

**THE EFFECT OF TECHNOLOGICAL,  
ORGANIZATIONAL, AND ENVIRONMENTAL  
FACTORS ON ADOPTION OF ELECTRONIC  
COMMERCE BY SMALL AND MEDIUM  
ENTERPRISES IN KUWAIT: THE ROLES OF  
ATTITUDE AND INNOVATIVENESS**

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**UNIVERSITI SAINS MALAYSIA**

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by

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## LIST OF ABBREVIATIONS

ATT	Attitude of Owner/Manager
AVE	Average Variance Extracted
B2B	Business to Business
B2C	Business to Customer
CAIT	Central Agency for Information Technology
CMB	Common Method Bias
COP	Competitive Pressure
DOI	Diffusion of Innovation Theory
DV	Dependent Variable
ECA	E-commerce adoption
E-commerce	Electronic Commerce
F2	Effect Sizes
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
HTMT	Heterotrait Monotrait Ratio
IBK	Industrial Bank of Kuwait
ICT	Information and Communication Technology
ITK	IT Knowledge
IV	Independent Variable
KD	Kuwaiti Dinar
KNF	Kuwait National Fund for SMEs Development
M	Mean

MENA	the Middle East and North Africa
ORD	Organizational Readiness
PACI	Public Authority for Civil Information
PCO	Perceived Compatibility
PCX	Perceived Complexity
PEoU	Perceived Ease of Use
PLS-SEM	Partial Least Squares-Structural Equation Modeling
PRA	Perceived Relative Advantage
PU	Perceived Usefulness
Q2	Predictive Relevance
R2	Coefficient of Determination
SCP	Supplier/Customer's Pressure
SD	Standard Deviations
SME	Small and Medium Enterprise
SPSS	Statistical Package for Social Science
TAM	Technology Acceptance Model
TOE	Technology-Organization-Environment framework
UAE	United Arab Emirates
UNDP	United Nations Development Programme
USA	United States of America
VIF	Variance Inflation Factor
WEF	World Economic Forum
WTO	World Trade Organization

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**KESAN FAKTOR TEKNOLOGI, ORGANISASI, DAN PERSEKITARAN  
TERHADAP PENERAPAN PERDAGANGAN ELEKTRONIK OLEH  
PERUSAHAAN KECIL DAN SEDERHANA DI KUWAIT: PERANAN SIKAP  
DAN DAYA PEMBAHARUAN**

**ABSTRAK**

Sungguhpun banyak usaha telah dilakukan untuk mengkaji penerapan perdagangan elektronik atau E-dagang, masih tidak banyak yang diketahui mengenai penerapan dalam kalangan perusahaan kecil dan sederhana (PKS) di Kuwait. Oleh itu, terdapat keperluan untuk mengkaji penentu penting yang menyumbang kepada penerapan E-dagang di Kuwait. Secara khusus, peranan sikap sebagai perantara terhadap penentu-penentu ini dan peranan daya pembaharuan sebagai penyederhana yang memberikan kesan kepada penerapan E-dagang adalah penting untuk diselidik. Gabungan teori penyebaran inovasi (DOI), kerangka teknologi-organisasi-persekitaran (TOE), dan model penerimaan teknologi (TAM), kajian ini mengkaji hubungan di antara persepsi kelebihan relatif (PRA), persepsi kesesuaian (PCO), persepsi kerumitan (PCX), kesediaan organisasi (ORD), pengetahuan teknologi maklumat (ITK), tekanan kompetitif (COP), tekanan pembekal/pelanggan (SCP), dan penerapan E-dagang PKS. Tambahan lagi, kajian ini mengkaji peranan sikap sebagai perantara terhadap hubungan-hubungan ini, serta peranan daya pembaharuan sebagai penyederhana terhadap penerapan E-dagang. Data telah dikumpulkan dari PKS yang beroperasi di Kuwait menggunakan reka bentuk kajian secara keratan rentas. Daripada 847 soal selidik yang telah diedarkan, hanya 259 maklum balas telah digunakan untuk tujuan analisis lanjutan dengan kadar maklum balas yang sah

sebanyak 30.57%. Model Persamaan Berstruktur Kuasa Dua Terkecil Separa (PLS-SEM) digunakan untuk menguji hipotesis kajian. Hasil kajian menunjukkan bahawa (1) PRA dan COP adalah penentu utama penerapan E-dagang oleh PKS di Kuwait, (2) sikap pemilik/pengurus PKS terhadap penerapan E-dagang bergantung kepada tahap PRA, PCO, PCX, ORD, dan COP, (3) sikap mempunyai hubungan positif yang kuat dengan penerapan E-dagang, (4) sikap memainkan peranan pengantara di antara PRA, PCO, PCX, ORD, COP, dan penerapan E-dagang. Penemuan kajian dapat membantu pengurus PKS untuk merancang dan mempromosi penerapan E-dagang dan mengembangkan lagi perniagaan mereka. Pembuat polisi juga boleh membangunkan dasar yang lebih berfokus untuk menggalakkan PKS untuk menerapkan E-dagang. Selain itu, pihak kerajaan boleh mengembangkan lagi inisiatif nasional untuk memotivasi para pengurus PKS ke arah penerapan E-dagang. Kajian ini dapat dijadikan sebagai asas untuk kajian akan datang terutamanya berkaitan dengan inovasi dan penerapan E-dagang.

