Perceived Barriers Hindering the Jordanian SMEs Operating in the Food and Beverage Industry from Engaging in E-commerce: An Empirical Study

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ABSTRACT

The present study aimed to identify the barriers hindering the Jordanian SMEs operating in the food and beverage industry from engaging in e-commerce. It also aimed to identify the percentage of engagement in e-commerce among the SMEs operating in the food and beverage industry. A self-administrated questionnaire was developed to collect the required data during the year 2017. Questionnaire forms were sent *via* e-mail to 224 individuals (i.e., 224 SMEs). The sample consists of owners of Jordanian SMEs operating in the food and beverage industry and managers working at such SMEs. However, 139 questionnaire forms were retrieved and considered valid for statistical analysis. Thus, the response rate is 62 %. It was found that the percentage of engagement in e-commerce among the Jordanian SMEs operating in the food and beverage industry is still relatively low. It was also found that the examined barriers can significantly hinder the Jordanian SMEs operating in the food and beverage industry from engaging in e-commerce. In addition, it was found that organizational and technical barriers are the most influential barriers.

Keywords: Barriers, E-commerce, SMEs, Food and beverage industy.

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العوائق المدركة التي تحول دون الانخراط في التجارة الإلكترونية بين الشركات الصغيرة والمتوسطة في صناعة الطعام والشراب في الأردن: دراسة إمبريقية

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ملخص

لقد حظي فهم العوائق/ العوامل التي تحول دون الانخراط في التجارة الإلكترونية بين الشركات الصغيرة والمتوسطة باهتمام كبير من الباحثين الأكاديميين والمهنيين في جميع أنحاء العالم. ومع ذلك، فإن هناك نقصاً في الدراسات التي تناولت هذه الظاهرة بين الشركات الصغيرة والمتوسطة العاملة في قطاع الطعام والشراب. لذلك، فإن الغرض من هذه الدراسة هو فحص ممارسات التجارة الإلكترونية وتقييمها في الشركات الأردنية الصغيرة والمتوسطة العاملة في قطاع الطعام والشراب، بالإضافة إلى تحديد أهم العوائق التي تحول دون الانخراط في التجارة الإلكترونية. واستناداً إلى مراجعة لنماذج تبنّى الابتكارات التكنولوجية، تم اختيار سبعة وعشرين عائقاً (محدِّداً) وتصنيفها إلى ستة عوامل رئيسية (العوائق الاجتماعية والثقافية، والعوائق الفنية، والعوائق التنظيمية، والعوائق الاقتصادية، والعوائق السياسية، والعوائق القانونية والتنظيمية). تم تطوير استبيان إلكتروني لجمع البيانات المطلوبة، وتم إرساله عبر البريد الإلكتروني إلى 224 من مديري/ أصحاب الشركات الصغيرة والمتوسطة العاملة في قطاع الطعام والشراب، وبلغ معدل الاستجابة 62٪. وأظهرت النتائج أن معدل تبني التجارة الإلكترونية بين الشركات المبحوثة لا يزال منخفضاً نسبياً وأن العوائق التنظيمية والتقنية تعتبر أهم العوامل التي تحول دون الانخراط في التجارة الإلكترونية بين الشركات الأردنية الصغيرة والمتوسطة العاملة في قطاع صناعة الطعام والشراب. علاوة على ذلك، تمت مناقشة التوصيات البحثية والقيود والاتجاهات المستقبلية في الأقسام الأخيرة من الدراسة.

الكلمات الدالة: العوائق، التجارة الإلكترونية، الشركات الصغيرة والمتوسطة، صناعة الطعام والشراب.

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1. INTRODUCTION

Having the ability to shop online is considered a revolutionary change in the world of business. In addition, the emergence of e-commerce (EC) has affected customer shopping behaviors. It has also affected business entities' transactions and processes, including the advertising process. Turban et al. (2017) define e-commerce as "*the process of buying, selling, transferring or exchanging products, services and/or information via computer networks, mostly internet and intranets*". Engaging in e-commerce shall significantly affect business entities and consumers in several aspects. For instance, it shall enable customers to find products that may not be found easily. It shall also enable customers to find things that they are searching for at low prices.

It was estimated that the number of people who use Internet during the year 2016 is 3.488 billion (The International Communication Union, 2017). Due to the availability of Internet, business entities have the opportunity to engage in e-commerce. However, the business entity that desires to engage in e-commerce must have an ICT system. It must also have e-readiness to engage in e-commerce. Hung et al. (2014) defined (e-readiness) as the capacity of a business entity or a country to use an ICT system to create and sustain a competitive advantage. Engaging in e-commerce shall generate many benefits. It shall also enable the SME to build good relationships with customers.

There is a difference between e-commerce and e-business. According to Turban and King (2003, 3), e-commerce is one of the elements of e-business. These concepts differ in terms of characteristics. E-business aims at providing customers with services. It involves cooperation with strategic business partners. E-commerce aims to provide an organization with revenue through conducting commercial transactions that involve value exchange. Engaging in EC shall provide SMEs with many benefits. For instance, e-commerce enables business entities to compete with large and global business entities despite the limited resources and capabilities. However, there are many barriers that may hinder business entities from engaging in e-commerce. Such barriers can be categorized into external and internal barriers. External barriers may include social, cultural and political barriers, whereas internal barriers may include technical and organizational barriers. However, there aren't many studies in developing countries – including Jordan - that explore the barriers hindering SMEs from engaging in e-commerce in the food and beverage industry.

