

Electronic Commerce Obstacles Facing the Public Shareholding Jordanian Industrial Companies

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Abstract

This study aimed at identifying the e-commerce obstacles the Jordanian public shareholding companies are facing, the study's importance stems from focusing on determining the factors related to the adoption of e-commerce applications in these companies, in order to test them in practice and make sure of their ability to influence the adoption of e-commerce applications in Jordanian companies. To achieve the objectives of the study a review of literature was conducted through reviewing previous studies related to the problem of the study, a questionnaire was designed to collect data from a sample survey of selected Jordanian public shareholding industrial companies, and using statistical tools (statistical program SPSS) to analyze the study data and test hypotheses (averages, standard deviation). The results showed that the Jordanian industrial companies are facing many obstacles including: regulatory, financial, environmental, behavioral, which are preventing the adoption of e-commerce applications, while the same study showed that those companies realize the benefits of direct and indirect as well as the competitive advantages and social adoption of those applications. The study recommended that it is important to overcome all the obstacles facing the Jordanian public shareholding companies which are preventing the adoption of e-commerce applications, in order to accelerate the gains and reap the benefits of practicing electronic commerce.

Keywords: e-commerce, reality of e-commerce, challenges of e-commerce, obstacles of e-commerce

1. Introduction

Perhaps one of the most important issues facing the Jordanian industrial companies is the acceleration pace of technological development, as the contemporary world is witnessing rapid development at various levels, especially in the sector of information and communications which are attributed as fast changing, and abundant with information, among these developments is the emergence of new terms that transcended physical boundaries and cancelled all geographical restrictions that limit human freedom in exercising his activities.

Among these new terms is the term "electronic commerce", as E-commerce being a new concept that explains the process of buying, selling or exchanging products, services and information through computer networks, including the Internet, others defined e-commerce as means for delivering information, services or products via telephone lines or via computer networks or through any technical means.

But the picture of e-commerce in Jordan differs to a large extent from the rest of the developed world, as we find many industrial companies are still far from the practicing e-commerce, where we find that Jordan is still lagging behind in electronic trading in the industry sector, as the experience in the field of e-commerce is still in the embryonic stage despite the urgent need for this type of trade, in order to open our markets to the world.

1.1 The Study Problem

E-commerce faces different challenges that require adaptation and effectiveness of industrial companies to meet the changes of the open market, competition, speed of response and understanding of market requirements, the evolution and development of plans, stimulating innovation and creating new horizons for industries; of these challenges are the following:

1. The need for devices, services, applications and infrastructure of information and communications.
2. The varying level of technological development and human resources between the industrial companies.
3. Openness and efficiency of markets and intense competition within the domestic and global market.
4. A lot of people are staying away from participating in e-commerce by reasons of fear of privacy disclosure, or lack of trust and lack of safe market.

1.2 The Study Importance

The importance of this study stems from the substantial rise in the volume of e-commerce globally in the past few years, and the large market transformation to e-commerce, which is the modern trading way in the world of technology. Where it requires us to recognize the reality of e-commerce in Jordan and to keep up and explore the reasons and obstacles that can limit the ability of industrial companies from using e-commerce applications or the expansion of use.

1.3 The Study Objectives

The research aims to shed light on the subject of e-commerce and its situation in Jordan and in particular the reality of industrial companies in order to uncover the reasons for the delay in the use of this type of trade, the most important obstacles facing it, and the most important recommendations that will help accelerate the development of this new method to take advantage of the great benefits provided by e-commerce applications in order to:

1. To which extent industrial companies are utilizing from the services of the Internet through the use of e-commerce.
2. Identifying the most important obstacles facing the spread of e-commerce in industrial companies.
3. Identifying ways of developing the use of the Internet in the field of e-commerce.
4. Come up with proposals and recommendations on the determinants of the adoption of e-commerce applications in industrial companies.

