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أثر التجارة الإلكترونية على الأداء المالي للبنوك التجارية الأردنية المدرجة في بورصة عمان

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Abstract:

Objectives: The research aims to measure the Impact of Electronic Commerce on the Financial Performance of Jordanian Commercial Banks (JCB) listed on Amman stock exchange (ASE).

Methods: The research community includes (12) Commercial banks in Jordan, where the financial statements were collected for the period (2019-2023) listed on ASE. A linear correlation model was developed to measure the impact of e-commerce on the financial performance of JCB. To examine the impact of Electronic Commerce (independent variable) through a questionnaire that was distributed on (60) branch managers of the twelve banks included in the study sample on Financial Performance (dependent variable) via Return on assets and Dividend yield published in ASE.

Results: The researcher found that there is a negative impact for Challenges (Obstacles) of Electronic Commerce on both return on assets and dividend yield for JCB. Also, there is a positive impact for E-commerce Success Factors on each return on assets and dividend yield.

Conclusion: The main research recommendations were needed to focus on decrease the Challenges of Electronic Commerce as much as possible for JCB, also, to look after for E-commerce success factors by improve an E-commerce legislative system in Jordan.

Keywords: *Electronic Commerce; Financial Performance; Commercial Banks.*

الملخص:

الأهداف: يهدف البحث إلى قياس أثر التجارة الإلكترونية على الأداء المالي للبنوك التجارية الأردنية المدرجة في بورصة عمان. وشمل مجتمع البحث (12) بنكًا تجاريًا في الأردن، حيث تم جمع البيانات المالية للفترة (2019-2023) المدرجة في بورصة عمان.

المنهجية: شمل مجتمع البحث (12) بنكًا تجاريًا في الأردن، حيث تم جمع البيانات المالية للفترة (2019-2023) المدرجة في بورصة عمان. وقد تم تطوير نموذج ارتباط خطي لقياس أثر التجارة الإلكترونية على الأداء المالي لبنك JCB، وذلك لدراسة أثر التجارة الإلكترونية (المتغير المستقل) من خلال استبانة تم توزيعها على (60) مدير فرع للبنوك الاثني عشر المشمولة في عينة الدراسة على الأداء المالي (المتغير التابع) من خلال العائد على الأصول وعائد الأرباح المنشورة في بورصة عمان.

النتائج: توصل البحث إلى وجود تأثير سلبي لتحديات (معوقات) التجارة الإلكترونية على كل من العائد على الأصول وعائد الأرباح للبنوك التجارية الأردنية. كما يوجد تأثير إيجابي لعوامل نجاح التجارة الإلكترونية على كل من العائد على الأصول وعائد الأرباح.

الخلاصة: أوصى البحث بضرورة التركيز على تقليل تحديات التجارة الإلكترونية قدر الإمكان بالنسبة للبنوك التجارية الأردنية، وكذلك الاهتمام بعوامل نجاح التجارة الإلكترونية من خلال تحسين النظام التشريعي للتجارة الإلكترونية في الأردن.

الكلمات المفتاحية: *التجارة الإلكترونية؛ الأداء المالي؛ البنوك التجارية.*

1 Introduction

The usage of the Internet since businesses compete in different ways has benefited customers by using expedited tactics at the local, state, and international levels. Due to the Internet's ability to bring the world closer to consumers and make it seem like a small town, national laws barriers to accessing the international market have decreased. Therefore, evaluating the impact of modifications to the global trade technique on the systems is essential from time to time (Knaus, 1999).

According to Knaus (1999), electronic commerce have been one of the most promising modeling strategies in computer science. Systemizes can complete data sorting and manipulation jobs a zillion times faster with computers than they can with pens and paper.

As Valerio (2019) said Conventional commercial systems limit a relatively high category's ability from customers to access multiple markets at once. Conversely, electronic commerce made a revolution to markets. As a result, there is a rise in business transactions worldwide specially in developed countries.