Therefore, the present study aimed to explore the barriers hindering the Jordanian SMEs operating in the food and beverage industry from engaging in e-commerce. It also aimed to identify the percentage of engagement in e-commerce among the SMEs operating in the food and beverage industry. As far as the researchers know, the present study is the first study that sheds light on this problem in Jordan.

To be specific, the present study aimed to provide answers to the following questions:

1. What are the barriers hindering the Jordanian SMEs operating in the food and beverage industry from engaging in e-commerce?
2. Are there any statistically significant differences - at the statistical significance level of 0.05 - between the respondents' attitudes which can be attributed to the engagement of the SME in e-commerce (i.e., whether the enterprise is engaged in e-commerce or not)?

2. LITERATURE REVIEW

EC has been spreading much recently. It has been proved that it's an effective method in the business world. It is available for any business entity to use. It provides SMEs with many benefits. For instance, it enables SMEs to compete with large and global companies despite their limited resources and capabilities (Ghobakhloo et al., 2011). However, there are obstacles that may hinder SMEs from engaging in e-commerce. Such obstacles in developed countries are different from their counterpart obstacles in the developing countries (Rahayu and Day, 2017).

2.1 Benefits of E-commerce and the Limitations Hindering the Engagement in EC

Today, there are many SMEs engaged in e-commerce due to the benefits gained from it. For instance, e-commerce enables companies to compete with others despite their limited resources and capabilities. The benefits that SMEs may gain from engaging in e-commerce differ from one sector to another. Jahanshahi et al. (2013) aimed to identify the benefits that may be gained from engaging in EC in three countries (i.e., Iran, India and Malaysia). They found that EC can improve business processes, promote customer loyalty and increase customer retention. They found that EC can improve customer services and the owner's relationship with suppliers. They found that engaging in EC improves customer service in Iran more than in India. They also found that engaging in EC increases responsiveness in Malaysia more than in Iran and India. Al-Bakri and Katsioloudes (2015) stated that the use of ICT has been increasing in the fields of education, training and development in Jordan. However, they suggested that ICT must be used more in the food and beverage industry in Jordan. According to the latter researchers, most Jordanian SMEs are reluctant to engage in EC, because they are reluctant to make organizational changes (Al-Bakri and Katsioloudes, 2015).

There are many benefits that can be obtained from engaging in EC. For instance, e-commerce can improve customer services. Thus, it shall increase customer loyalty (Sutanonpaiboon and Pearson, 2006). That shall participate in promoting brand awareness and improving corporate image. It shall also participate in attracting new customers. In addition, engaging in EC shall enable companies to store information on the web. It shall facilitate the process of exchanging information through online platforms. It shall facilitate the process of providing customers with information. It shall also facilitate the process of updating information. SMEs operating in the food and beverage industry tend to communicate with customers more than companies operating in other industries. Such communication is conducted to inform customers about new products, offers and prices. In this regard, EC facilitates the process of communicating with customers. For instance, EC enables customers to update catalogues electronically. Such catalogues provide customers with information about prices, offers and products. That shall eliminate the need to use traditional catalogues (Al-Bakri and Katsioloudes, 2015).

Keeping the customer well-informed shall increase the customer trust in the company. It shall build a good profitable relationship between the company and its customers. Building such a relationship is a goal sought by all companies. In addition, engaging in EC will reduce costs. For instance, EC enables SMEs to reduce the costs incurred when conducting transactions. In addition, SMEs can advertise products electronically through using social media platforms. That shall enable SMEs to reach out to many customers. Engaging in EC shall participate in disseminate information. It shall enable

SMEs to achieve a competitive advantage despite limited resources and capabilities. It shall enable SMEs to communicate with customers and carry out operations efficiently (Stockdale and Standing, 2004). On the other hand, there are many limitations that may hinder SMEs from engaging in e-commerce. These limitations can be divided into two categories; technological and non-technological limitations. The technological limitations may include lack of proper telecommunications services, inability to use EC systems and the high cost of Internet (Turban and King, 2003). In addition, many telecommunication companies in Jordan fail to deliver internet services of high quality. Furthermore, maintaining computers in a regular manner is considered costly.

As for the non-technological limitations, they may include problems related to privacy, security, and trust. They may also include difficulties associated with transforming the traditional stores into online stores. The most crucial limitations hindering the engagement of Jordanian SMEs in EC may include security- and privacy-related problems faced by customers when shopping online. Due to facing such problems, several intermediary websites were created, such as: cashbasha.com, exxab.com and jordanubuy.com. These websites are considered safe to use. However, there are limitations hindering their use. For instance, they require much time to deliver the product. They also require paying additional charges. These websites provide a limited number of products.

2.2 The Barriers Hindering Companies from Engaging in E-commerce

There are many barriers hindering companies from engaging in e-commerce. These barriers differ from one region to another. Kshetri (2007) found that the barriers hindering companies in Nepal from engaging in e-commerce differ from their counterpart barriers in the developed countries. Simpson and Docherty (2004) aimed to explore the barriers hindering the companies in the UK from engaging in e-commerce. They found that the main barrier is represented in the reluctance of managers to make technological changes. Jahanshahi et al. (2013) aimed to explore the barriers hindering companies in three developing countries from engaging in e-commerce. They found that such barriers include lack of knowledge about e-commerce and its benefits. They categorized such barriers into: external and internal barriers. They also categorized such barriers into technological and non-technological barriers.