1.4 Literature Review

There are several noteworthy studies made by researchers in an attempt to examine the factors and obstacles hindering the diffusion of e-commerce in enterprises especially in the industrial sector, some of these studies are summarized below:

Abazaid (2005) examined in his study the reasons for the clear reduction in the use of e-commerce in the Arab world and its weak indicators compared with the western developed countries, and the lack of a properly developed electronic payment system causing limited economic activities related to e-commerce as well as the lack of financial and monetary structure appropriate to facilitate the payments and adjustments resulting from e-commerce transactions.

The study has concluded that the area of e-commerce is no longer an economical option, but a necessity, and that the delay in implementation of integrated strategies for e-commerce does not only lead to economic marginalization in the global economy with increasing volume of electronic transactions, but to further deterioration and less competition due to declining balance of Arab countries in the global exports share.

Zyoud (2005) conducted a study which relied on the analytical descriptive method and addressed the importance of e-commerce and its revenues in addition to the risks of electronic tax evasion, and the problem of the current traditional tax evasion, the study also looked at the problems of taxation treatment within the context of e-commerce and related tax problems, in addition to the challenges facing e-commerce in Arab markets. The study has concluded that there is a need to transform e-commerce from local to global markets, in order to increase pressure on producers and consumers at the same time, on producers through competing other international companies and focusing on quality to survive and continue, and consumers by eliminating the role of the average traditional consumer and open the door wide for him to choose goods from the world market via the Internet.

Abdul Wahid (2009) Conducted a comparative statistical study relative to the importance of e-commerce in the various fields and the number of companies used them, as well as for use by small businesses, the study also touched on the features owned by small projects that uses e-commerce as well as the most important impediments to small electronic projects.

The researcher reached to a set of results that can be summarized in the following: despite the increasing proportion of small electronic projects of the total small businesses in the developed world, the Arab world is still slow in his steps in this direction due to a number of factors, most notably the small number of Internet users, poor infrastructure in the field of communications and information, the delays by the majority of Arab governments in taking action to create the legal and banking structure to ensure the safety and confidence for customers, as well as the lack of qualified human resources who are capable of using information technology and maintaining hardware, especially in the scope of small business owners or those considering starting out.

Wang, Lin (2009) conducted a study entitled "Accurately predicting the success of B2B e-commerce in small and medium enterprises" the study established an analytical hierarchy framework to help SMEs predicting implementation success as well as identifying the actions necessary before implementing B2B e-commerce to increase e-commerce initiative feasibility. The consistent fuzzy preference relation was used to improve decision-making consistency and effectiveness in SMEs. The researchers concluded that the three most influential factors affecting the success of B2B e-commerce in SMEs are management support, industry characteristics and government policies; meanwhile, the three least influential factors are organizational culture, IT integration and firm size.

Ghobakhloo, Aranda & Amada (2011) examined in their study the factors within the technology-organization-environment (TOE) framework that affect the decision to adopt e-commerce and extent of e-commerce adoption, as well as adoption and non-adoption of different e-commerce applications within small- and medium-sized enterprises (SMEs). A questionnaire was conducted to collect data from 235 managers or owners of manufacturing SMEs in Iran. The data were analyzed by employing factorial analysis and relevant hypotheses were derived and tested by multiple and logistic regression analysis. The study concluded that e-commerce adoption within SMEs is affected by the following: perceived relative advantage, perceived compatibility, CEO's innovativeness, information intensity, buyer/supplier pressure, support from technology vendors, and competition. Similarly, description on determinants of adoption and non-adoption of different e-commerce applications has been provided.

Lal (2002) in his study identified and analyzed the determinants of the adoption of e-business technologies in the manufacturing sector in India. The study was based on primary data collected from (51) firms located in the National Capital Region. Entrepreneurial characteristics, historical data of firms, and other firms-specific factors such as size of operation, export intensity, international orientation, wage rates, and profit margins were included in the analysis. The study revealed that the firms that are more internationally oriented have adopted more advanced e-business tools. More qualified entrepreneurs manage firms that have adopted advanced e-business tools and pay higher wages to workers. The study captures the role of bandwidth in diffusion of e-business. The results revealed evidence of efficiency in business transactions and an augmentation in the competitiveness of firms due to the adoption of e-business tools.

