most of them employ only a few IT personnel. The SMEs attribute low adoption of e-commerce to various factors including financial constraints, inadequate delivery system, and customer trust.

6.2.3 Factors Affecting E-commerce Adoption in Jordan

As discussed, e-commerce adoption in Jordan is yet to reach the international level as most SMEs do not have fully functional e-commerce websites to carry out the business operations. This is attributed to various factors ranging from government, culture, and business themselves. The government has participated in boosting technological development, e-commerce in particular, however, it is yet to establish solid legal policies essential for effective e-commerce activities. The research has also disclosed that the Jordanians' culture is also a key determiner to e-commerce

adoption. Individuals lack trust on the e-commerce operations. If not for the COVID-19 most individuals still value traditional commerce. Size and structure, as well as e-commerce awareness have also emerged as key factors.

6.2.4 SMEs, E-commerce, and the Economy

The study has indicated that SMEs plays key role in the economic development in Jordan, which is boosted by e-commerce operations. It has been shown that e-commerce is significant in business operations, increasing sales due to access to vast market. In Jordan, the SMEs occupy a significant position in the country's economy. Job creations, elimination of income inequality as well as contribution to GDP are some of the benefits associated with these enterprises.

6.3 Effects of COVID-19 on Research

This research has been significantly affected due to COVID-19, with respect to the government protocols, such as lockdown. One way in which the research was affected involves the disruption of the schedule. Since the pandemic struck, the researcher had to put several data collection projects on hold and had to delay some writing.

Before the pandemic, achieving graduate program milestones in a timely manner was a priority. However, with the onset of COVD-19, the crisis introduced additional barriers that had to be navigated hence subjected to stress.

Often, the research methodology is key to the research process. The pandemic forced the researcher to alter plans concerning the methodology. Online surveys had to be relied on, due to restrictions. Moreover, most of the participants declined the request to participate in the survey, which kept on delaying the process. Given that the researcher has contacted e-commerce research during COVID-19, something that is greatly affected by the pandemic, the generalizability of data obtained during these unprecedented times may be jeopardized.

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Besides, there was a positive impact for covid-19 on e-commerce adoption by SMEs. Due to the pandemic a lot of businesses had to introduce e-commerce to their working process, where face to face interaction was really limited and they had to find a substate for it. Covid-19 showed people the importance of technology in dealing with their businesses, where it facilitates every aspect of the business from time, cost, reachability, etc.

6.4 Implications and Recommendations

6.4.1 Implications for Social Change

The implications for significant societal alteration regarding PU and PEOU include the opportunity for Jordanian leaders to better understand critical factors that impact customers' decisions towards adopting online purchasing. The understanding of organization executives could help to improve the long-term viability of internet retail. Additionally, comprehensive knowledge on elements that impact consumers' intention to adopt e-commerce by organizational leaders may help to reduce unemployment. Low rate of unemployment could help improve the living standards for workers. As a result of improving local communities' economic status, the local charities may also benefit from increased contributions. The findings of this research could provide practical guidance to Jordan's government on the importance of developing an efficient and user-friendly e-government portal that would allow Jordanians to conveniently meet their demands without wasting time travelling or waiting for basic government services. In this regard, Jordanians would have additional time to devote to community service.

Moreover, the Jordanian government should be attentive to the needs of owners of SMEs as part of its efforts to encourage them to implement e-commerce technology. It's because SMEs' owners control key activities in their businesses and bear huge influence. It is often found that most SMEs in Jordan are owned and managed by same individuals, and they have a significant influence on the decisions related to their organization. Therefore, the programs and initiatives

facilitated by the government of Jordan to enhance small businesses' technological performance need to involve SME owners. When encouraging businesses to implement e-commerce technologies in Jordan, the government's first aim should be to educate small business owners and managers concerning anticipated marketing and positive financial outcomes of using e-commerce. By increasing the SMEs owner's understanding of the potential benefits, they will tend to embrace e-commerce technology at a fast rate. Then, the government should consider training to ensure effective management of e-commerce, which will benefit both the country and individual SMEs.

6.4.2 Recommendations for Actions

Concerning the findings of the study, which pointed out that the PEOU component of the TAM has a strong influence on customers' intention towards e-commerce adoption, retailers should develop plans to establish efficient e-commerce forums, like websites which are easy to navigate. Jordan's online transactions amounted to roughly 8 million USD in 2017, and the amount is projected to rise at a rate of 9.3% every year (Ministry of Communication and Information Technology, 2018). Retailers should think about creating more effective and user-friendly websites that customers can access and interact with easily. This study indicates that PEOU influences customers' desire to adopt e-commerce, hence SMEs' owners must improve the ease of use of e-commerce forums in order to boost customers' willingness to purchase from online stores.