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**ABSTRACT**

Although much has been done to investigate the adoption of E-commerce, little is known about its adoption among small and medium enterprises (SMEs) in Kuwait. There is a need to examine significant determinants that contribute to E-commerce adoption in Kuwait. More specifically, the mediating role of attitude on these determinants and the moderating role of innovativeness that may affect E-commerce adoption needs to be investigated. Combination of diffusion of innovation (DOI) theory, technology-organization-environment framework (TOE), and technology acceptance model (TAM), this study examined the relationship between perceived relative advantage (PRA), perceived compatibility (PCO), perceived complexity (PCX), organizational readiness (ORD), IT knowledge (ITK), competitive pressure (COP), suppliers/customers' pressure (SCP), and SMEs' E-commerce adoption. Furthermore, the study examined the mediating role of attitude on these relationships as well as the moderating role of innovativeness on the attitude - E-commerce adoption link. Data were collected from the SMEs operating in Kuwait using a cross-sectional study design. Out of the 847 questionnaires were distributed, only 259 responses were used for further analysis making a valid response rate of 30.57%. Partial Least Squares-Structural Equation Modeling (PLS-SEM) was used

to test the hypotheses. Results supported that (1) PRA and COP are the main determinants of E-commerce adoption by SMEs in Kuwait, (2) attitude of SMEs' owners/managers toward E-commerce adoption depends on the degree of PRA, PCO, PCX, ORD, and COP, (3) attitude has a strong positive relationship with E-commerce adoption, (4) the attitude plays a mediational role between PRA, PCO, PCX, ORD, COP, and E-commerce adoption. The findings will help managers of SMEs to plan and promote the E-commerce adoption and grow their businesses. Policymakers can develop more focused policies to encourage SMEs to adopt E-commerce. In addition, the government can extend national initiatives to motivate the managers of SMEs toward E-commerce adoption. This research could serve as a base for future studies on the adoption of E-commerce and innovation.

# CHAPTER 1

## INTRODUCTION

### 1.1 Background of the Study

The relationship between trade and technology has been around for a long time and will continue to do so for a long time (Choshin & Ghaffari, 2017). Information and communication technology (ICT) has been identified as one of the four significant pillars of the information economy (Ceptureanu, Ceptureanu, Tudorache, & Zgubea., 2012) that has led to many developments in several fields such as global commerce (Choshin & Ghaffari, 2017). Hence, the processes inherent in many areas such as economy, commerce, banking, and customs have evolved and changed significantly (Rahayu & Day, 2015). ICT has transformed business organizations worldwide to become competitive (AlBar & Hoque, 2017; Alrawabdeh, Salloum, & Mingers, 2012; Gutiérrez-Leefmans & NavaRogel, 2016), since it involves increasing performance through automation, accessing information, and reducing transaction costs (Verdugo, 2019). Specifically, internet-based technologies enable companies to be competitive or even exceed competitors' performance in sales and customer relationship (Bianchi & Mathews, 2016).

E-commerce is a business model that goes beyond traditional methods and is thus seen as a style of business innovation (Choshin & Ghaffari, 2017; Rahayu & Day, 2015; Sasu, 2017). E-commerce enables the business information sharing, exchange of goods and services, payments, creating and maintaining business relationships, and conducting business transactions via telecommunications networks (Dachlan, Dwiridotjahjono, & Prabowo, 2017). E-commerce adoption can offer different opportunities for enterprises to gain a competitive advantage by facilitating



communication for business development, improvement in product and service delivery, reduction of costs, and time-saving (Gharegozi, Faraji, & Heydari, 2011; Jahanshahi, Zhang, & Brem, 2013; Khoo, Ahmi, & Saad, 2018). E-commerce also increases the interaction between customers and suppliers, encourages the emergence of new products and services, enhances customers' satisfaction, and globalization of business (Choshin & Ghaffari, 2017; Gharegozi et al., 2011; Grandón & Ramírez-Correa, 2018; Pant & Gupta, 2016; Yang, Pang, Liu, Yen, & Tarne, 2015).

E-commerce has grown exponentially in recent years since its inception without any signs of decline. Retail E-commerce sales of 2290 billion US dollars were transacted worldwide, and are expected to rise to 2774 billion in 2018 and 4878 billion in 2021 (Dobrevá, 2018). In the United States of America (USA), E-commerce retail sales accounted for 8.9 percent of overall retail sales, increasing by 16% to \$453.5 billion in 2017 (Cordero & levy, 2017). China accounted for approximately 54.7% of the global E-commerce market (eMarketer, 2019) and revenue in the E-commerce market was \$ 636.087 billion in 2018 (Lipsman, 2019). In 2019, E-commerce sales in China amounted to \$ 1.935 trillion, which is more than three times that of the USA, which ranked second with \$ 586.92 billion. The dominance of China and the USA began to assuage as emerging countries such as Malaysia (22.4% growth in 2019), India (31.9%), Philippines (31%), and South Korea (18.1%) actively increased their E-commerce practices (eMarketer, 2019). The E-commerce market in the Middle East and North Africa (MENA) region reached \$ 8.3 billion in 2017, and it is expected to reach \$ 28.5 billion by 2022. In the countries of the Gulf Cooperation Council (GCC), the Saudi E-commerce market is estimated to grow 27% annually to reach \$ 10 billion, which represents 8% of total retail sales. Likewise, the United Arab Emirates (UAE) E-commerce market will grow by 31% annually to reach \$ 9 billion (Menabytes,

2019). While in Kuwait, the total E-commerce sales amounted to \$ 670 million in 2017 and it is expected to reach \$ 1.07 billion by the year 2020, with a growth rate of 62% (Lu et al., 2019). Therefore, while rapid growth is observed in developing Asian countries, the western world still dominates global E-commerce.

Small and medium enterprises (SMEs) can take advantage of the many benefits offered by E-commerce (Al-Sharafi, Atharh, and Abu Shanab, 2017; Milli, 2013) to improve their performance and competitive advantages (Hamad, Elbeltagi, & El-Gohary, 2018). The role that E-commerce activities play in SMEs is critical these days to establish a firm foundation in marketing and production (Ramayah, Ling, Taghizadeh, & Rahman, 2016; Verdugo, 2019). This is imperative, as SMEs are key factors that determine the economic growth of a country (Al-Sharafi, Herzallah, Alajmi, Mukhtar, Arshah, & Eleyan, 2018). SMEs play critical roles as indicators of electronic and global commerce Economy (Choshin & Ghaffari, 2017). SMEs may lose business if they do not efficiently invest in expanding and improving their E-commerce platforms (Mazzarol, 2015). For instance, the World Trade Organization (WTO) (2013) mentioned that SMEs in developing countries would lose significant opportunities in both efficiency and profitability if they do not sufficiently exploit information technology (IT). This is because IT simplifies SMEs' access to world markets in developing countries to operate more proficiently and effectively (Choshin & Ghaffari, 2017; Wikibooks, 2014). Ultimately, the effectiveness of the benefits of E-commerce is determined by having a positive attitude among owners/managers of SMEs, which is critical for the E-commerce adoption system (Ahmad, Abu Bakar, Faziharudean, & Zaki, 2015; Hamad et al., 2018 Ramayah et al., 2016).