2. Theoretical Framework

2.1 Introduction

In this digital age, where the Internet has expanded dramatically, the concept of e-commerce which offers many advantages for businesses has popularized; for business people it became possible to avoid the inconvenience of travel to meet their partners and their customers, and they became able to reduce the time and money to promote their goods and display them in the markets. For customers, they don't need to move a lot to get what they want, or stand in a long lines, or even use the traditional money, all they need is a computer and an Internet browser program, and an access to the Internet. E-commerce is not limited as some think to the sale and purchase of goods and services via the Internet, as e-commerce since its inception always included processing sales and purchase transactions, and sending remittances via the Internet, but e-commerce, in fact, involve What is much more than that, where it has expanded to include the sale and purchase of the information along with the goods and services, e-commerce do not stop at this point, as the prospects offered by e-commerce for companies, institutions and individuals do not stop at a certain point (Suleiman, 2004).

2.2 The Concept of E-Commerce

E-commerce is one of the modern expressions that are entering into our daily lives and it is being used in many life activities which are linked to the revolution of information and communications technology. The concept of e-commerce which is divided into two parts, the first "electronic", refers to the description of the field of trade performance, and it means performing of a business activity using electronic media and methods such as the Internet, while the second part "commerce", which refers to economic activity conducted through the circulation of goods and services between governments, institutions and individuals and are governed by several rules and regulations that are internationally recognized (Abdul-Muhsin, 2005).

2.3 The definition of E-Commerce

There is no internationally agreed definition of e-commerce, literature related to this subject included many definitions related to the subject of e-commerce trying to reach a comprehensive and general definition based on benefiting parties dealing with e-commerce, the most important definitions are but not limited to:

1. A modern approach in the work directed to goods, services and speeds of performance, and includes the use of the communications network in the search and retrieval of information to support the decision of individuals and organizations.
2. Performance of the business process between trading partners using advanced information technology to improve the efficiency and effectiveness of performance.

2.4 The Reality of E-Commerce in Jordan

Jordanian government adopted in agreement with the United States within the free trade agreement between the two countries, a program to find a free trade environment for e-commerce. The two countries have agreed not to impose more burden tariffs on electronic transactions nor the imposition of unnecessary constraints for the arrival of digital products to the market, or impede the ability to provide services through electronic means, which encourages undoubtedly companies and individuals who adopt e-commerce on the use of these services, as well Jordan issued the e-commerce electronic Transactions Act of 2001 in order to organize e-commerce in the country (Yassin & Al-Allaq, 2004).

2.5 The Challenges of E-Commerce

Youssef & Sumeidei, (2004) divided the challenges facing e-commerce into three categories as follows:

1. The technical challenges of e-commerce
 - There is a lack of reliability, safety, standards and protocols.
 - There is no adequate bandwidth for wired and wireless telecommunications.
 - Software development tools are still constantly and quickly changing.
 - Difficult process of attaching the Internet and e-commerce software with some applications and databases currently used.
 - Providers may need to special Web servers and other infrastructure, as well as network servers.
 - Some e-commerce software does not fit programmatically and technically with some hardware or with some operating systems.
2. Non-technical challenges of electronic commerce
 - Cost and marketing: the cost of e-commerce development by the company itself may be very high and errors resulting from lack of experience may cause disabling e-commerce. There are several opportunities to give specialized companies to carry out these tasks, but not easy to know which company is appropriate. In order to market this system, the manager has to deal with indirect benefits which are difficult to calculate.
 - Security and Privacy: These things are very important in the world of the company to the consumer, especially in the field of security and safety, where many think they are 100% invulnerable; many people are reluctant to participate in e-commerce by reasons of fear of disclosure of their privacy.
 - Lack of trust and user resistance: Some of the customers do not trust anonymous itinerant who do not see them and do not trust paperless transactions and electronic cash.
3. Other Factors
 - The inability of touching products: Some customers would like to touch the products before buying them.
 - Many of the legal matters are still unresolved in e-commerce, especially matters related to piracy.