Despite Jordan's cultural barriers, the research indicated a significant female participation rate with respect to customer responses. Therefore, retailers should look forward to targeting young men and women since it is the age group that has a high interest in purchasing online. Rajvanshi & Mittal (2017) also pointed out that the proportion of female e-commerce consumers exceed that of males in Jordan. Given the advantages accompanying e-commerce, e-commerce growth must be visible among online businesses in Jordan. Also, the owners should take advantage of this study's findings in building navigable e-commerce platforms in which customers could interact

with easily. Also, the platforms should be flexible to interact with, as well as clarity that offers an excellent online shopping experience.

6.4.3 Implication and Recommendation for IT Vendor/Consultant

The results of the research have implications for IT vendors with the responsibility of encouraging e-commerce adoption among SMEs. IT vendors could take advantage of Jordan's low adoption level among SMEs to advertise their items and services. It is essential that they target their items at innovative SME entrepreneurs so as to optimize their chances of success. The innovative owners can be identified by their propensity for solving challenges in unexpected ways and so taking on more risk. The SMEs owners or managers who tend to be more innovative have a high likelihood of adopting e-commerce (Ghobakhloo and Tang, 2013). Furthermore, IT vendors should actively deeply highlight potential benefits of e-commerce to their clients, as well as providing assistance throughout and after the implementation process, if necessary. External help, particularly IT vendor support, is shown to be one of the decisive elements that drive SMEs in Jordan in adopting e-commerce, according to the study findings.

6.4.4 Implications and Recommendation for the SMEs owners

This research has implications for SMEs owners, particularly concerning significance of developing comprehensive knowledge on e-commerce technology. As described previously, e-commerce technology significantly impacts business operations, it changes not only the way enterprises operate, but it also influences their business perspective as well as bringing major changes in the world’s economic dynamics. Therefore, to survive a competitive global economy, large enterprises and SMEs find it necessary to embrace technology. Businesses or individuals who fail to adopt it will lag by those that embrace it. However, to facilitate effective adoption, SMEs must consider key aspects. It is important for SMEs to understand that e-commerce is not a

simple invention which can be merely accepted or rejected; E-commerce adoption takes on varying levels, as it may be complex and sophisticated and depends on the needs of the company or its financial capacity. It is critical for enterprise owners to comprehend the evolution of e-commerce adoption in order to establish an effective business plan. If SME owners become aware of the phases in adopting e-commerce, they will be encouraged to evaluate their present e-commerce level stage and determine whether or not to move to the next phase. Additionally, it will be a key to assisting SME owners in making adequate plans for their forthcoming stages. This increased knowledge of technology adoption will be critical in lowering the uncertainties surrounding e-commerce implementation.

6.5 Contribution to the Theory

This study is beneficial to theory in that it contributes positively to the literature on technology acceptance, particularly the study on e-commerce. By looking at the intentions of employees, managers, and customers towards the adoption of e-commerce, this research adds specific knowledge to existing literature concerning e-commerce usage in Jordan. Existing literature indicates a lack of research that collectively studies PEOU and PU among the three important stakeholders to e-commerce adoption: employees, owners, and customers (Alrousan & Jones, 2016). The research gives a comprehensive perspective of e-commerce adoption among SMEs in Jordan, as well as SMEs in developing nations in general. In this regard, the core of this study is both on the elements that determine small businesses' decisions to adopt e-commerce and the post-adoption implications. The creation of a framework which includes both the key variables of, and the post-adoption positive outcomes gives a comprehensive knowledge of Jordan's e-commerce adoption. It is believed that this study would serve as a basis for future theoretical framework and empirical research. The e-commerce professionals in Jordan could base their research on this study with respect to the implementation of e-commerce adoption among SMEs.

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There is due to the need for more research into e-commerce among SMEs given that the adoption is still low (Al-Bakri & Katsioloudes, 2015).

6.6 Limitation of Study

Despite this study giving a full overview of e-commerce situation among SMEs in Jordan, it bears limitations.