Ever since, given the significance of E-commerce for SMEs, many researchers have focused on the conditions that support its adoption and the barriers that hinder it

(Al-Somali, Gholami, & Clegg, 2011; Khoo et al., 2018; Kurnia, Choudrie, Mahbubur, & Alzougool 2015; Solaymani, Sohaili, & Yazdinejad, 2012; Verdugo, 2019). Research has shown that despite the critical interest it receives from governments, E-commerce adoption among SMEs is much lower compared to large businesses, especially in developing countries (Grandón & Ramírez-Correa, 2018; Hamad et al., 2018; Ramayah et al., 2016; Sin, Osman, Salahuddin, Abdullah, Lim, & Sim, 2016). This point is of great significance taking into consideration that SMEs are an essential pillar of the economy by creating jobs and starting fast economic growth (Dachlan et al., 2017). SMEs make a critical contribution to the overall improvement of economic stability through the reduction of unemployment and improving the gross domestic product (GDP) (Ayyagari, Demirguc, Kunt, & Maksimovic, 2011; Rasheed, Rahman, Rahman, & Abid, 2016). SMEs contributed 43.5% to total employment and created approximately 57.8% of total new jobs in 2015 (Yoshino & Wignaraja, 2015). In Asia, the SME sector contributed about 62% to total employment and about 42% to GDP (Borneo Post, 2015). SMEs contribute to developing economies with almost 33% of GDP and 45% of total employment (Govinnage & Sachitra, 2019). This also affirms its role in the social system as it reportedly helps reduce poverty (Bayyoud & Sayyad, 2016). In this regard, previous research that examined the role of E-commerce adoption in SMEs stressed the need to investigate the potential technological, organizational, and environmental (TOE) factors to elucidate the effects of these variables on E-commerce adoption by SMEs (Hamad et al., 2018; Rahayu & Day, 2015; Ramayah et al., 2016).

In Kuwait, for example, 90% of the firms are classified as SMEs, although they only account for about 3% of its GDP and 23% of the total workforce of the country (Devarajan & Mottaghi, 2016). It is considered as one of the first countries to

permit the use and enable public access to the Internet, and a top mover in the Networked Readiness Index (World Economic Forum WEF, 2016). However, the use of E-commerce platforms as a medium for performing business is minimal (Lu et al., 2019). Although it is far behind the E-commerce rate of the developed economies (Al-Alawi & Al-Ali, 2015; MENA, 2012). Al-Fadhli (2011) noted that only 28% of SMEs have commenced on E-commerce adoption. In Kuwait, SMEs still have a deficient capital to invest in such advanced technology, particularly E-commerce systems (Lu et al., 2019; MENA, 2012). However, due to the deficiency of research in area, the low level of E-commerce adoption by SMEs in Kuwait is still not fully recognized.

The literature points out some technical and non-technical challenges associated with the low adoption of E-commerce technology, particularly in developing countries. It has been observed that the attitude toward using E-commerce, lack of infrastructure and organizational resources, and lack of basic awareness and knowledge linked to E-commerce, reduce the propensity of SMEs to adopt E-commerce (Arawwawala & Gunawardena, 2017; Esmailpour, Hoseini, & Jafarpour, 2016; Savrul, Incekara, & Sener, 2014; Solaymani et al., 2012; Verdugo, 2019). Another issue is the perceived complexity of using E-commerce technology, a shortage of skilled workers, and the cost of adequate software may increase the resistance among SMEs' owners to adopt the E-commerce system (Abualrob & Kang, 2016; Netcoach, 2014; Wikibooks, 2014). Likewise, a study by Al-Alawi and Al-Ali (2015) addressed several issues that associated to the implementation of E-commerce practices by SMEs in Kuwait including the lack of IT knowledge and awareness on the benefits of the E-commerce system, and the lack of technical infrastructure. Understanding these issues requires the recognition of the potential factors that determine SMEs' adoption of E-commerce in Kuwait.

In this context, some researchers have proposed that the TOE factors are an important factors to explain the SMEs' adoption of E-commerce (Alrousan & Jones, 2016; Ghobakhloo, Arias-Aranda, & Benitez-Amado, 2011; Hamad et al., 2018). TOE framework has been widely investigated for its capability to explain the impact of factors that may affect SMEs' adoption of E-commerce in developing countries (Ahmad et al., 2015; Awa, Ojiabo, & Emecheta, 2015; Ghobakhloo et al., 2011; Hamad et al., 2018; Lip-Sam & Hock-Eam, 2011; Rahayu & Day, 2015). This is can be confirmed by the opinions of contemporary researchers (Hsu, Ray, & Li-Hsieh, 2014; Maduku, Mpinganjira, & Duh, 2016; Oliveira, Thomas, & Espadanal, 2014) who view TOE as a comprehensive perspective on understanding the factors influencing the IT systems adoption.

At the same time, Diffusion of Innovation Theory (DOI) is frequently found investigating the various innovative and organizational characteristics that influence SMEs' adoption of E-commerce (Hamad et al., 2018; Rahayu & Day, 2015). The Technology Acceptance Model (TAM) also provides a promising explanation of the variables related to tracking the influence of internal factors on a situation as well as adopting innovation (Rengaraj & Shibu, 2020). Recent studies on the adoption of E-commerce, in general, are based on TAM (Davis, 1989) or extensions to it by including one variable for example interest, as one of the predictors of innovation (Al-Bakri & Katsiolouides, 2015; Al-Jabri & Sohail, 2012; Alam, Ali, & Jani, 2011). Additionally, other TAM-based researchers have instead suggested that only a subset of the traits of innovations are mediated by the attitudes of decision-makers (Vagnani & Volpe, 2017).