- E-commerce is still in its infancy and is characterized by rapid change; a lot of people would like to see something stable before investing in it.
- There is no sufficient number of buyers and sellers in many applications to make this profitable.
- E-commerce may cause a breakdown in the relations of people with each other.
- Access to the Internet is still too expensive for many people, and the connection speed is still slow in many countries of the world.

2.6 Obstacles of E-Commerce and its Determinants

Moori (2006) stated that there are many constraints and limitations facing e-commerce possibility of expansion, which can be summarized as follows:

- 1) The difficulty of providing appropriate infrastructure for e-commerce, where hardware, software, telecommunication infrastructure, information resources and Internet services along with the ongoing maintenance of devices and equipments and permanent development, are considered to be the basic structure for practicing e-commerce with high confidence.
- 2) The difficulty of providing an appropriate legal environment and adapting some of the laws related to taxation of business transactions, intellectual property, standards and metrology, and other laws and regulations according to the imperatives posed by e-commerce, as well as the importance of the effectiveness of these laws in terms of administration, so they will not be a barrier to e-commerce implementation.
- 3) A constant need to take the necessary measures to ensure the security and integrity of electronic payments.
- 4) Identifying a clear framework for the recognition of electronic signature.
- 5) Developing policies or general rules with the objective of consumer protection and the preservation of their rights.
- 6) Difficulty of keeping pace with the rapid developments in software and electronic technology, where software development tools are exposed to rapid changes.
- 7) The process of expansion in the use of internet costs continues to be high and it is facing difficulty in moving to many of the major consumers.
- 8) Processes of change in marketing activities and trade are often faced with some resistance by consumers, thus hindering the adaptation of these developments quickly.
- 9) Lack of support services in support of e-commerce activities, especially with regard to some of the detailed information needed by the consumer to make a preferential decision to buy.
- 10) There is a belief among most individuals that e-commerce is expensive and unsafe, which reduces the use.
- 11) The small number of Internet users in the Arab world because of the high cost of communication with the network within the Arab world, and the lack of awareness campaigns and guidance for the use of the Internet, as well as the high prices of computers and hardware needed to connect to the network, as well as the slow transmission of information across the network within the Arab world.
- 12) Lack of readiness of consumers in the Arab world to use the network in the area of e-commerce, as well as lack of knowledge of the existence of Arab shopping sites.
- 13) Lack of experience with some suppliers and the majority of users, due to the lack of computer knowledge, and lack of experience and skills, which led to the difficulty of building e-shopping sites and managing them effectively.

3. The Study Hypotheses

Based on the importance, objectives and the problem of the study the following hypotheses were formulated:

Ho1: There is no statistically significant relationship between the adoption of e-commerce applications by the Jordanian public shareholding companies and regulatory constraints.

Ho2: There is no statistically significant relationship between the adoption of e-commerce applications by the Jordanian public shareholding companies and financial constraints.

Ho3: There is no statistically significant relationship between the adoption of e-commerce applications by the Jordanian public shareholding companies and environmental constraints.

Ho4: There is no statistically significant relationship between the adoption of e-commerce applications by the Jordanian public shareholding companies and the behavioral constraints of the workers.

Ho5: There is no statistically significant relationship between the adoption of e-commerce applications by the Jordanian public shareholding companies and the realization of its direct and indirect benefits.

Ho6: There is no statistically significant relationship between the adoption of e-commerce applications by the Jordanian public shareholding companies and the awareness of its competitive and social benefits.