Bodorick et al. (2002) concluded that having limited resources and capabilities is considered as a barrier that hinders SMEs from engaging in e-commerce. According to MacGregor and Vrazalic (2005), such barriers may be classified into external and internal barriers. Internal barriers include the ones related to management, decision making and resource availability. As for external barriers, they include the ones related to products, markets and risks. Internal barriers may include limited financial resources (MacGregor and Vrazalic, 2005). Internal barriers may also include lack of preparation for the decision making process (Bunker and MacGregor, 2000). Large companies are characterized by being customer-oriented companies, whereas SMEs are characterized by being product-oriented companies. The latter feature of SMEs is considered as an external barrier. It should be noted that SMEs can't enforce efficient control on e-commerce-related operations like large companies. That is considered as an external obstacle. The latter barrier can increase risks (Hill and Stewart, 2000). In terms of risks, SMEs face more risks than larger companies. That shall make SMEs' managers reluctant to take risks and engage in e-commerce.

In addition, technological and non-technological barriers can significantly hinder the engagement of SMEs in e-commerce. Technological barriers hinder such engagement more than non-technological barriers. Many developing countries do not have proper infrastructures. Thus, that represents an obstacle hindering SMEs in these countries from engaging in e-commerce. In addition, the SMEs in developing countries incur much costs when using information technologies. Tan et al. (2007) aimed to explore the obstacles hindering SMEs in China from engaging in e-commerce. They found that such obstacles may include limited access to computers and lack of trust among customers in SMEs. Grandon et al. (2004) aimed to explore the obstacles hindering SMEs in the United States from engaging in e-commerce. They found that such obstacles include: poor technological infrastructure and high costs of engaging in e-commerce. As for non-technological barriers, they include computer illiteracy and lack of qualified IT professionals who can run and maintain EC systems and applications (Grandon et al., 2004).

Mirchandani and Motwani (2001) found that SMEs face major difficulties in employing and retaining skilled IT professionals. They found that latter difficulties hinder SMEs from engaging in e-commerce. Chen (2004) found that the lack of skilled IT professionals is a major barrier that hinders Taiwanese SMEs from engaging in e-commerce. Although there are many benefits obtained from e-commerce, there are many barriers that hinder SMEs from engaging in e-commerce. There are many drivers behind engaging in e-commerce by UK SMEs. Such drivers include drivers related to customers, internal processes and suppliers. Such drivers include the desire of SMEs to enter new markets and improve their services. Such drivers include the desire of SMEs to improve their customer services, promote good brand image and achieve a competitive advantage (Daniel et al., 2002). Joines et al. (2003) found that there are several drivers behind engaging in e-commerce by companies. Such drivers include interactivity and customer intimacy that e-commerce provides. Such drivers include providing customers with the capability to shop online. Joines et al. (2003) defined interactivity as "*the immediately interactive process by which customer needs and desires are uncovered, met, modified and satisfied by the providing firm"*. Hence, e-commerce is the most preferred method by SMEs to advertise products and services.

There are other drivers behind engaging in e-commerce by SMEs. For instance, e-commerce improves communication and enables SMEs to conduct operations in a flexible and efficient manner. In addition, e-commerce provides greater customer intimacy. It also enables SMEs to advertise products efficiently. It enables SMEs to identify customers' preferences in order to customize their services accordingly. In addition, it participates in building good relationships between SMEs and customers. That shall participate in raising the profits of SMEs. Stockdale and Standing (2006) suggested that the benefits that can be obtained from e-commerce serve as a driver for engaging in e-commerce. They also suggested that managers' expectations serve as a driver for engaging in e-commerce. Levy et al. (2005) found that the enthusiasm of owners and managers is a primary driver for engaging in e-commerce by SMEs. There are also other drivers behind engaging in e-commerce by SMEs. For instance, such drivers may include the need of SMEs to keep up with information technologies and meet customer expectations. Such drivers may also include the need of SMEs to achieve competitive advantage, improve communication and increase cost savings. Such drivers may include the need of SMEs to enter new markets (Stockdale and Standing, 2006). According

to Simpson and Docherty (2004), there are many drivers behind engaging in e-commerce by SMEs. Such drivers may include the need of SMEs to reduce costs, raise the market share and enter new markets. Such drivers may also include the need of SMEs to raise the efficiency and productivity levels and achieve a competitive advantage.