Consequently, this research relies mainly on the TOE model as the theoretical framework supported by the DOI and TAM models, is the appropriate approach to study the adoption of E-commerce in developing countries, because E-commerce is

enabled by the attributes of innovation, driven by the organization characteristics, and affected by environmental factors (Ilin, Ivetić, & Simić, 2017). In developing countries, the effects of these technological, internal organizational, and environmental (TOE) factors are more evident because of the basic facilities for implementing E-commerce (Al-Sharafi, et al., 2018; Herzallah & Mukhtar, 2016). The desire to specify the factors that influence the success of E-commerce adoption as a new technique in organizations has attracted immense research interest (Ahmad et al., 2015; Khoo et al., 2018; Solaymani et al., 2012). Thus, examining these TOE factors in the Kuwait perspective will add significant value to the SMEs' owners/managers and all other stakeholders to adopt E-commerce.

In this regard, achieving maximum E-commerce adoption is a function of the TOE contexts and the extent to which owners/managers positively have an attitude toward adopting E-commerce applications (Ahmad et al., 2015; Ramayah et al., 2016). Among the TOE factors, the attributes of innovation, namely relative advantage, compatibility, and complexity can significantly affect the SMEs' adoption of E-commerce (Ahmad et al., 2015; Ghobakhloo & Tang, 2013; Sin et al., 2016 Wanyoike, Mukulu, & Waititu, 2012). Furthermore, there is a relationship between the compatibility, complexity, relative advantage, and decision-makers' attitudes toward technology adoption (Alejandro Silva, Montoya, & Valencia, 2019; John, 2015; Mazhar, Rizwan, Fiaz, Ishrat, Razzaq, & Khan, 2014; Vagnani & Volpe, 2017).

However, extant literature suggests that the possibility of adopting E-commerce increases when the management of SME has a more positive attitude toward the perceived relative advantage of E-commerce adoption (Ghobakhloo & Tang, 2015; Grandón & Ramírez-Correa, 2018; Poorangi, Khin, Nikoonejad, & Kardevani, 2013). Therefore, it is suitable to perform further research on the influence of the constructs

of the owner/manager's attitude and innovativeness on E-commerce adoption (Govinnage & Sachitra, 2019). In turn, the readiness and IT knowledge of an organization are organizational factors that stimulate SMEs to adopt E-commerce (Rahayu & Day, 2015; Mahroeian, 2012; Al-Bakri & Katsiolouides, 2015; Hajli, Sims, & Shanmugam, 2014). Another environmental construct (pressure from competitors and suppliers/customers) is a critical factor that should be considered (Chen, Windasari, & Pai, 2013; Hamad et al., 2018; Kurnia, Choudrie, Mahbubur, & Alzougool 2015).

On the other hand, empirical evidence also exists in the insignificant/negative relationship between the adoption of E-commerce in SMEs and TOE factors, namely relative advantage (Govinnage & Sachitra, 2019), organizational readiness (e.g., Kurnia, Choudrie, Mahbubur, & Alzougool, 2015), compatibility (e.g., Elbeltagi, Sharji, Hardaker, & Elsetouhi, 2013; Hamad et al., 2018; Mahroeian, 2012; Wanyoike et al., 2012), customer pressure (Qashou & Saleh, 2018), and IT knowledge (Ramayah et al., 2016). A recent meta-analysis by Vagnani and Volpe (2017) and Vagnani, Gatti, and Proietti (2019) conducted on the adoption of innovations by companies also reported contradictory results between features of innovations and adoption. The reviews recommend that future studies should also examine the role of potential moderating or mediating factors/variables in these relationships.

Concerning the mediating variables, scholars such as Talukder, Harris, and Mapunda (2008) and Vagnani and Volpe (2017) showed that there is a mediation role of the attitude related to decision-makers in organizations between the attributes of innovations and the decision to adopt an innovation (Talukder, Harris, & Mapunda, 2008; Vagnani & Volpe, 2017). Additionally, there are limited empirical studies on the mediating role of attitude on the relationship between TOE factors and SMEs' E-

commerce adoption. Hence, this study will add more depth to the research area by investigating the indirect relationship between contexts of TOE and SMEs' adoption of E-commerce through the mediating role of owners/managers' attitudes toward the adoption of E-commerce.

However, it has been found that there is a lack of empirical studies that examine TOE factors to SMEs' E-commerce adoption in developed countries compared to developing countries (Al-Somali et al., 2011; Hamad et al., 2018; Rahayu & Day, 2015). More specifically, in Kuwait there are few empirical studies on TOE factors and E-commerce adoption among SMEs, hence the need for further investigation in this research area (Al-Alawi & Al-Ali, 2015). Besides, the moderating role of innovativeness on E-commerce adoption of SMEs, when examining the attitude, is still not clear. Consequently, this research provides insight to understand the moderating of innovativeness that can influence attitude on SMEs' adoption of E-commerce.

## **1.2 Overview of Kuwait**

Kuwait is a very small, rich, relatively open economy located in the eastern part of the Arabian Gulf on 17,818 square kilometers of land. The capital of Kuwait is Kuwait City. Kuwait is bounded by Saudi Arabia, Iraq, and the Arabian Gulf. Kuwait is a wealthy trade center for many centuries and comes to greater international importance at the head of the Arabian Gulf and oil revenues because of its strategic location (The Library of Congress, 2015). Kuwait is an oil resource-rich country where the oil and gas sector offers about 40% of GDP and about 92% of export revenues (OPEC, 2019). The population of Kuwait is about to be 4,449,393 in 2016 (Public Authority for Civil Information PACI, 2017). As about 70% of the population are expatriates, 1.4 million are immigrants from Asia, and 1.1 million are from Arab



countries (PACI, 2017). In 2015, Kuwait achieved, for the first time in fifteen years, a budget deficit after several decades of high oil prices. As such, the Kuwaiti government has tried to minimize this deficit by cutting spending on support for the domestic people, however, with limited success (Forbes, 2016).