4. Methodology

This study is based on the theoretical method in gathering facts and information on the nature of the problem and also the method of description and analysis of this information to reach conclusions on this matter which help to achieve the desired goal of this study.

In addition to conducting interviews in order to distribute the questionnaires to selected sample from the population of the study in order to test hypotheses and up to the recommendations.

4.1 The Study Population

The study population consists of marketing and information systems personnel in the Jordanian public shareholding industrial companies listed in the Amman Stock Exchange, a total of (79) Companies are listed and classified by the following sectors:

Pharmaceutical and medical industries, chemical industries, paper and cardboard industries, printing and packaging, food and beverages, tobacco and cigarettes, the extractive industries, technical, engineering and construction industries, the garment industry, leather, fabric, glass and ceramic industries.

4.2 The Study Sample

A stratified sample has been withdrawn from each sub-sector belonging to the industrial sector at random, the sample consisted of (40) companies and a questionnaire was distributed to members of the sample where the total questionnaires distributed were (120) questionnaire divided between the marketing staff and the Department of Information Systems in these companies, (96) questionnaire were retrieved, (6) questionnaires were excluded due to incomplete data, and (90) questionnaire remained suitable for analysis.

4.3 Methods of Data Collection

- Primary sources: a questionnaire was distributed to the study sample to obtain the data necessary for the subject of the study taking into account that the accuracy, objectiveness, clearness, and that the questions cover the subject of the study.
- Secondary sources: The books published scientific literature of importance to the subject of the study.

5. Data Analysis

5.1 Demographic Description of the Study Sample

The first part of the questioner was concerned about distribution-resolution analysis of the study sample according to demographic and personal characteristics and the results were as follows:

First: Gender

Frequencies in table number (1) indicates that the bulk of the genus respondents are males reaching (61) 67% while the number of females was (29) 33%, this discrepancy can be attributed to the fact that the interest in this study is about the staff in information systems and marketing departments as most occupants of these jobs are males, and this also reflects the nature of Jordanian society and eastern employment directions toward males.

Table (1): Gender

Gender	Frequency	Percentage
Male	61	67%
Female	29	33%
Total	90	100%

Second: Age group

Regarding the distribution of the study sample by age frequencies indicate in table number (2) below that most members of the sample are within the age category (35-44) with a total of 37 members at a rate of 41% of all respondents, next comes individuals within the category (45 and above) with a total of 20 members at a rate of 23%, while the sample that fall within the age group (25-34) had a total of 18 members and 20% rate, while the number of respondents that fall under the age of 25 totaled 15 and 16% rate, respectively, and therefore, this indicates to take advantage of this difference in views and explore all the different age groups as possible.

Table (2): Age Group

Age	Frequency	Percentage
Less than 25	15	16%
25-34	18	20%
35-44	37	41%
45 and above	20	23%
total	90	100%

Third: Experience

Table number (3) below shows the distribution of sample according to the number of years of experience, the results showed that 33% of the sample was within the third category, which indicates the percentage of workers that had work experience between 11-15 years, and this indicates the high level of expertise within the members of the sample, this is one of the positive and good indicators of information systems and marketing sectors in Jordan, which in turn helps to distinguish the relative precision answers which serve the objectives of the study to a great extent and helps getting precise results.

Table (3): Experience

Experience	Frequency	Percentage
Less than 6 years	23	25%
6-10 years	25	27%
11-15 years	30	33%
16 years and above	12	15%
Total	90	100%

Fourth: Specialization

Regarding the sample distribution according to specialization, frequencies in the table number (4) below indicates that the majority of the respondents are specialized in marketing with 46% of the total respondents, next comes the information systems specialization with a total of 25 respondents equaling 27% of the total, and 26% for other disciplines.

