Information Technology and E-Commerce Reflexes on Total and Agricultural Trade in Egypt

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Abstract

Nowadays, E-commerce has been developing quickly and it brings great impact on economy of all the countries. We insist that the E-commerce development in developing countries and economies in transition will have fine perspectives if the government, corporations and all the related people make great effort together. These papers address the issue of understanding the components of the information economy and E-commerce (profitability of .ese Experiment, this research aimed to identification, entity, characteristics and divisions and to figure out its profitability in Egypt. This research aimed also to pinpoint the measures necessary to incorporate the E-commerce between Egypt and the others commentating countries. We therefore propose a framework consisting of five components. First, concept and entity of E-commerce and its importance in marketing area, secondly, information and communication technology in developing and developed countries, third, the effect of internet on the Egyptian trade, forth, the effect of Internet on the Egypt Agric. Trade

Keywords: (Ec) Electronic commerce, (ICT) Information and Communication Technology, (ITU) international Telecommunication Union, (PIS) Primary Information sector, (SIS) Secondary Information Sector, (ET) Electronic Trade,(BtoB) Business to Business, and (BtoC) Business to consumer.

1. Introduction

Nowadays, E-commerce has been developing quickly and it brings great impact on economy of all the countries, and play important role in foreign agriculture trade in both developed and developing countries. Research Problem The research problem confined to important question; that is how far profitability would Egypt gain from ET, although it regarded as an user rather than producer of information technology. In addition, nowadays, the assessment of ET amount encountered a practical difficulties; this attributable to the absence of local or international system or rules could control such trade.Furthermore, the formal statistical institutions could not monitor the precise or actual amount of ET and the scientific studies and literatures pertaining such trade regarded very few either at local or international scale. It can be said, that the agricultural marketing via ET in Egypt still limited although there are a continuous increase in number of agricultural ET sites in Egypt. Consensus. This research aimed to: Determination of the direct positive impacts of ET on the national income, by supporting and boosting the external trade. Assessment of the effect of transportation means of technology (Internet) on the Egyptian Agric.

Trade. Assessment of Relationship between information technology and GDP in Egypt. This research relied on qualitative and quantitative indications to display the economic impacts of ET and to address the gab between Egypt and the other countries.. The study comprised the data gathered between 1994 and 2009; that would be divided into 2 terms, the first between 1994 and 1998 (the period before establishment of internet handling). The second term was from 1999 to 2009 (period after launching of internet dealing in Egypt) in the aim of determination the impact of information revolution (internet dealing) on the agricultural marketing.

2. Information and Communication Technology in developing and developed countries

2.1. Internet activity worldwide

The equation (1) describes that there is a significant increase of the internet host count from 1981-2009 according to the world wide internet domain survey. By added the factor of time to the previous equation, the results of analysis statistics was as the following:

$$\text{Log } y_t = 0.465 + 5.789 \log x_t$$
$$(0.562) \quad (17.912)^{**} \qquad (1)$$
$$R^2 = 0.925 \qquad F = 320.844^{**}$$

Where:Y_t= Internet host count according to the world internet domain survey,X_t= time (1, 2, 3…)

2.1.1. Internet usage statistics by world Region

Table (1) illustrates the internet usage by region during period 2000-2009, the highest growth percentage of internet usage was achieved by middle East which recorded 267 Percent, while Latin America and Caribbean occupied the second rank with 211% Africa, Asia, Europe, North America, and Australia occupied the rest ranks of growth with percents 198,165,152,105,114, respectively.

World Regions	Population (2009)	Population % of world	Internet usage latest data	Usage Growth 2000-2009	Percentration % population	World users %
Africa	915.210.928	14.1	13,468,600	198	1.5	1.5
Asia	3.667.774.066	56.4	302,257,003	165	8.4	34
Europe	730,991,138	11.4	259,653,144	152	35.5	29.3
Middle East	259,499,779	4	19,370,700	267	7.5	2.3
North America	328,387,059	5.1	221,437,647	105	67.4	25
Latin and Caribbean	546,917,142	8.5	56,224,957	211	10.3	9.3
Australia	33,443,448	0.5	16,269,080	114	48.6	1.9
Total world	**6,499.697.060**	**100**	**888,681,131**	**164**	**13.9**	**100**