The 2015 annual economic report of the Central Bank of Kuwait stated that Kuwaiti GDP exceeded 34 billion Kuwaiti dinars in 2015, a decrease of about 25 percent compared to the prior year. The GDP reached 34,314 million Kuwaiti dinars at prices of 2015 (a decrease of 25.9% compared to 2014). While the inflation rate, which measured by the relative change in the general consumer price index (CPI), reached 3.3% in 2015 compared to 2.9% in 2014. Furthermore, the growth average of the full workforce in Kuwait compassed 4.8% in 2015, while the growth average of the workforce raised to 3.2% from 2.9% in 2014. On the other hand, estimates show that non-oil GDP increased at present prices during 2015 by 3%, while oil GDP displayed a decrease of 46.2%. According to the Index of Economic Freedom (2018), oil production remains dominant despite the efforts of the Kuwaiti government to improve and diversify the Kuwaiti economy.

The private profit sector relies mainly on government spending and expats. The labor market in Kuwait is somewhat fragmented, while the public sector appoints about 80 % of the labor force, foreigners are mostly engaged in the private sector (Index of Economic Freedom, 2018). According to the Indexmundi Index (2018), the budget surplus remained about 30% of GDP, which led to higher budget expenses, especially a rise in wages for many employees in the public sector, in addition to an increase in shares to the Future Generations Fund in Kuwait.

### **1.2.1 Small and Medium Enterprises in Kuwait**

Global or regional consensus on the definition of SMEs so far does not exist. SME's definitions differ widely among countries. There is no single broadly approved definition of SME terminology, including Kuwait that lacks a standardized definition of SMEs. The definition of a small firm varies according to the number of workers or the value of the assets across countries. With regards to Gulf countries, even in the same region, there are several different definitions for SMEs that influenced by the economic situation of the country. For example, small-sized enterprises are organizations between 3 and 49 workers in Saudi Arabia; less than 20 workers in UAE; between 6 and 25 workers in Oman; between 11 and 50 workers in Bahrain; between 11 and 50 workers in Qatar in trade and service (Ramadhan & Girgis, 2018). The USA sets a limit of 500 employees, while the European Union sets 250 employees (Alzahrani, 2019)

In Kuwait, where most SMEs operate on a very small scale, like workshops, shops, and offices, and that is not covered by the present definitions. Hence, it is hard to specify SMEs based on clear and comprehensive criteria (Al-Alawi & Al-Ali, 2015). Industrial Bank of Kuwait (IBK) avers that the widely accepted definition in Kuwait for SME is any economic project (i.e., literal, commercial, industrial, service, intellectual and technological) directly contributes to developing and diversifying the sources of local income, meeting the needs of local or external market, providing job chances for citizens if possible, and enhancing the value of self-employment and self-dependence in the areas of economic activity (Ramadhan & Girgis, 2018).

The definition of SMEs in Kuwait can be viewed from different perspectives. Hertog (2010), reported that the SMEs' present definitions in Kuwait, mostly depend on capital standards, while the number of workers does not show to be used as a

standard of size by formal institutions to facilitate the access to finance and administrative burden of SMEs. For example, IBK uses the capital of 500,000 Kuwaiti Dinars (the US \$ 1.8 million) to separate SMEs from large projects. While the law (98/2013) defines eligible SMEs in terms of employees as firms that employ 1 to 50 Kuwaiti laborers with financing needs that do not exceed 500 thousand Kuwaiti dinars. However, the definition of SMEs as stipulated in Law No. 98/2013 is insufficient and limited in line with global and regional definitions (Ramadhan & Girgis, 2018). This definition suffers from shortcomings, as it limited the companies to the Kuwaiti workers, and neglected the others non-Kuwaiti workers who constitute a large percentage of the workforce. In short, modern definitions should be made to avoid the many flaws related to present definitions in SMEs. The Kuwait National Fund (KNF) grouped companies into small, medium, and large companies based on the capital of these enterprises. More specifically, small enterprises as enterprises with capital do not exceed 250,000 KD and medium enterprises as enterprises with capital do not exceed 500,000 KD (KNF, 2013).

### **1.2.1(a) Economic and Social Importance of SMEs**

SMEs in Kuwait are better able to provide jobs than factories and major projects. As the fact that more than 90% of establishments in all industries are SMEs and the challenge is to transform these into significant contributors to job creation and economic output (KNF, 2015). Kuwait has around 33,000 SMEs (World Bank, 2015). However, Bertelsmann Stiftung's Transformation Index (BTI) (2012) stated that the Kuwaiti government was lagging in the attention that SMEs could play in the local economy. The contribution of SMEs, however, to GDP in Kuwait remains low. A study by Devarajan and Mottaghi (2016) reports that SMEs in Kuwait is one of the

lowest compared to the developed countries, whereas their contribution to GDP is only 3%. This is an indication that SMEs in Kuwait are not competitive when compared to those SMEs in high-income countries such as Japan (57%), Spain (64%), France (56%), Austria (44%), Canada (43%), Australia (33%), and the USA (50%).

In most of the GCC countries, the SME sector has contributed to the GDP between 15% and 40% (The United Nations Development Programme UNDP, 2011) and makes up more than 90 percent of private companies in all countries of the GCC (Ramadhan & Girgis, 2018). Also, the Kuwaiti private sector and small and medium enterprises' contribution to employment lacks the real contribution, as the majority of the Kuwaiti workforce is currently employed by the government (Kuwaiti's SME report, 2017). The SME sector is not presently providing enough strength to achieve the economic diversification goals of the governments. Kuwaiti SMEs employ only about 23% of the total workforce, which is lower than half of the employment numbers of SMEs in both developed and emerging economies (Devarajan & Mottaghi, 2016). Therefore, it is necessary to develop the SME sector in Kuwait to play an essential role in creating job opportunities over the coming years.