Table (4): Major

Major	Frequency	Percentage
Information systems	25	28%
Marketing	42	46%
Other	23	26%
Total	90	100%

Fifth: Sectors

Frequencies in table number (5) below indicates that questionnaires have been distributed to most industrial sectors, 19 questionnaires have been recovered from food and beverages sector by 21% since this sector one of the largest in Jordan, 18 questionnaire were recovered from electrical industries sector at a rate of 20%, 12 questionnaire have been recovered from the pharmaceutical and the medical industries sector at a rate of 13%, next came the chemical industries sector with 9 questionnaires recovered at a rate of 10%, and in the tobacco and cigarettes industries sector 8 questionnaires were recovered at a rate of 9%, both engineering and constructions industries sector and fabric and leather industries came at the same level with the tobacco and cigarettes industries sector at 9%, glass and ceramics industry sector came next at 6%, and last was the extractive industries sector with 3 questionnaires recovered at 3%.

Table (5): Industry Sector

Sector	frequency	Percentage
Pharmaceutical and medical industries	12	%13
chemical industries	9	%10
food and beverages	19	%21
tobacco and cigarettes	8	%9
the extractive industries	3	%3
engineering and construction industries	8	%9
Electrical industries	18	%20
the fabric and leather industries	8	%9
glass and ceramic industries	5	%6
Total	90	%100

5.2 Results of the Study and Testing of Hypotheses

This study aimed at determining the capacity of the Jordanian public shareholding companies to meet the challenges faced by e-commerce. The collected data will be analyzed using the statistical analysis program (SPSS).

5.3 Validity and Reliability Test

The validity of the instrument of the study has been proven using the statistical parameter Alpha Cronbach which amounted to (70%). This value is greater than the percentage accepted statistically of (60%) (Sekaran, 2000), which means that the scale has acceptable significance of stability, and confirms the possibility of obtaining the same results on another sample under the conditions of the study.

5.4 Study Hypotheses Discussion

The researchers discussed the hypotheses of the study through the answers of respondents to the questions of the study questionnaire, the results were as following:

First Hypotheses

There is no statistically significant relationship ($\alpha < 0.05$) between the adoption of the Jordanian public shareholding companies for e-commerce applications and the regulatory obstacles (management support, internal infrastructure, and the availability of skills and experience).

Table No. (6): The Averages and Standard Deviations for Answers Provided by Respondents that Measure the First Hypothesis

Number	Paragraph	Mean	Standard Deviation
1	Weakness of the support provided by the Department for the use of e-commerce applications.	3.3667	1.15917
2	Low level of awareness of management for the company's need for the use of e-commerce applications.	3.5333	1.22428
3	Low level of infrastructure in terms of the number of computers and communication lines.	3.2667	1.22990
4	Lack of staff with skills and experience in information technology.	3.8667	1.27937
5	Low level of technical support in terms of lack of specialized information technology management.	3.3000	1.23596
Mean Average		3.4667	

When we tested the hypothesis at the 95% confidence level and the degree of significance of 5% found that the value of T-test calculated is equal to (3.861) and the value of the T-test spreadsheet is equal to (1.986). Since the value of T calculated is greater than the value in the table the nihilism hypothesis is rejected and the alternative hypothesis is accepted as shown in Table (7).

Table No. (7)

Variable	The calculated T	T tabular	Significance	Result
First Hypotheses	3.861	1.986	zero	Accept the alternative hypothesis and the rejection of nihilism

Second Hypotheses

There is no statistically significant relationship ($\alpha < 0.05$) between the adoption of the Jordanian public shareholding companies for e-commerce applications and the financial obstacles (the cost of initial setup, the cost of maintenance, the costs of training and education, the shift from traditional methods).