Table 1. Average internet usage statistics by world Region, 2000-2009

Source: world internet usage and population statistics

2.1.2. Information and Communication Technology (ICT)

(ICT) play a key role transforming of economic structures. The preceded studies confirmed that the economical impacts of (ICT) occurred on macro. And micro- economics levels. On the macroeconomics level, the studies mentioned that the rapid progress in (ICT) will lead to increase in international Trade cause minimization cost, advertising information exchange exhibitions, information availability in real time, more accessibility to the international market. And on microeconomic level, the studies confirmed that the (ICT) will help small business to access to international market, optimizing the resource allocation and reducing transaction cost. Examining the e-commerce important question is what impact (ICT) and Internet have on the productivity growth. It reduces transaction costs, allocates recourses better, increases economies of scale, improves the competitiveness of business in general, increase efficiency generates important changes in the management and production processes of business.

2.1.3. Distribution of Market Information Technology (IT)

(IT) encompasses every thing that allows us to electronically gather, generate, store, analyze, distribute or otherwise use information. Although the internet has received the most attention, information Technology (IT)involves other computer Technologies such as microchips, monitors, hard- drives and software. It also includes more traditional telecommunication Technologies shushes cell phones or fax machines anything related to the electronic of information. Table (2) represents the Electronic commerce by type Business to Business and Business to consumer by region during the period 2005-2009, data showed that the global of (B to B) to increases with growth Percentage reached by 257.9% annually. The average of (B to B) reached 609.25Millar dollars. While (B to C) the average 60.5Millar dollars and growth Percentage reaches by 169.1% annually. And the average B to B/ Total 88.75%.

E- commerce	2000	2003	2006	2009	Average	Growth%
B To B	43	251	843	1300	609.25	257.9
B to C	8	33	76	125	60.5	169.1
Total	51	284	919	1425	669.75	245.2
% B to B/total	84	88	92	91	88.75	

Table 2. Electronic commerce by type (BtoB) from 1998 to 2009 (Millar dollars)

Source: Computed from the data cited from world Resource

2.2. Technology gap between developing and developed countries

When compares between developing and developed countries Shown that the Digital divide (technology gab) in 2009:

a. Internet: developing countries 34% while developed countries 66%.
b. Computer: developing countries (27%) while developed countries (73%).
c. Mobile Phone: developing countries 46% while developed countries (54%).

d. Land line: developing countries (45%) while developed countries (55%).

But population in developing countries 81% and 19% in developed countries.

2.3. Egypt Internet usage

Egypt Internet usage and population compared with the Rest of the Africa in 2009. The Egypt has 5 million users for the international information net. The Percent of internet user with represent as the indirect indicator fore – commerce in Egypt is about 21.3%. But this Percent in Rest of Africa 78.7%. The population in Egypt about 8.5% in Africa. Some studies mentioned that may be Egypt become the biggest African countries for the number of internet users even more than south Africa, which is the highest percent in Africa.

Table (3) illustrates Internet users in Egypt during the period 1998-2008. the number of Internet users increased from about 36.4 (1000 persons) in 1998 to 1.355.0 (1000 persons) in year 2008. And the index number increased from 100% in year 1998 to 3722.527. % in years 2008.

Year	Egypt (1000 persons)	Index number
1998	36.4	100
1999	51.8	142.3077
2000	72.2	198.3516
2001	92.5	254.1209
2002	282.3	775.5495
2003	437.1	1200.824
2004	591.9	1626.099
2005	782.0	2148.352
2006	996.6	2737.912
2007	1.354.8	3721.978
2008	1.355.0	3722.527

Table 3. Number of Internet users in Egypt, 1998-2008.

Source: world internet usage and population statistics. 2009.

3. The effect of transportation means of technology (internet) on the Egyptian trade

3.1. The effect of transportation means of technology (internet) on the Egyptian export

It illustrates the table export in Egypt before and after using internet, the results of the statistical analysis that there is a significant increase in the table exports during the period after the internet comparing to the period before. The study used the dummy variable to measure the effect of information revolution in Egypt, the study divided the period (1992-2009). The first period was from (1992-1998) and represented the period before the revolution of information in Egypt (inter-

net). The second period was after that, from (1999-2009) this dummy variable represented as Dt. Average Total exports before using Internet about 11438.4 (million LE) .(S.T DEV) about 1081.042 and after using internet (47554.82 million LE) .(S.T DEV) about 31764.58

By added the factor of time to the previous equation, the results of analysis statistics was as the following:

$$Et = 11438.414 + 36116.404\ Dt$$
$$(1.205) \quad (2.974)^{**} \qquad (2)$$
$$R^2 = 0.356 \quad F = 8.842^{**}$$

Where: Et = Total export in Egypt during the period (1997-2009), Dt = Dummy variable equal (1) after using internet, equal (0) before using internet.