The research employed an online questionnaire as one of the strategies for collecting data. The approach has a number of limitations. One is that it raises the possibility that the questionnaire may not be filled in by the intended recipient as predicted by the researcher. However, the researcher was able to minimize this issue by sending the questionnaires directly to the respondent's personal emails with the help of the SMEs' owners. Despite the possibility that they were not completed by the intended recipient, the examiner must affirm the completed questionnaire in a good faith. Apart from the online questionnaire, the researcher also used structured telephone interviews during this study. Also, several weaknesses have been noted regarding using telephone interviews. For example, those lacking a telephone cannot be interviewed. Moreover, challenges are encountered among those who have hearing impairments; the researcher cannot see a sign implied by the respondent's particular face or body language; therefore, it can be difficult to ask participants sensitive issues over the phone at times. This study adopted these strategies despite its flaws. The main reason is COVID-19 restrictions, as the researcher tried to avoid personal interactions as much as possible. Also, the study did not employ face-to-face interviews as a result of time and financial constraints. However, the telephone interview is regarded as less subjective given that interviewer does not see the respondents' appearance, socio-economic, etc.

The employment of a single individual as an informant may result in single-informant bias, since one person may not capture the entire organization's perspective. However, because SMEs

are less sophisticated than huge corporations, and since many SMEs are owned and operated by a single individual who serves as the manager, owner, and even employee, bias should not be a major concern in this study.

6.7 Recommendation for Future Research

With respect to findings from the interviews, it was revealed that certain e-commerce adoptions by SMEs in Jordan were recent. Given that this research is conducted amidst the COVID-19 pandemic, their adoption may attribute to adapting to the current situation. Therefore, further studies should dig into whether they will continue with e-commerce adoption, or they will become lapsed adopters.

Future examinations can validate the strength of this research by employing diverse studies from different geographical locations. Further studies into consumers' intention towards adoption of online shopping might offer owners of SMEs with extra tools and information required for effective e-commerce implementation. Future studies may also take into account several researchers or other tools to reduce the risk of self-informant bias.

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Appendix 1

Appendix 1: Customer Questionnaire

Customers

NOTE: The purpose of this questionnaire is to gather relevant gather data concerning e-commerce activities in Jordan, which would help to enhance the efficiency of e-commerce. Thank you in advance for your participation. The following points will be observed during this study.

i) The research is mainly for academic purposes; the information gathered is not meant for business purposes.

ii) Confidentiality. We guarantee to maintain high degree of confidentiality with respect to any personal information you provide in this survey. Your information will not be shared with third parties.

iii) There are no risks associated with this survey.

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SECTION I

1. What is your age?

   - 18-20
   - 21-34
   - 35-64
   - 64+

2. What is your gender?

   - Male
   - Female

3. Educational level

   - High school
   - Undergraduate degree
   - Postgraduate degree

4. How do you characterize your self-regarding the use of technology such as (E-mails, online shopping, online reading...etc.)?

   - I use it very much
   - I use it from time to time
   - I rarely use it
   - I never used it before

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5. Please explain briefly what do you know about e-commerce?

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6. How would you rate the use of e-commerce in Jordan?

- □ Excellent
- □ Very good
- □ Good
- □ Poor

7. Have you ever used e-commerce before?

- □ Yes
- □ No

8. If YES (please specify through using reasons from below)

Check all that apply.

- □ Decrease cost and increase savings.
- □ Increase marketplaces by accessing a wide range of markets. Improve communication / quality information.
- □ Reduce information search and transaction cost.
- □ Easy to use
- □ Increase speed and accuracy with which business can obtain information Comparison of prices

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9. If NO, please choose why

Check all that apply.

- □ Lack of trust with the sources
- □ Limited financial resources
- □ Internet access problems
- □ Additional charges
- □ Poor user experience
- □ Limited online resources in the country
- □ High taxation and customs on merchandises when shopping from abroad sources
- □ Security concerns
- □ Concerns with the delivery options

If you have other positive or negative reasons from the previous question, please mention it

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10. Would you prefer e-commerce to the traditional commerce (traditional commerce: face to face transaction?

- □ Yes
- □ No

SECTION II

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The following statements are designed to determine the degree to which you perceive the usefulness of e-commerce platform.

You are asked to judge the rating for each statement by ticking (√) one rectangular box ((E-commerce is the buying or selling of products or services over the internet)

1. Using the e-commerce platform would enable me to accomplish my tasks more quickly

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

2. Using e-commerce would improve my performance for shopping.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

3. Using e-commerce platform would enhance my effectiveness for shopping.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

4. Overall, I would find e-commerce more useful

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

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5. If you have other positive or negative reasons from the previous questions, please mention it

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SECTION III

The following statements are designed to determine the degree to which you perceive the Ease of Use of e-commerce platform.