Internet usage has emerged as one of the essential key for clients to keep their money for a long time as possible in banks to use it in the e-commercial transactions, which will be very positive for financial performance of banks and economy too. The globalization era has bring wide changes mainly for trade, it changed the traditional trade to E-commerce. These changes include the buying, selling, subsequent delivery of services, and transfer money worldwide, which can get high profitably (Report N, 1997).

The overwhelming amount of data indicates that e-commerce transactions by business-to-business (B2B), business-to-customer (B2C), government-to-business (G2B), have had a significant impact on commercial firms, industries, services and banks transfers, which has increased the amount of money transferred between banks globally (Ballout, 2020).

According to Terzi (2011); wood (2003); and sagi (2003) indicated that the transition from traditional exchange to electronic exchanges of money is one of the main positive effects of e-commerce**.**

1.1 Problem of Study

Due the widespread use of the Internet globally and the large increase in electronic applications worldwide in all forms of e-commerce, we are unfortunately still behind in Jordan, therefore, the study's goal to investigate impact of e-commerce on the financial performance of JCB in Jordan.

1.2 Main Study Question

What is the impact of e-commerce on the financial performance of JCB?

Sub Questions:

1. Is there an impact of the e-commerce on return on assets of JCB?
2. Is there an impact of e-commerce on the dividend yield of JCB?

1.3 Study objectives

The aims of study is to know the impact of e-commerce on the financial performance of JCB (positive or negative). Also, it seeks to write down recommendations and find ways which improve e-commerce in Jordan.

1.4 Study Design

The study design model aims to determine the relationships between electronic commerce and financial performance of JCB in Jordan.

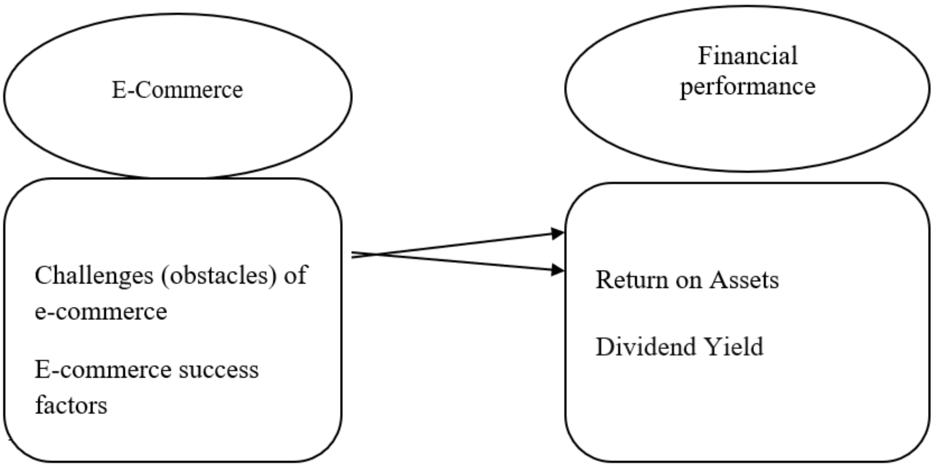

Figure 1: Study design model.

H_0: There is no statistically significant impact of e-commerce practices on financial performance of JCB.
H_{01}: There is no statistically significant impact of e-commerce practices on return on assets of JCB.
H_{02}: There is no statistically significant impact of e-commerce practices on dividend yield
Of JCB.

1.5 Descriptive Statistics

"Challenges (Obstacles) of Electronic Commerce"

No	Items
1	E- commerce is characterized by complex process
2	Banks' managers lack of modern management expertise and sufficient understanding of e-commerce
3	The risks associated with e-commerce are classified as high
4	The bank's system lacks of technology for e-commerce setup
5	The bank's system lacks of clear systemizes regarding dealing with e-commerce
6	The bank's system lakes of secure online payment methods
7	The bank's system lacks of internet infrastructure which communication and networks need
8	The bank's system lacks technical staff capable of dealing with e-commerce

"E-commerce Success Factors"