### **1.2.1(b) Contribution of the Kuwait Government to SMEs**

Kuwait is constantly seeking to diversify its economy away from dependence on oil and has an ambitious trend to transform itself into a commercial and financial center as highlighted (Kuwaiti's SME report, 2017). The government of Kuwait is making tremendous efforts to build a robust financial system to aid the development of Kuwaiti SMEs and is believed to be essential to promoting long-term economic diversification in the country (The World Bank, 2016). In this context KNF (2015), reported that the Kuwaiti government leads a sophisticated economy plan to transform

SMEs into significant contributors to job creation and economic output. KNF argued that SMEs in Kuwait had been given a high priority by the Kuwait government. Moreover, to meet the challenges of the SMEs and to enhance the adoption of E-commerce, which in turn enhances performance, the Kuwait government has adopted Vision 2035 to set a national strategy that aims to develop the SME sector, including developing information and communication technology among SMEs. The need for applying technology tools in organizations is because the growth of SMEs depends on the many benefits of technology, especially E-commerce (Al-Sharafi et al., 2018). The SME sector, despite the relatively high expenditure on SME sectors, does not currently provide enough drive to achieve the government's economic growth goals (UNDP, 2011).

Hence, the Kuwait government seeks to engage several private and government institutions to facilitate the economic transition and support the SME sectors. Ramadhan and Girgis (2018) identified institutions like the Kuwait Small Projects Development Company, Al-Raeda Enterprises Company, KAMCO, IBK, and the KNF. For example, in 2013, Kuwaiti Law No. 98 of 2013 approved the establishment of KNF to develop SMEs as an independent public institution with a total capital of 2 billion Kuwaiti dinars. The KNF will cash up to 80 % of the capital for SME projects that can be implemented by Kuwaiti citizens. One of the primary purposes of the SME Law is to enhance and guarantee the employment of Kuwaiti nationals in the private sector as both investors and workers. The main goal of KNF is to provide access to finance and land for promising projects in different sectors without interest rate, help initial project's transactions with government agreements and licenses, and provide a training program. In March 2017, the figure of trainees for all KNF programs reported more than 1,833 trainees (Ramadhan & Girgis, 2018).

Based on the KNF annual report 2015-2016, the Government of Kuwait is leading a structural reform process to deploy favorable policies that counter the challenges facing the private sector and to unlock the potential for private-sector-led growth in Kuwait. This process aims to reduce dependency on the public sector and to realign motivations to support economic diversification, competitiveness, and job creation for Kuwaiti nationals, given that 90% of the state's income is comprised of oil revenues, the sharp decline in global oil prices has contributed to a growing deficit in Kuwait's financial statements starting in fiscal year 2014/2015 (KNF, 2015). Further challenges include the potential rise of unemployment figures (which have reached 4.7% among Kuwaitis in (2015), coupled with the public sector's limited capacity to engage future Kuwaiti applicants to the job market (KNF 2015; Kuwait Times, 2016).

#### **1.2.1(c) Major Difficulties Faced by the SMEs in Kuwait**

For SMEs to turn into important actors in the development of the economy and a major source of employment, many issues must be treated (UNDP 2011). These include creating a generally accepted definition of SMEs, gathering suitable statistical information, a supportive institutional support structure, formulating SME development strategy and programs, more entrepreneurial motivation, and simplified business registration (UNDP 2011). Others such as simplifying licensing procedures, easy and cost-effective access to finance and equity financing, the wider use of ICT, and expanding the market to establish more jobs via broader access to public procurement and government withdrawal from many productive activities. According to Ramadhan and Girgis (2018), banks in Kuwait generally refrain from lending to SMEs due to the high credit risk associated with them, and this will hinder the ability of SMEs to grow and test new business models as well as get appropriate software

packages. Another critical factor is that most SMEs lack the primitive management skills needed to maintain and grow. Owners of Kuwaiti SMEs depend on expatriate managers to carry out the daily process with lower participation of local workers. This accreditation borders the innovation and refinement of skills among owners of SMEs.

A study by the World Bank surveyed 502 SMEs (2016) to understand the main obstacles to the growth of SME business in Kuwait. The study indicates that more than 35% of subjects reported business licenses and permits as the key things hindering their growth. The study also avers that there is a lack of labor regulations, regulatory uncertainty, an adequately educated workforce, and administrative corruption featured highly. A study by AlAjeel (2018) identified the following as challenges that impede Kuwaiti SMEs. The results showed that among 322 respondents, 45% of respondents mentioned that the financial problem, 15% technical deficiencies, and 19 % communication and training consultations as their main problems. Ghuloum and Ahmed (2011) mentioned that different factors such as technological factors, human factors, financial factors, and cultural factors might be an obstacle to the adoption of ICT in the Arab region in general and in Kuwait in particular. However, most SMEs lack sufficient understanding of how to invest in E-commerce, which may benefit their projects and help them to establish competitiveness by improving access to technology and communication infrastructure (Al-Alawi & Al-Ali 2015). According to UNDP (2011), SMEs in Kuwait do not have a favorable approach toward E-commerce adoption, which considered and preferred traditional trade as a good tool for running a business.

### **1.3 E-commerce in Kuwait**

The three major mobile operators available in Kuwait are Zain Kuwait, STC (VIVA Kuwait) and Ooredoo are all offering LTE services as well as exploring 5G opportunities (Paul Budde Communication, 2020). According to International Data Corporation (IDC) (2016), the total mobile cellular telephone subscriptions account for 8,719,000 - a 240% penetration among the population. Internet World State (2017) reported that internet users had been increased in Kuwait from 150,000 in 2000 to 3,145,559 in 2015, with the percentage of population penetration reached 78.7%.