You are asked to judge the rating for each statement by ticking (√) one rectangular box (E-commerce is the buying or selling of products or services over the internet)

1. Using e-commerce platform is easy for me.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

2. I find my interaction with the e-commerce services clear and understandable

Strongly Disagree		Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

3. I would see myself using the e-commerce.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

4. If you have more specific or detailed reasons for the previous questions, please mention below:

…….

Appendix 2: Employee Questionnaire

Employees

NOTE: The purpose of this questionnaire is to gather relevant gather data concerning e-commerce activities in Jordan, which would help to improve the effectiveness of e-commerce. Thank you in advance for your participation. The following points will be observed during this study.

i) The research is mainly for academic purposes; the information gathered is not meant for business purposes.

ii) Confidentiality. We guarantee to maintain high degree of confidentiality with respect to any personal information you provide in this survey. Your information will not be shared with third parties.

iii) There are no risks associated with this survey.

SECTION I

1. What is your age?

- 18-20
- 21-34
- 35-64
- 64+

2. What is your gender?

- Male
- Female

3. Educational level

- High school
- Undergraduate degree
- Postgraduate degree

4. What is your position in the company?

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5. Please briefly specify the nature of your company

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6. How do you characterize your self-regarding the use of technology such as (E-mails, online shopping, online reading...etc.)?

- o I use it very much
- o I use it from time to time
- o I rarely use it
- o I never used it before

7. Does your company have a website?

- o Yes
- o No

8. Please explain briefly what you know about e-commerce

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9. How would you rate the use of e-commerce in Jordan?

- o Excellent
- o Very good
- o Good
- o Poor

10. Have you ever used e-commerce?

- Yes
- No

11. If YES (please specify through using reasons from below)

Check all that apply.

- Decrease cost and increase savings.
- Increase marketplaces by accessing a wide range of markets.
- Improve communication / quality information.
- Reduce information search and transaction cost.
- Easy to use
- Increase speed and accuracy with which business can obtain information
- Comparison of prices

12. If NO, please choose why

Check all that apply.

- Lack of trust with the sources Limited Financial resources Internet access problems Additional charges
- Poor user experience
- Limited online resources in the country
- High taxation and customs on merchandises when shopping from abroad sources
- Security concerns
- Concerns with the delivery options

If you have other positive or negative reasons from the previous question, please mention it

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13. Would you agree if the company that you are working for is going to adopt e-commerce to be its approach in dealing with business (please explain

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14. Would you prefer e-commerce to the traditional commerce (traditional commerce: face to face transaction?

- ☐ Yes
- ☐ No

15. Throughout the research, it has been found that there were some common challenges that are facing SMEs in Jordan, which points do you agree with

Check all that apply.

- ☐ Financing

- Taxation
- Untrained business owners in technical and managerial skills
- Due to the low salaries most of the skilled employees leave SMEs to work for bigger companies
- Many SMEs in Jordan have failed to adopt modern technologies due to a different reason that has been discussed later in this research.

If you have any other challenges, please mention it

SECTION II

The following statements are designed to determine the degree to which you perceive e-commerce to be useful your workplace.

You are asked to judge the rating for each statement by ticking (√) one rectangular box (E-commerce is the buying or selling of products or services over the internet)

1. E-commerce technology enables my company to accomplish specific task more quickly.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

2. E-commerce technology improves my job performance.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

3. E-commerce technology makes it easier to do my job.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

4. I would find e-commerce technology useful in my job.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

5. If you have more specific or detailed reasons for the previous questions, please mention it.

_____

_____

SECTION III

The following statements are designed to determine the degree to which you perceive the ease of use of e-commerce in your workplace.