Table No. (8): The Averages and Standard Deviations for Answers Provided by Respondents that Measure the Second Hypothesis

Number	Paragraph	Mean	Standard Deviation
1	The high cost of establishing the website and maintain this site.	3.4000	1.16264
2	Lack of financial resources necessary to establish the appropriate location.	4.1000	1.44676
3	The high costs of training and education of workers on these applications.	3.6333	0.96431
4	Conversion costs of traditional methods to electronic commerce.	3.2333	0.89763
Mean Average		3.5917	

When we tested the hypothesis at the 95% confidence level and the degree of significance of 5% found that the value of T-test calculated is equal to (4.521) and the value of the T-test spreadsheet is equal to (1.986). Since the value of T calculated is greater than the value in the table the nihilism hypothesis is rejected and the alternative hypothesis is accepted as shown in Table (9).

Table (9)

Variable	The calculated T	T tabular	Significance	Result
Second Hypotheses	4.521	1.986	zero	Accept the alternative hypothesis and the rejection of nihilism

Third Hypotheses

There is no statistically significant relationship ($\alpha < 0.05$) between the adoption of the Jordanian public shareholding companies for e-commerce applications and environmental obstacles (governmental legislations, external infrastructure, government support, the size of the external audience).

Table No. (10): The Averages and Standard Deviations for Answers Provided by Respondents that Measure the Third Hypothesis

Number	Paragraph	Mean	Standard Deviation
1	The absence of government legislation regulating e-commerce	2.9000	0.48066
2	Twice the national networks and cannot be relied upon.	3.4000	1.00344
3	The lack of a sufficient number of clients who are dealing through the internet.	3.2667	1.22990
Mean Average		3.1889	

When we tested the hypothesis at the 95% confidence level and the degree of significance of 5% found that the value of T-test calculated is equal to (2.561) and the value of the T-test spreadsheet is equal to (1.986). Since the value of T calculated is greater than the value in the table the nihilism hypothesis is rejected and the alternative hypothesis is accepted as shown in Table (11).

Table (11)

Variable	The calculated T	T tabular	Significance	Result
Third Hypotheses	2.561	1.986	zero	Accept the alternative hypothesis and the rejection of nihilism

Fourth hypotheses

There is no statistically significant relationship ($\alpha < 0.05$) between the adoption of the Jordanian public shareholding companies for e-commerce applications and the employee behavioral obstacles (confidence, initiative, language, the need for training, job loss, change resistance)

Table No. (12): The Averages and Standard Deviations for Answers Provided by Respondents that Measure the Forth Hypothesis

Number	Paragraph	Mean	Standard Deviation
1	Weakness of the support provided by the Department for the use of e-commerce applications.	2.8667	0.77608
2	Low level of awareness of management for the company's need for the use of e-commerce applications.	2.9667	0.99943
3	Low level of infrastructure in terms of the number of computers and communication lines.	3.000	0.90972
4	Lack of staff with skills and experience in information technology.	3.0667	0.78492
5	Low level of technical support in terms of lack of specialized information technology management.	3.1667	0.91287
6		3.1333	0.81931
Mean Average			3.4111

When we tested the hypothesis at the 95% confidence level and the degree of significance of 5% found that the value of T-test calculated is equal to (5.611) and the value of the T-test spreadsheet is equal to (1.986). Since the value of T calculated is greater than the value in the table the nihilism hypothesis is rejected and the alternative hypothesis is accepted as shown in Table (13).

Table No. (13)

Variable	The calculated T	T tabular	Significance	Result
Fourth Hypotheses	5.611	1.986	zero	Accept the alternative hypothesis and the rejection of nihilism

Fifth Hypotheses

There is no statistically significant relationship ($\alpha < 0.05$) between the adoption of the Jordanian public shareholding companies for e-commerce applications and, the realization of the direct and indirect benefits (reduced costs, access to new customers, improve services to customers and suppliers, improving the mental image of the company).