2.3 Factors Influencing the Engagement of SMEs in E-commerce

There are many obstacles influencing the engagement of SMEs in e-commerce. Rahayua and Day (2015) categorized these factors into four types; environmental, organizational, technological and knowledge-related factors. Regarding environmental factors, they refer to external factors that an organization can't control. These factors can significantly affect business operations. These factors may be related to customers, governments, competitors and suppliers. Terzi (2011) found that that there has been an increasing use of Internet during the period from 2000 to 2010. He found that the Middle East is ranked second in this regard (1,825.3%), whereas Africa is ranked first (2,357.3%). Such increasing use of Internet shall motivate SMEs to engage in e-commerce. Thus, it shall affect the decision of SMEs to engage in e-commerce. In addition, competition motivates SMEs to engage in e-commerce. Thus, such a competition shall affect the decision of SMEs to engage in e-commerce. Oliveira and Martins (2010) and Rahayua and Day (2015) found that competition motivates SMEs operating in the EU to engage in e-commerce. Regarding knowledge-related factors, they involve experience, innovativeness and understanding. The benefits and opportunities that could be obtained from e-commerce shall affect the decision of SMEs to engage in e-commerce. In addition, the ability of e-commerce to reduce risks shall affect the decision of SMEs to engage in e-commerce.

Organizational factors may include factors related to capital, profitability and technical expertise. For instance, many SMEs suffer from shortage of resources needed to invest in emerging technologies. Such resources include capital (Makame et al., 2014). Pearson and Grandon (2005) and Feindt et al. (2002) emphasized the role of financial resources in enabling SMEs to engage in e-commerce. In addition, organizational readiness is another organizational factor that affects the decision of SMEs to engage in e-commerce (Grandon and Pearson, 2004). As for technological factors, they include the ones related to cost, infrastructure, reliability and security (Wymer and Regan, 2004). Reliability and security are considered very influential factors. Improving reliability shall retain current customers and attract new ones. It shall also improve the processes of sharing information with customers and communicating with them. Improving security shall encourage customers to conduct more online transactions. People use the World Wide Web to conduct transactions, because it enables them to pay in a manner that's more convenient. As for SMEs, the web is considered a more efficient method than the traditional method. It is also less costly than the traditional method for conducting business transactions.

3. The Study's Conceptual Framework

There are several factors that affect the decision of SMEs to engage in e-commerce. These factors may be motives (e.g. drivers, determinants or incentives) or barriers (inhibitors). The researchers of the present study classified barriers into internal and external barriers. Internal barriers include technical and organizational barriers. As for external barriers, they include social, cultural, economic, political, legal and regulatory barriers (Kartiwi and MacGregor, 2007;

Lawrence and Tar, 2010). The model of the present study is presented in Figure (1).

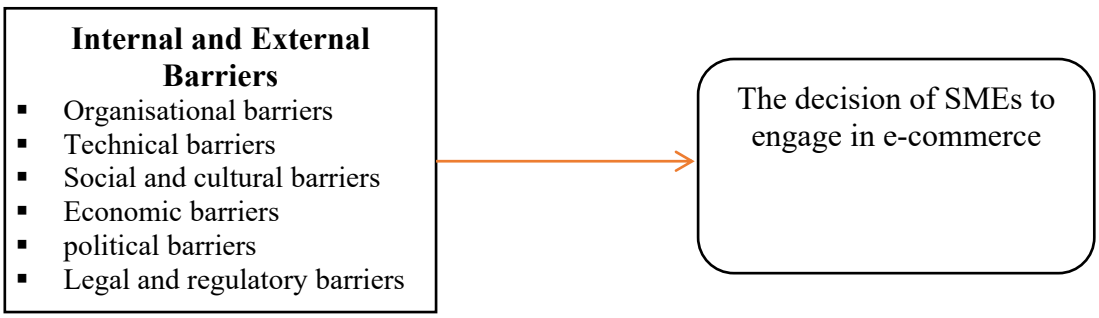

Figure (1): The Study's Model

4. The Study's Hypotheses

Based on the study's model, the following null hypotheses were developed:

H0.1: The examined barriers have no statistically significant impact - at the statistical significance level of 0.05 - on the decision of the Jordanian SMEs operating in the food and beverage industry to engage in e-commerce.

H0.2: There are no statistically significant differences - at the statistical significance level of 0.05 -between the respondents' attitudes which can be attributed to the engagement of the SME in e-commerce (i.e.m whether the enterprise is engaged in e-commerce or not).

5. The Study's Methodology

5.1 Data Collection Methods

Two types of data were collected by the researchers of the present study. These types are:

1. Secondary data: It is represented in the data obtained from books, periodicals, theses and PhD dissertations. It is also represented in the data obtained from the web.
2. Primary data: It is represented in the data obtained through using the study's instrument (i.e., a questionnaire). This data was statistically analyzed through using the SPSS program. The questionnaire was used to survey the opinions of owners of SMEs operating in the food and beverage industry and managers working at such SMEs. From each SME, one individual was chosen. The questionnaire of the present study was developed by Zaied (2012). The latter researcher aimed to explore the barriers hindering SMEs in Egypt from engaging in e-commerce. However, the researchers of the present study modified the instrument of Zaied (2012). For instance, they added a barrier to the instrument which is computer illiteracy. This barrier falls under social and cultural barriers. In addition, supply chain management was added. The questionnaire used is a self-administered questionnaire. It was sent *via* e-mail to the sample. According to Cooper and Schindler (2011), this method enables respondents to fill in the questionnaire in the time and place they choose. Thus, it is a flexible method for collecting data.