No	Items
9	The bank's management has a real action plan for e-commerce
10	The bank held training courses for its staff related to e-commerce system
11	The bank owns the strong technological infrastructure which is necessary for the practice of e-commerce
12	The banks' website is an essential part of the marketing efforts
13	The bank has an efficient supply and transportation system

2 Theoretical Framework

Many international businesses have embraced speedier and more effective B2C, B2B, and G2B communication channels as a result of e-commerce (Callahan, Weisman, & Sweet, 1996). In today's intensely competitive economy, If a business wants to survive and thrive it must provide to customers faster and more effective choices of delivery, additionally to high-quality of products and services with affordable (Burgelman, 1997).

Furthermore, e-commerce transactions is possible 24/7 availability for suppliers and customers with a secure environment. Thus, the emergence of e-commerce and its remarkable expansion are prompting businesses to develop strategies that leverage e-commerce as a primary means of conducting business with difference customers from difference nations (Mitchell, 2009).

Although there is no set definition for electronic commerce generally, it refers to doing commercial and services transactions through the most up-to-date channels of communication, including the Internet, fax, phone, money transfer services, electronic direct payment and information exchange systems. In recent times, there has been a significant association between the word "e-commerce" and online business transactions. For example, Discussions of e-commerce at Institute Economic Co-operation and Development focus mostly on dealings that take place via the Internet (Ballout,2020).

E-commerce agreements accept with all concurrent actions at the same time, booking, electronic payment, and delivery products and services to achieve the main goal for managements to maximize profit (Heng, 2006). Consequently, execution purchases and/or selling by online dealings 24/7 worldwide, that will lead to transfer and exchange money between countries, which is lead to maximize financial performance for both banks and companies too (Weng, 2007).

E-commerce converted to one of the fundamental forces that will control the world economy (Mitchell, 2009). As Robertson (1997) said a business to business trade segment considered basic commercial sector that control this growth. This segment distributed into: Purchasing, wholesaling, and supply chain by Internet.

As indicated by Qatawneh(2012), e-commerce leaves a positive impact on accounting information system thus gives customers more secure, that will lead to raise the bank's financial performance. Qatawneh's study revealed significance between e-commerce on accounting information system in Jordanian banks since e-commerce has increased the reliability and real financial performance, which reflects the qualitative features of accounting data: ameliorating the capability to handle the banks' information, minimizing errors, corroborating information, providing security and protection.

As Qatawneh (2012) said e-commerce had a significant effect on decrease cost and raise the performance of banks. The application of e-commerce affected positively on AIS for banks, which is lead to contribute towards the advancement of services delivered to clients too.

The study of Mora- Monge et al (2010) indicated that e-commerce is affecting positively on the transactions of B2C ,B2B. Hence, firms could be recognized its benefits during build business plans and strategies to maximize gains that will affect positively on the firms and Banks financial performance from various ways, which is extending from operational to strategic benefits.

Hallal and Xu (2012) pointed many researches confirmed that businesses which accepted and applied e-commerce gave their employee more salaries and wages. Consequently, the benefits extended from expansion the areas of the business, enhancing of firm effectiveness, productivity, getting data, appropriate communication and doing competitive leadership. Consequently, these a positive accomplishments for businesses and banks are dependent on effectiveness of the e-commerce and bank's systems, the benefits will be reflected to economic positively.

Asiabugwa and Munyoki (2012) said the main conclusion was a positive relationship between e-commerce and financial performance in Kenya's banks. Also, said that one of main factors which support the adoption of e-commerce strategy in banks are customer service and payment systems.

According to Ballout (2020) said there is a positive impact of e-commerce benefits on both return on assets and return on equity for commercial firms in Jordan. Terzi (2011) indicated that electronic commerce has a positive impact on financial performance for firms and banks. Which led to extent of international trade worldwide.