Kuwait was one of the first countries that permit the use of the Internet for public general compared to other countries in the Middle Eastern ranks the highest in online usage (AlAjeel, 2018). For example, about 94% of migrants working in Kuwait use Facebook while only 55% of the locals use it. As for the app, 55% of the local population use the app while only 11% of expats use this method. Snapchat is also a popular social media platform among locals (70%), while a small percentage of expats use it (14%). Twitter is like a mini personal blogger type for a social media outlet, with 46 percent of Kuwaitis using Twitter and only 10 percent of expats using this app, which these platforms have become the most effective method of communication for SMEs as an online local relations strategy for its events, services, messages, and goods in Kuwait (AlAjeel, 2018).

As now, Kuwait as one of the most significant online transaction potential growth rates in the whole region (WEF, 2016), compared to other high-income countries and even neighboring countries (MENA, 2012) as an essential component of business organization and channel for developing online trading and related electronic payments (Al-Alawi & Al-Ali, 2015; AlSahouly, 2015). According to Kuwaiti Central Agency for Information Technology (CAIT) (2016), 83% of firms



employ the internet during the past 12 months, 45% of firms use mobile broadband for Internet access, while 32% of firms use ADSL / DSL services. In terms of the speed of Internet connections, more than 1/3 of firms are linked to four Mbps or less. Regarding the kind of online activities, sending and receiving emails is the most mentioned activity (CAIT, 2016). Despite these advantages, SMEs in Kuwait still on the incorrect part of the digital divide.

According to the WEF (2016), Kuwait is another top mover in the Networked Readiness Index 2016, 11 points rise to 61st position, which is supported by substantial improvements, especially in ready, usage, and impact that are largely driven by individuals and companies. Regarding individual adoption, Kuwait ranks first very generally in the 32nd and very high in individual indicators: Mobile phone coverage (first), mobile phone subscriptions (second), families with personal computers (fourteenth), and domain subscriptions broad mobile (second), which is close to getting ranked in the upper half of business adoption (WEF, 2016). Despite starting from a low base, it is illustrated that Kuwait indicates a marked improvement in ICT that affects the innovation of the business model.

#### **1.4 Problem Statement**

The SMEs' adoption of E-commerce in developing countries remains limited (Ahmad et al., 2015; Al-Sharafi et al., 2018; Hamad et al., 2018). SMEs are still reluctant to embrace new technology (Dahnil, Marzuki, Langgat, & Fabeil, 2014) while the E-commerce activities of the majority of SMEs who have chosen to adopt ICT remain at the inception stage (Hamad et al., 2018; Ramayah et al., 2016). Ahmad et al. (2015) also report that the E-commerce adoption within the SME sector as a whole, its outcomes, and spread in developing countries are still not adequately

understood. This is due to the many challenges that confront SMEs in developing countries that not applicable in developed countries, such as weak infrastructure, limited resources, lack of essential IT skills and knowledge among people, and pressure competition (Alrousan, & Jones, 2016; Al-Somali, Gholami, & Clegg, 2015; Solaymani et al., 2012). Other issues that account for E-commerce resistance among owners and managers of SMEs involve the lack of awareness of the benefits of E-commerce, incompatibility between E-commerce and current work, and complexity included in the adoption of E-commerce (Abualrob & Kang, 2016; Chee, Suhaimi, & Quan, 2016; Savrul et al., 2014).

Similarly, despite the attention and significant effort and investment from the Kuwait government to promote technology use, in addition to the country's liberal attitude toward the use of website business activities, the E-commerce embracing level among SMEs remains low and insufficient. Many Kuwait SMEs are not conducting E-commerce activities in its business and it is used in limited transactions like online banking (International Trade Administration ITA, 2017). According to a survey of the Kuwait Central Agency for Information Technology (CAIT, 2016), there were more than 83% of companies using the internet over the past 12 months. About 45% of companies use mobile broadband to access the Internet, followed by ADSL / DSL Services used by 32% of companies. In addition, 44% of companies in Kuwait have a presence on the Internet, while 24% have multilingual websites (CAIT, 2016). This reflects a low E-commerce adoption rate among an estimated 33,000 local SMEs. This is further supported by the study of Abou-Shouk, Lim, and Megicks (2016), which reported that the need for SMEs in Kuwait to focus on E-commerce adoption is critical in recent times to incorporate the benefits of new technologies. To improve the

adoption rate, therefore, it is proper to study the potential factors that participate in the low rate of adoption and the interaction between them.

Generally, it can be inferred from relevant literature that the study of E-commerce adoption in Kuwait, in overall, remains minimal. Ghuloum and Ahmed (2011) reported that, technological factors, cultural factors financial factors, human factors, and might be barriers to ICT adoption by SMEs in Kuwait. Hence, there is a need to specify the critical determinants that contribute to the adoption of E-commerce for SME in Kuwait by improving the levels of adoption despite the obstacles.

Unfortunately, compared to developed countries, there is restricted research on the impact of the TOE factors on the E-commerce adoption by SMEs in developing nations (Ahmad et al., 2015), particularly in Arab Nations (Alrousan & Jones, 2016; Al-Sharafi et al., 2018; Hamad et al., 2018; Qashou & Saleh, 2018), and Gulf region in particular (Alghamdi, Nguyen, & Drew, 2012). Moreover, the results of previous studies based on developed countries may not be transferable or applicable in developing countries, which SMEs are, much less financial and technical resources compared to those in developed countries, and thus research results cannot be generalized (Govinnage & Sachitra, 2019). Additionally, whilst the previous researches focused on developed countries, there is a need to examine the factors that affect the E-commerce adoption by SMEs in developing countries (Ahmad et al., 2015; El-Gohary, 2012). An extensive literature review failed to locate any studies on TOE factors and their effect on E-commerce adoption through attitude within the Kuwait context. Thus, the current research is an endeavor to fill this gap by inspecting the impact of several TOE factors that have been hypothesized to influence E-commerce adoption by SMEs, particularly in Kuwait.