5.2 The Study's Population and the Sampling Method

The target population consisted of 262 small and medium enterprises (SMEs) that operate in the food and beverage industry in Jordan. Data was acquired

from the General Association for Foodstuff Merchants which was established in 1973. The latter association provided the researchers with a list. The latter list included details about all the Jordanian companies operating in the food and beverage industry. Such details included: name of owner/manager, e-mails and telephone numbers. The number of full-time employees is considered the most widely used criterion for classifying enterprises into large, medium, small or micro-enterprises. As for the researchers of the present study, they used the criteria of the Jordanian Enterprise Development Corporation (JEDCO) for such classification. These criteria are presented below:

1. Micro-enterprise: It refers to any registered company which has less than five (5) employees. The annual revenue of a micro-enterprise is less than 100,000 JDs.
2. Small enterprise: It refers to any registered company which recruits (5 – 19) employees. The annual revenue of a small enterprise is within the range of (101,000 JDs - 1,000,000 JDs).
3. Medium enterprise: It refers to any registered company which recruits (20 – 99) employees. The annual revenue of a medium enterprise is within the range of (1,000,000 JDs – 5,000,000 JDs).

It was found that all the listed enterprises are SMEs. However, twenty-six (26) companies did not have any e-mail. There were five (5) companies that did not have any valid e-mail address. It was found that some companies shared the same e-mail address. Thus, the final sample consisted of 224 participants (i.e., 224 companies). From each enterprise, one individual was chosen. The sample consisted of managers and owners, because they have more knowledge than others about e-commerce and other related things. The questionnaire forms were sent to 224 individuals *via* e-mail. They were asked to fill in the questionnaire form and return it back *via* e-mail. However, 139 questionnaire forms were retrieved and considered valid for statistical analysis. Thus, the response rate was 62%.

5.3 The Study's Variables

The variables of the present study are presented below:

1. The dependent variable (the engagement in e-commerce): participants were asked to identify whether the enterprise is engaged in e-commerce or not. In case the enterprise is engaged in e-commerce, respondents must identify whether such engagement is partial of full.
2. The independent variables: they are represented in the barriers that may affect the enterprise's engagement in e-commerce.

It should be noted that a five-point Likert scale was adopted. The latter scale consists five rating points; 5, 4, 3, 2 and 1. These points are represented by five categories respectively; strongly influential, influential, moderately influential, hardly influential and not-influential.

The examined barriers are classified into six categories. These barriers are presented in Table (1). In addition, the reference that each barrier was chosen from is (are) also presented in the table.

Table 1. The Examined Barriers

Code	Barriers	References
Sb	**Social and Cultural Barriers**	
Sb1	The online tools are not widely used	Tan et al. (2007); Franco & Bulomine (2016); Nguyen et al. (2018)
Sb2	Lack of awareness about the benefits that can be obtained through engaging in e-commerce	Al-Bakri and Katsioloudes (2015); Kapurubandara (2009)
Sb3	There isn't much pressure put on the SME by suppliers and customers	Chen, (2004); Levy et al. (2005); Franco and Bulomine (2016)
Sb4	Linguistic barriers	Al-Bakri and Katsioloudes (2015); Laudon and Traver (2010)
Sb5	Computer illiteracy	Wymer and Regan (2005); Nguyen et al. (2018)
Tb	**Technical Barriers**	
Tb1	The lack of security associated with using the web	Al-Bakri and Katsioloudes (2015); Moict.gov.jo. (2017); Oliveira and Martins (2010)
Tb2	The absence of the support that should be provided by reliable professionals	Joinessr et al. (2003); Kapurubandara (2009); Moict.gov.jo. (2017); Oliveira and Martins (2010)
Tb3	Lack of qualified professionals	Kaynak et al. (2005); Oliveira and Martins (2010); Riquelme (2002)
Tb4	The speed and quality of the Internet service are low	Laudon and Traver, (2010); Riquelme (2002); Wymer and Regan (2005).
Tb5	The rapid increase of innovations and technologies	Jahanshahi et al. (2013); Al-Bakri and Katsioloudes (2015)
Eb	**Economic Barriers**	
Eb1	Poor financial resources	Al-Bakri and Katsioloudes (2015); Kaynak et al. (2005); Rahayu and Day (2017)
Eb2	The risk associated with engaging in e-commerce	Simpson and Docherty (2004); Wyme and Regan (2005); Nguyen, et al. (2018)
E3	The high cost	Kaynak et al. (2005); Rahayu and Day (2017); Nguyen et al. (2018)
E4	The intensity of competition	Chen (2004); Levy and Worrall, (2005); Rahayu and Day (2017)
E5	Absence of secure payment services	Al-Bakri and Katsioloudes (2015); Hill and Stewart (2000); Kapurubandara (2009); Olatokun and Kebonye (2010); Oliveira and Martins (2010)
Pb	**Political Barriers**	
Pb1	The inappropriate governmental regulations and policies	Joines et al. (2003); Laudon and Traver (2010); Herrero and San Marten (2012)
Pb2	The instability of the economic climate in Jordan	Essig and Arnold (2001); Joines et al. (2003); Wymer and Regan (2005)
Pb3	The inappropriateness of the legal environment	Laudon and Traver (2010); Rahayu and Day (2017)
Pb4	The readiness of the government institutions	Wymer and Regan (2005); Rahayu and Day (2017)
Ob	**Organizational Barriers**	
Ob1	Difficulty in changing the current work procedures	Al-Bakri and Katsioloudes (2015); Nguyen et al. (2018)
Ob2	Lack of management support	Al-Bakri and Katsioloudes (2015); Solaymani et al. (2012)
Ob3	The SME is reluctant to change	Chen (2004); Moict.gov.jo. (2017)
Ob4	Limited use of Internet banking services by SMEs	Joines et al. (2003); Kshetri (2007); Al Ghamdi et al. (2013)
Lb	**Legal and Regulatory Barriers**	
Lb1	The absence of legal and regulatory systems	Laudon and Traver (2010); Franco and Bulomine (2016)
Lb2	The complexity of the relevant procedures and guidelines	Looi (2003); Oliveira and Martins, (2010); Al Ghamdi et al. (2013)
Lb3	Lack of e-commerce standards	Essig and Arnold (2001); Laudon and Traver (2010); Solaymani et al. (2012)
Lb4	Lack of e-trading legislations	Wymer and Regan (2005); Al-Ghamdi et al. (2013)