3 Methodology

A linear correlation model was developed to measure the impact of e-commerce on the financial performance of JCB (Return on assets and Dividend yield) relying on the financial indicators published in the annual reports of the banks on Amman Stock Exchange, and relying on the questionnaire to measure the level of e-commerce in the same banks. The questionnaire was designed by the researcher included (13) items distributed into two areas: Challenges (Obstacles) of Electronic Commerce (8) items, and E-commerce Success Factors (5) items, the data is organized and processed statistically by calculating the correlation coefficient between financial ratios and areas of e-commerce, and applying simple linear regression analysis to reveal the impact of the two dimensions of e-commerce on each of the financial indicators.

3.1 Main Research Module

Y =p ((β_1 * X_1) + E.   For each variable.
Y: Financial Performance (**y1**: Return on assets, **y2:** Dividend yield)
P: Constant
X: E-commerce (X1: Obstacles of Electronic Commerce. X2: E-commerce Success Factors)
B: Beta for e-commerce (β_1; β_2)
E: Error

3.2 Study Sample

The study sample included (12) Commercial banks in Jordan, where the financial statements for the period (2019-2023) were based on the variables (Return on assets) and (Dividend yield) published in the annual reports of Commercial banks in the Amman Financial Market to measure financial performance. But E-commerce variable was measured through a questionnaire that was distributed on (60) branch managers of the twelve banks included in the study sample.

4 The Results and Discussions

This part includes a detailed statistical analysis of the results of the study, which aims to identify the effect of e-commerce on financial performance of JCB, during the time period (2019-2023), and will display the results based on the hypotheses of the study.

4.1 Descriptive Statistics

Table 1: Means and standard deviation for independent and dependent variables

Variables	Means	Standard deviation
Return on Assets	0.01	0.00
Dividend Yield	4.72	3.33
Challenges (Obstacles) of Electronic Commerce	3.13	0.33
E-commerce Success Factors	3.06	0.33

Table (1) shows that:

- For dependent variables (Return on Assets) the means were reached (0.01) and standard deviation (0.00).
- For dependent variables (Dividend Yield) the means were reached (4.72) and standard deviation (3.33).
- For independent variables (Challenges (Obstacles) of Electronic Commerce) the means were reached (3.13) and standard deviation (0.33).
- For independent variables (E-commerce Success Factors) the means were reached (3.06) and standard deviation (0.33).

4.2 Hypothesis Testing

4.2.1 Hypothesis (H_{01}): There is no statistically significant impact of e-commerce practices on return on assets of JCB.

To test this hypothesis, and to detect the impact of e-commerce practices on return on assets of JCB, the simple liner Regression was applied for each variable; tables (2) and (3) show that.

Table 2: Result of the simple liner Regression analysis for Challenges (Obstacles) of Electronic Commerce and return on assets for JCB

Independent variable	"t" value	"t" sig	Beta	R	R^2	"F" value	"F" sig
Challenges (Obstacles) of Electronic Commerce	-3.456	0.001	-0.006	0.413	0.171	11.947	0.001

*** Dependent variable: Return on assets**

The results in table (2) show that there is a statistically significant negative impact for Challenges (Obstacles) of Electronic Commerce on return on assets for JCB at significant level ($\alpha \leq 0.05$), where "t" value reached (-3.456) by statistically significant (0.001). (R) Value reached (0.413), (R^2) value reached (0.171) and Beta ratio was (0.006-).

Depending on these results should decrease Obstacles of Electronic Commerce in JCB to increase financial performance, this result agree with Asiabugwa and Munyoki (2012) and Robertson (1997), pointed that there was a strong relationship between the e-commerce and performance.