You are asked to judge the rating for each statement by ticking (√) one rectangular box. (E-commerce is the buying or selling of products or services over the internet)

1. The skills required to learn to operate e-commerce technology would be easy.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

2. Interacting with e-commerce technology would be flexible.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

3. My interaction with e-commerce technology would be clear.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

4. Integrating these technologies into our current work practices would be easy

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

5. It would be easy for me to become skillful at using e-commerce technology.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

6. Our organization will definitely use the e-commerce technology in the near future.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

7. If you have more specific or detailed reasons for the previous questions, please mention it

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

Appendix 3: Owner and Manager Questionnaire

Owners andManagers

NOTE: The purpose of this questionnaire is to gather relevant gather data concerning e-commerce activities in Jordan, which would help to improve the effectiveness of e-commerce.

i) Thank you in advance for your participation. The following points will be observed during this study.

ii) The research is mainly for academic purposes; the information gathered is not meant for business purposes.

iii) Confidentiality. We guarantee to maintain high degree of confidentiality with respect to any personal information you provide in this survey. Your information will not be shared with third parties.

iv) There are no risks associated with this survey.

SECTION I

1. What is your age?

□ 18-20

□ 21-34

□ 35-64

□ 64+

2. What is your gender?

□ Male

□ Female

3. What is your position in the company?

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4. Please briefly specify the nature of your company

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5. How many employees do you have in the company?

□ Less than 51 employees

□ 51 - 150 employees

□ 150 - 250 employees

6. How do you characterize your self-regarding the use of technology such as (E-mails, online

shopping, online reading...etc.)?

- I use it very much
- I use it from time to time
- I rarely use it
- I never used it before

7. Does your company have a website?

- Yes
- No

8. Please explain briefly what you know about e-commerce

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9. How would you rate the use of e-commerce in Jordan?

- Excellent
- Very good
- Good
- Poor

10. Have you ever thought of introducing or introduced e-commerce to your company?

- Yes
- No

11. If YES (please specify through using reasons from below)

Check all that apply.

- Increase cost and savings.
- Improved productivity by creating new relationships through customer/supplier and other strategic partners.
- Increase customers by accessing a wide range of different customers.
- Improve communication /quality information
- Reduce information search and transaction cost.
- Easy to use
- Increase speed of business.
- Decrease marketing cost

12. If NO, what are the reasons that are stopping your company from introducing e-commerce to it' strategy

Check all that apply.

- Limited Financial resources
- lack of top management support
- Organizational resistance to change
- Lack of awareness of e-commerce importance

- Lack of qualified stuff
- Government Regulations
- Security concerns and lack of trust
- Lack of popularity of online marketing and sales Perceived complexity in e-commerce implementation
- Lack of technical skills and IT knowledge among employees
- Lack of e-commerce infrastructure

If you have other positive or negative reasons from the previous question, please mention it

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13. Are you aware that Jordan has developed a national e-commerce strategy to mobilize the country's technical and commercial potential, as well as to utilize e-commerce in

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the trading of products and services between enterprises and consumers? and what are your comments regarding it?

14. Throughout the research, it has been found that there were some common challenges that are facing SMEs in Jordan, which points do you agree with:

Check all that apply.

- Financing
- Taxation
- Untrained business owners in technical and managerial skills
- Due to the low salaries most of the skilled employees leave SMEs to work for bigger companies
- Many SMEs in Jordan have failed to adopt modern technologies due to a different reason that has been discussed later in this research.

if you have any other challenges, please mention it

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15. Do you think that adopting e-commerce by your company to be the new approach in dealing with the business will improve the situation of the company? please explain?

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16. Are you aware of any government programs that is supporting SMEs? If yes, please

mention it below.

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17. How would you comment on the current situation of your organization regarding COVID-19 pandemic?

SECTION II

The following statements are designed to determine the degree to which you perceive the usefulness of e-commerce platform.

You are asked to judge the rating for each statement by ticking (√) one rectangular box ((E-commerce is the buying or selling of products or services over the internet)

1. Using e-commerce enables me to accomplish tasks more quickly in my job

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

2. Using e-commerce improves my performance in my job.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

3. Using the e-commerce makes it easier for me to do my job.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

4. I find e-commerce to be useful in my job

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

SECTION III

The following statements are designed to determine the degree to which you perceive the ease of use of e-commerce in your workplace.

You are asked to judge the rating for each statement by ticking (√) one rectangular box. (E-commerce is the buying or selling of products or services over the internet)

1. Learning to operate e-commerce technology is easy for me.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

2. I find it easy to get e-commerce technology to do what I want it to do.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

3. I find e-commerce technology to be flexible to interact with

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

4. Find e-commerce technology to be flexible to interact with

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree

5. Assuming e-commerce technology will be available in my job, I predict that I will use it in the future.

Strongly Disagree	Slightly Disagree	Disagree	Neither	Agree	Slightly Agree	Strongly Agree