5.4 The Instrument's Validity and Reliability

The validity of the study's questionnaire was checked. That was done through sending the questionnaire to a panel of experts. Based on the experts' comments, several modifications were made on the questionnaire. As for the reliability of the study's questionnaire, it was measured through calculating the values of Cronbach's Alpha coefficients. The overall value of Cronbach's Alpha coefficient is 0.669. The latter value is considered good. That means that the study's instrument is considered reliable and provides accurate results (Hair et al., 2014). Table (2) presents the values of Cronbach's Alpha coefficients for all the statements in accordance with each examined barrier.

Table 2. The Values of Cronbach's Alpha Coefficients

Type of Barriers	Number of Items	Value of Cronbach's Alpha Coefficient
Internal Barriers		
Organizational Barriers	4	0.637
Technical Barriers	5	0.639
External Barriers		
Social and Cultural Barriers	5	0.647
Economic Barriers	5	0.623
Political Barriers	4	0.681
Legal and Regulatory Barriers	4	0.652
Total	**27**	**0.669**

5.5 Statistical Analysis

In this part of the study, the researchers present the analysis of the collected data. They also identify the number of the respondents. In addition, they identify the percentage of engagement in e-commerce among the Jordanian SMEs operating in the food and beverage industry in Jordan.

5.5.1 Statistical Data about the Sample

Table (3) presents the number of selected participants and the number respondents. It also presents the response rate.

Table 3. Number of Respondents and Response Rate

Number of selected participants	Number of respondents	Response rate
224	139	62%

Based on Table (3), it can be noticed that 139 respondents were surveyed (i.e., 139 SMEs). The response rate was (62%). Descriptive analysis was conducted to identify the percentage of the SMEs that are engaged in e-commerce. Table (4) presents the results of this analysis.

Table 4. Number and Percentage of SMEs Engaged in E-commerce

SMEs engaged in e-commerce		**SMEs that aren't engaged in e-commerce**	
Number	Percentage %	Number	Percentage %
59	42	80	58

Based on Table (4), it was found that there are **5**9 SMEs engaged in e-commerce (42 %). The latter percentage is considered relatively low. It was also found that there are 80 SMEs that are not engaged in e-commerce (58 %). Thus, the percentage of engagement in e-commerce among the Jordanian SMEs operating in the food and beverage industry is still relatively low.

5.5.2 Statistical Analysis Regarding the Influence of the Barriers

Means and standard deviations are calculated to identify the barriers that hinder the engagement of the Jordanian SMEs operating in the food and beverage industry in e-commerce. The T-values were calculated too. The results of the statistical analysis are presented in Tables (5, 6 and 7). Table (5) deals with the impact of the examined barriers on the decision to engage in e-commerce from the perspective of all the respondents. Table (6) deals with the impact of the examined barriers on the decision to engage in e-commerce from the perspective of the respondents who work in SMEs engaged in e-commerce. Table (7) deals with the impact of the examined barriers on the decision to engage in e-commerce from the perspective of the respondents who work in SMEs that aren't engaged in e-commerce.

Table 5. Impact of the Examined Barriers on the Decision to Engage in E-commerce from the Perspective of All the Respondents

	Barriers	**N**	**Mean**	**SD**	**T-value**	**≤ 5%**
Sb	**Social and Cultural Barriers**	139	3.3302	1.12209	27.523	0.000
Sb1	The online tools are not widely used	139	3.0465	1.30074	21.720	0.000
Sb2	Lack of awareness about the benefits that can be obtained through engaging in e-commerce	139	3.3953	1.14048	27.609	0.000
Sb3	There isn't much pressure put on the SME by suppliers and customers	139	3.6977	3.40957	10.057	0.000
Sb4	Linguistic barriers	139	3.3605	1.10520	28.197	0.000
Sb5	Computer illiteracy	139	3.1512	1.32414	22.069	0.000
Tb	**Technical Barriers**	139	3.3791	1.59559	19.639	0.000
Tb1	The lack of security associated with using the web	139	3.1047	1.19832	24.026	0.000
Tb2	Absence of the support that should be provided by reliable professionals	139	3.1628	1.21617	24.117	0.000
Tb3	Lack of qualified professionals	139	3.6163	2.30686	14.537	0.000