TOE variables have been extensively used by previous researchers, contextually, to explain E-commerce adoption by SMEs (Al-Bakri and Katsioloudes, 2015; Hamad et al., 2018; Kurnia et al., 2015; Sila, 2013). Despite the significant reported results, there has been a great debate among researchers about the effects of the TOE factors on the E-commerce adoption, with no consensus achieved (Ahmad et al., 2015; Ghobakhloo & Tang, 2013; Hamad et al., 2018; Kurnia et al., 2015; Mahroeian, 2012; Vagnani et al., 2019). These inconsistent results indicate that the effect of a particular structure of TOE factors is likely to be diverse. Furthermore, the relationship between TOE factors and the owner/manager's attitude toward E-commerce is barely validated by previous studies on IT adoption by SMEs, which provides an essential justification for the present study (Esmailpour et al., 2016; To & Ngai, 2008). Moreover, Grandón & Ramírez-Correa (2018) reported that the attitude of the owner/manager is the most powerful predictor of the SMEs' intent to adopt E-commerce. Thus, given the dearth of empirical studies on the TOE factors and attitude toward E-commerce, there is sufficient ground for further exploration of this research domain, particularly with regards to SMEs.

In addition, several studies have used either the attitude toward innovation or the E-commerce adoption as the independent variable (Ahmad et al., 2015; Huy, Van, Rowe, & Truex, 2012; Ramayah et al., 2016), where the majority agreed that SMEs' owners/managers, who positively have attitudes toward IT, might easily adopt new technologies, including E-commerce into their organizations (Hamad et al., 2018). Therefore, this present research attempts to examine the attitudes' influence of the SMEs' owners/managers on E-commerce adoption in Kuwait. This is significant in the SME sector, taking into account that although the Kuwait government allocates efforts

to support internet use in the business sector (The World Bank, 2016), the attitude toward E-commerce applications among SMEs has been reported to be very low.

Meanwhile, either the majority of studies on the potential TOE factors and E-commerce adoption by SMEs relationship are inconsistent, or they neglect other relevant mediating mechanisms that may influence owners/managers' perceptions toward E-commerce (e.g., Kim, Chun, & Song, 2009; To & Ngai, 2008; Vagnani & Volpe, 2017; Vagnani et al., 2019). Wu and Zumbo (2008) stated that the mediator is the third variable, which aims to foster a deeper and more accurate understanding of the causal relationship between an independent variable (IV) and a dependent variable (DV). Consequently, prior studies indicate that future studies should consider the mediating mechanisms of the attitude in the relationship between attributes of innovation and the innovations' adoption in organizations (Vagnani & Volpe, 2017). However, previous studies have largely ignored the relevance of mediating variables in explaining the relationship between E-commerce adoption and its TOE antecedents. This study intends to fill this gap and elucidate the association between TOE variables and E-commerce adoption in the SME sector.

In the context of this research, owners/managers' innovativeness is argued to influence the relationships between the mediating variable of the attitude of the owner/manager toward E-commerce and the E-commerce adoption as the dependent variable. Innovativeness is selected as the moderating variable because of its ability to strengthen this relationship. For example, if the owners/managers are more innovative, they can positively influence their attitudes to be more receptive to E-commerce adoption by SMEs (Grandón & Ramírez-Correa, 2018). In addition, innovative owners/managers are less perceptive of any impediments to the adoption of technology, which in turn have a positive effect on their attitudes (AlBar & Hoque,

2017; Kim & Forsythe, 2008; Ramayah et al., 2016). Therefore, the potential role of innovativeness in examining the adoption of E-commerce by SMEs should be validated in other contexts (Grandón & Ramírez-Correa, 2018). Given the importance of innovativeness and the inconsistency in results of previous studies on the relationship between the owner/manager's attitude and E-commerce adoption (Ahmad et al., 2015; Venkatesh, Morris, Davis, & Davis, 2003), there is the need for further investigation on the moderating role of innovativeness. This is crucial as the moderating variable reinforces the relationship between the IV and DV because it is a conditional construct (Barron & Kenny, 1986). Hence, this study explores the moderating role of innovativeness in strengthening the relationship between the owner/manager's attitude toward E-commerce and the SMEs' adoption of E-commerce.

Similarly, there is a lack of empirical evidence on TOE factors and SMEs' E-commerce adoption relationship, particularly in developing countries, like Kuwait. Most of the studies on TOE context have concentrated on larger business organizations and conducted in developed economies (Rahayu & Day, 2015). Therefore, in view of the above-mentioned gaps and the suggestions for further studies, this study investigates the mediating role of attitude on the relationship between TOE factors and SMEs' adoption of E-commerce in Kuwait.

## **1.5 Research Questions**

The primary purpose of this research is to examine the potential factors that affect the E-commerce adoption in SMEs in Kuwait. In addition to that, the influence of the antecedent TOE factors on the adoption of E-commerce was investigated through the mediating effect of the owner/manager's attitude toward E-commerce

adoption. In order to accomplish this goal, the present study tries to offer answers to the following research questions.

1. To what extent does technological factors (perceived relative advantage, perceived compatibility, and perceived complexity), organizational factors (organizational readiness and IT knowledge), environmental factors (competitive pressure and pressure from suppliers and customers) influence the SMEs' E-commerce adoption in Kuwait?
2. To what extent does technological factors (perceived relative advantage, perceived compatibility, and perceived complexity), organizational factors (organizational readiness and IT knowledge), environmental factors (competitive pressure and pressure from suppliers and customers) influence the attitude of owner/manager toward E-commerce adoption by SMEs in Kuwait?
3. To what extent does the owner / manager's attitude towards E-commerce influence E-commerce adoption by SMEs in Kuwait?
4. Does the attitude of the owner/manager toward E-commerce mediate the relationship between technological factors, organizational factors, environmental factors, and E-commerce adoption by SMEs in Kuwait?
5. Does the innovativeness of owner/manager moderate the relationship between the attitude of owner/manager toward E-commerce and SMEs' E-commerce adoption in Kuwait?