Table 3: Result of the simple liner Regression analysis for E-commerce Success Factors and return on assets for JCB

Independent variable	"t" value	"t" sig	Beta	R	R^2	"F" value	"F" sig
E-commerce Success Factors	8.789	0.000	0.010	0.756	0.571	77.243	0.000

*** Dependent variable: Return on assets**

The results in table (3) show that there is a statistically significant positive impact for E-commerce Success Factors on return on assets at significant level ($\alpha \leq 0.05$), where "t" value reached (8.789) by statistically significant (0.000). (R) Value reached (0.756), (R^2) value reached (0.571) and Beta was (0.010), therefore Hypothesis (H_{01}) is rejected and accepted (H_{01}) alternative which indicates that there is statistically significant impact of e-commerce practices on return on assets of JCB. Of course, this result agree with Asiabugwa and Munyoki (2012); Terzi (2011); and Ballout (2020) were pointed to the necessary to look after this E-commerce success factors which including efficient system for booking, supply and money transport.

4.2.2 Hypothesis (H02): There is no statistically significant impact of e-commerce practices on dividend yield of JCB.

To test this hypothesis, and to detect the impact of e-commerce practices dividend yield of JCB, the simple liner Regression was applied for each variable; tables (4) and (5) show that.

Table 4: Result of the simple liner Regression analysis for Challenges (Obstacles) of Electronic Commerce and dividend yield for JCB

Independent variable	"t" value	"t" sig	Beta	R	R^2	"F" value	"F" sig
Challenges (Obstacles) of Electronic Commerce	-14.898	0.000	-8.931	0.890	0.793	221.958	0.000

*** Dependent variable: Dividend yield**

The results in table (4) show that there is a statistically significant negative impact for Challenges (Obstacles) of Electronic Commerce on dividend yield at significant level ($\alpha \leq 0.05$), where "t" value reached (14.898-) by statistically significant (0.001). (R) Value reached (0.890), (R^2) value reached (0.793) and Beta ratio (- 8.931).

This finding agree with the World Trade Organization's (WTO) (1998) and (Mitchell, 2009) which indicate that the use of e-commerce including the production, marketing, sale, delivery of commodities and services, should eliminate all limitations in Jordan, because e-commerce has been connected with commercial and services' activities on the Internet worldwide.

Table 5: Result of the simple liner Regression analysis for E-commerce Success Factors and dividend yield for JCB

Independent variable	"t" value	"t" sig	Beta	R	R^2	"F" value	"F" sig
E-commerce Success Factors	4.913	0.000	5.441	0.542	0.294	24.140	0.000

*** Dependent variable: Dividend yield**

The results in table (5) show that there is a statistically significant positive impact for E-commerce Success Factors on dividend yield at significant level ($\alpha \leq 0.05$), where "t" value reached (4.913) by statistically significant (0.000). (R) Value reached (0.542), (R^2) value reached (0.294) and Beta ratio (5.441). Therefore, Hypothesis (H02) is rejected and accepted (H02) alternative which indicates that there is statistically significant impact of e-commerce practices on dividend yield of JCB. Because the JCB websites are an integral part of the marketing efforts of the banks, As Qatawnehs' study (2012); and Ballout (2020) indicate that E-commerce had a statistically significant impact on cost reduction and improvement of the operational performance of Jordanian banks as a result of modern of AIS.

Also, the JCB own the technological infrastructure which is necessary for the practice of e-commerce, such as website and E-application phone, these results agree with Qatawneh's study (2012) which indicates that the application of e-commerce in the AIS for the commercial banks of Jordan has contributed towards the advancement of services delivered to clients. E-commerce has helped in increasing the effectiveness and efficiency of financial performance Jordan's banks.

4.3 Recommendations

- It's necessary to decrease Challenges of Electronic Commerce as much as possible for JCB, this recommend connects with result in table number 2 and 3, also, to focus more to E-commerce success factors by build a commercial modern legislative system in Jordan, this recommend related with the result in table number 3,5.
- Organize training courses continuously for bank's staff for modern e-commerce technics and provide them with suitable systems for e-commercial technics, this recommendation relate with the result in table number 3 and 5 which is one of E-commerce Success Factors.
- It's necessary to improve E- commerce operations and make it easier in banks through improve a government legislative system for e-commerce, using it to make trust for both companies and its customers, this recommend connect with result in table number 2 and 3.
- Hope to do other research on other sectors with different variables and compare the results with each other to help our economy to grow.

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