Tb4	The speed and quality of the Internet service are low	139	3.2674	1.23121	24.611	0.000
Tb5	The rapid increase of innovations and technologies	139	3.7442	5.72546	6.065	0.000
Eb	**Economic Barriers**	139	3.3093	.87510	35.069	0.000
Eb1	Poor financial resources	139	2.9884	1.26020	21.991	0.000
Eb2	The risk associated with engaging in e-commerce	139	3.1279	1.25367	23.138	0.000
E3	The high cost	139	3.3140	1.28577	23.902	0.000
E4	The intensity of competition	139	3.5698	1.10124	30.061	0.000
E5	Absence of secure payment services	139	3.5465	1.23343	26.665	0.000
Pb	**• Political Barriers**	139	3.2762	1.21391	25.028	0.000
Pb1	The inappropriate governmental regulations and policies	139	3.2674	1.20220	25.205	0.000
Pb2	The instability of the economic climate in Jordan	139	3.1163	1.03377	27.955	0.000
Pb3	The inappropriateness of the legal environment	139	3.5581	3.42862	9.624	0.000
Pb4	The readiness of the government institutions	139	3.1628	1.27289	23.042	0.000
Ob	**Organizational Barriers**	139	3.5233	1.73613	18.820	0.000
Ob1	Difficulty in changing current work procedures	139	3.3023	1.21819	25.139	0.000
Ob2	Lack of management support	139	3.3140	1.19076	25.809	0.000
Ob3	The SME is reluctant to change	139	3.4186	1.15265	27.504	0.000
Ob4	Limited use of Internet banking services by SMEs	139	4.0581	5.69490	6.608	0.000
Lb	**Legal and Regulatory Barriers**	139	3.2994	1.24547	24.567	0.000
Lb1	The absence of legal and regulatory systems	139	4.0581	5.69490	23.513	0.000
Lb2	The complexity of the relevant procedures and guidelines	139	3.1395	1.23824	9.656	0.000
Lb3	Lack of e-commerce standards	139	3.5698	3.42840	26.675	0.000
Lb4	Lack of e-trading legislations	139	3.2558	1.27589	23.664	0.000

(#): This sign indicates that the value is not statistically significant.

(*): This sign indicates that the value is statistically significant at the statistical significance level of 0.001.

(**): This sign indicates that the value is statistically significant at the statistical significance level of 0.05.

Table 6. Impact of the Examined Barriers on the Decision to Engage in E-commerce from the Perspective of the Respondents Who Work in SMEs That Are Engaged in E-commerce

	Barriers	N	Mean	Standard deviation	T-value	Significance level ≤ 5%
Eb	Economic Barriers	59	3.2759	1.01054	17.457	0.00
Tb	Technical Barriers	59	3.1862	1.06359	16.132	0.00
Pb	Political Barriers	59	3.1207	1.20197	13.982	0.00
Ob	Organizational Barriers	59	3.0862	0.92407	17.985	0.00
Sb	Social and Cultural Barriers	59	3.0759	0.98040	16.895	0.00
Lb	Legal and Regulatory Barriers	59	2.8276	1.12818	13.497	0.00

Table 7. Impact of the Examined Barriers on the Decision to Engage in E-commerce from the Perspective of the Respondents Who Work in SMEs that Aren't Engaged in E-commerce

	Barriers	N	Mean	Standard deviation	T-value	Significance level ≤ 5%
Ob	Organizational Barriers	80	3.7456	1.99972	14.141	0.00
Lb	Legal and Regulatory Barriers	80	3.5395	1.24265	21.504	0.00
Tb	Technical Barriers	80	3.4772	1.80822	14.518	0.00
Sb	Social and Cultural Barriers	80	3.4596	1.17471	22.235	0.00
Pb	Political Barriers	80	3.3553	1.22287	20.715	0.00
Eb	Economic Barriers	80	3.3263	0.80679	31.127	0.00

5.6 Testing the Study's Hypotheses

In this part, the researchers aimed to test the study's hypotheses. ANOVA analysis and t-test were conducted for this purpose. Based on the values in Tables 5, 6 and 7, it was found that the first hypothesis is rejected. This means that the examined barriers have a statistically significant impact- at the statistical significance level of 0.05 - on the decision of the Jordanian SMEs operating in the food and beverage industry to engage in e-commerce. Thus, these barriers can significantly hinder these SMEs from engaging in e-commerce. In Table (8), the researchers rank the impacts of the examined barriers on the decision of SMEs to engage in e-commerce from the perspective of the two groups jointly and separately.

In order to test the second hypothesis, one-way ANOVA analysis was conducted. Table (9) presents the results of this analysis. It was found that there are no statistically significant differences - at the statistical significance level of 0.05 - between the respondents' attitudes which can be attributed to the engagement of the SME in e-commerce (i.e., whether the enterprise is engaged in e-commerce or not). However, it was found that the latter result doesn't apply to the legal and regulatory barriers. The differences of attitudes in this regard is in favor of the respondents who work in the SMEs that are not engaged in e-commerce. In other words, the latter respondents perceive the legal and regulatory barriers

as more influential than the other group of respondents. Table (9) presents the results of the one-way ANOVA analysis.