Table No. (14): The Averages and Standard Deviations for Answers Provided by Respondents that Measure the Fifth Hypothesis

Number	Paragraph	Mean	Standard Deviation
1	Various cost reduction	4.5000	0.50855
2	Access to new customers	4.4000	0.49827
3	Provide better service to customers	4.7000	0.46609
4	Strengthen the mental image of the company as innovative	4.1333	0.50742
Mean Average		4.4333	

When we tested the hypothesis at the 95% confidence level and the degree of significance of 5% found that the value of T-test calculated is equal to (6.252) and the value of the T-test spreadsheet is equal to (1.986). Since the value of T calculated is greater than the value in the table the nihilism hypothesis is rejected and the alternative hypothesis is accepted as shown in Table (15).

Table (15)

Variable	The calculated T	T tabular	Significance	Result
Fifth Hypotheses	6.252	1.986	zero	Accept the alternative hypothesis and the rejection of nihilism

Sixth Hypotheses

There is no statistically significant relationship ($\alpha < 0.05$) between the adoption of the Jordanian public shareholding companies for e-commerce applications and the awareness of the competitive and social benefits (better position in the market, strong bonds with clients, change the daily routine of work, freedom from routine).

Table No. (16): The Averages and Standard Deviations for Answers Provided by Respondents that Measure the Sixth Hypothesis

Number	Paragraph	Mean	Standard Deviation
1	Reduce routine work of the staff	4.3667	0.55605
2	Achieve a better position among competitors in the market	4.2333	0.77385
3	Form relationships and strong ties with customers.	4.5000	0.50855
Average			4.30667

When we tested the hypothesis at the 95% confidence level and the degree of significance of 5% found that the value of T-test calculated is equal to (5.862) and the value of the T-test spreadsheet is equal to (1.986). Since the value of T calculated is greater than the value in the table the nihilism hypothesis is rejected and the alternative hypothesis is accepted as shown in Table (17).

Table No. (17)

Variable	The calculated T	T tabular	Significance	Result
Sixth Hypotheses	5.862	1.986	Zero	Accept the alternative hypothesis and the rejection of nihilism

6. Conclusion

After statistical analysis and testing of hypotheses have been reached following conclusions and recommendations:

1. Facing the Jordanian industrial companies contribute to the general regulatory constraints (management support, internal infrastructure, availability of skills and experience) to prevent adoption of e-commerce applications.
2. Facing the Jordanian industrial companies contribute to the general financial constraints (the cost of initial setup, the cost of maintenance, the costs of training and education, the shift from traditional methods) prevent the adoption of e-commerce applications.
3. Facing the Jordanian industrial companies contribute to the general environmental constraints (government legislation, external infrastructure, government support, the size of the public external) prevent the adoption of e-commerce applications.
4. Facing the Jordanian industrial companies contribute to the general constraints of behavioral factors (confidence, initiative, language, the need for training, job loss, resistance to change) prevent the adoption of e-commerce applications
5. Companies are realizing the Jordanian public shareholding industrial benefits of direct and indirect costs from the adoption of e-commerce applications (to reduce costs, get new customers, and improve services to customers and suppliers, improving the mental image of the company).

6. Companies are realizing the Jordanian public shareholding industrial competitiveness and social benefits from the adoption of e-commerce applications (better position in the market compared with competitors, strong bonds with clients, change the routine of daily work and freedom from red tape).

7. Recommendation

1- The researcher recommends overcoming the obstacles that prevent the adoption of e-commerce applications by the Jordanian companies, through the adoption of the following procedures:

- a- Developing an appropriate IT infrastructure in Jordan.
- b- Developing an electronic oriented organizational culture in the Jordanian companies.
- c- Improving the level of awareness towards the laws and legislations related to e-commerce.
- d- Developing an appropriate electronic financial environment.

2- The researcher recommends accelerating the adoption of e-commerce applications by Jordanian companies, and creating incentives that could lead companies to adopt e-commerce, through the following:

- a- Maximizing the contribution of government institutions to stimulate companies to use electronic commerce.
- b- Improving the e-commerce services sector in Jordan.
- c- Encouraging all Jordanian companies to adopt e-commerce applications.
- d- Promoting the culture of e-commerce between companies.

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