Table 8. Ranking the Impacts of the Examined Barriers on the Decision of SMEs to Engage in E-commerce from the Perspective of the Two Groups Jointly and Separately

		Ranking based on mean value		
Code	**Barriers**	**All respondents**	**Respondents who work in SMEs engaged in e-commerce**	**Respondents who work in SMEs that are not engaged in e-commerce**
Sb	Social and Cultural Barriers	3	5	4
Tb	Technical Barriers	2	2	3
Eb	Economic Barriers	4	1	6
Pb	Political Barriers	6	3	5
Ob	Organizational Barriers	1	4	1
Lb	Legal and Regulatory Barriers	5	6	2

Table 9. The Results of One-way ANOVA Analysis for Testing the Second Hypothesis

	Barriers	**Df**	**F**	**Between group significance ≤ 5%**	**Respondents who work in SMEs engaged in e-commerce (Mean)**	**Respondents who work in SMEs that are not engaged in e-commerce (Mean)**
Sb	Social and Cultural Barriers	138	2.282	0.135	3.0759	3.4596
Tb	Technical Barriers	138	0.637	0.427	3.1862	3.4772
Eb	Economic Barriers	138	0.063	0.802	3.2759	3.3263
Pb	Political Barriers	138	0.715	0.400	3.1207	3.3553
Ob	Organizational Barriers	138	2.833	0.096	3.0862	3.7456
Lb	Legal and regulatory barriers	138	6.701	0.011	*2.827	*3.539

(*): This sign indicates that the value is statistically significant at the statistical significance level of 0.001.

(**): This sign indicates that the value is statistically significant at the statistical significance level of 0.05.

5.7 The Use of E-commerce Applications

Table (10) presents the extent of using e-commerce applications among the Jordanian SMEs operating in the food and beverage industry. It was found that the extent of using these application by these SMEs is low. That indicates that e-commerce applications are not utilized much by these SMEs. Such low use may be attributed to the aforementioned barriers. Electronic advertising and electronic marketing are the applications used the most by the SMEs engaged in e-commerce.

Table 10. The Use of E-commerce Applications

Applications	Respondents who work in SMEs that are not engaged in e-commerce (59)		Respondents who work in SMEs engaged in e-commerce (80)		All (139)	
	Percentage (yes)	Percentage (No)	Percentage (yes)	Percentage (No)	Percentage (yes)	Percentage (No)
Electronic Advertising	93.1	6.9	26.3	73.7	48.8	52.2
Electronic Marketing	89.7	10.3	8.8	91.2	36	64
Supply Chain Management	27.6	72.4	000	100	9.3	91.7
Customer Service Support	79.3	20.7	000	100	26.7	73.3
Order and Delivery	24.1	75.9	000	100	8.1	91.9
Payment System	79.3	20.7	000	100	7	93

6. The Study's Findings and Discussion

It was found that the examined barriers have a statistically significant impact - at the statistical significance level of 0.05 - on the decision of the Jordanian SMEs operating in the food and beverage industry to engage in e-commerce. Thus, these barriers can significantly hinder these SMEs from engaging in e-commerce. The examined barriers are classified into social, cultural, technical, organizational, economic, political and legal and regularity barriers. Thus, these types of barriers can significantly hinder these SMEs from engaging in e-commerce. It was found that organizational and technical barriers are the most influential barriers. That is in agreement with the results concluded by Al Ghamdi et al. (2013), Al-Dmour et al. (2017), and Rahayu and Day (2017). It was found that there are no statistically significant differences - at the statistical significance level of 0.05 - between the respondents' attitudes which can be attributed to the engagement of the SME in e-commerce (i.e., whether the enterprise is engaged in e-commerce or not).

However, it was found that the latter result doesn't apply to the legal and regulatory barriers. The differences of attitudes in this regard are in favor of the respondents who work in SMEs that are not engaged in e-commerce. In other words, the latter respondents perceive the legal and regulatory barriers as more influential than the other respondents. It was found that the percentage of engagement in e-commerce among the SMEs operating in the food and beverage industry is low. That may be attributed to the lack of awareness among managers and owners about the benefits obtained from EC. It can be also attributed to the poor telecommunication services and inappropriate governmental regulations and policies.

7. Research Limitations and Future Studies

The major limitation of this study is that the sample of SMEs of food and beverage companies surveyed is limited to Jordan. This limitation should be kept in mind when generalizing the results of this study. Another limitation that can be identified is that the sample is confined to companies only in Amman and not in all parts of Jordan. In order to overcome this limitation, I would suggest recruiting each and every active SME in Jordan to gain more in-depth understanding through the use of reports issued by various ministries, such as the Ministry of Industry, Trade and Supply as well as the Ministry of Information and Communication Technology. This

study also points out the complexity of making assumptions about using these factors as variables in the quantitative analysis of the adoption models. Many factors show up as significant for only one or two of the three studied groups. However, all of the 27 factors/barriers were found significant across the two groups. Also, as presented clearly in this study, many factors should be studied carefully, because a single factor can be perceived as having negative influence on the decision for adoption of e-commerce. These findings might encourage other researchers to use these factors in future research. To sum up, this study has found that of the twenty-seven factors taken from a large number of variables mentioned in the literature, all of them were found statistically significant. Moreover, perceptions regarding barriers vary between adopters and non-adopters of e-commerce. Some of the significant factors found in this study have not received much attention in prior studies. They may need further attention and concern through government regulations and rules.

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