3.2. The effect of transportation means of technology (internet) on the Egyptian imports

It illustrates the total Imports in Egypt before and after using internet, the results of the statistical analysis that there is significant increase in the total imports during the period after the internet comparing to the period before. (Average) total imports in Egypt before using internet about 38955.4 million LE.(S.T DEV) about 10448.87 and after using internet about 113052.4 million LE.(S.T DEV) about 74178.37 The study used the dummy variable to measure the effect of information revolution in Egypt. By added the factor of time to the previous equation, the results of analysis statistics was the following:

$$It = 38955.386 + 74096.992\ DT$$
$$(1.747) \quad (2.598)^{*} \qquad (3)$$
$$R^2 = 0.297 \quad F = 6.749^{*}$$

Where: It = Total imports in Egypt during the period (1999-2009), DT: Dummy variable equal (0) for the period from (1992-1998) and (1) for the period from (1999-2009)

Years	Total Export	Total Import	Trade Balance	Agriculture Export	Agriculture Imports	Agriculture Trade balance
1992	10171.2	27656.1	-17485	1262	7900	-6638
1993	10464.5	27550.4	-17086	1115	7500	-6385
1994	11757.5	32460.6	-20703	1740	7200	-5460
1995	11703.8	39890.9	-28187	1641	10800	-9159-
1996	12006.1	44217.9	-32212	1689	12700	-11011
1997	13281.0	44885.7	-31605	1488	13400	-11912
1998	10684.8	56026	-45341	1760	15900	-14140
Average	**11438.4**	**38955.4**	**-275170**	**1527.86**	**10771.429**	**-9243.57**

Years	Total Export	Total Import	Trade Balance	Agriculture Export	Agriculture Imports	Agriculture Trade balance
1999	12052	54399	-42347	1804	12400	-10596
2000	16351	48645	-32294	2100	12700	-10600
2001	16491	50660	-34169	2400	7700	-5300
2002	21144	56480	-35336	3300	9700	-6400
2003	36712	65083	-28271	4600	10100	-5500
2004	38653	57408	-18755	5284	9900	-4615
2005	44083	121905	-77822	5995	10010	-4015
2006	67379	152504	-85125	4748	11746	-6998
2007	79955	163475	-83520	7403	14659	-7256
2008	97656	224569	-126913	8980	17881	-8901
2009	92627	248448	-155821	11571	19236	-7665
Average	**47554.82**	**113052.4**	**-65488.5**	**5289.545**	**12366.55**	**-7076.91**

Table 4. Total and Agricultural export and total and imports Agricultural imports Agricultural in Egypt Before and after using internet. (Million LE)

Source: www.Egypt.gov.eg

3.3. Relationship between total export and internet in Egypt

The equation (4) describes that there is significant increase relationship between total export in Egypt and internet user, the result of analysis statistics was as the following:

$$Et = 12426.84 + 471.334\eta 1$$
$$(5.344)^{***} \qquad (7.467)^{***} \qquad (4)$$
$$R^2 = 0.918 \qquad F = 55.75$$

Where: Et: Total export in Egypt., η1: Internet users in Egypt., T: Time (1, 2, 3 … 14)

4. The effect of transport in means of technology (Internet) on the Egyptian Agric. trade

4.1. The effect of transport in means of technology (Internet) on the Egyptian Agric. Exports

It illustrates the total Agric. Export in Egypt before and after using internet, the results of the statistical analysis that there is significant increase in the Agric. Exports during the period after the internet comparing to the period before. Average Agric. Exports in Egypt before using Internet about 1527.86 Million (LE) .(S.T DEV) about 251.79, and after using internet about 5289.545 Million (LE). .(S.T DEV) about 3056.783 The study used the dummy variable to measure the effect of information revolution in Egypt, the results of analysis statistics was the following:

E^{At}=1527.857+ 2112.514 Dt

(3.402)** (3.326)** (5)

R-2=0.48 F=11.061**

Where:E^{AT}: Agric. Export in Egypt, Dt: Dummy variable equal (0) for the Period from 1992-1998 and (1) for the Period from 1999-2009.

4.2. the effect of transport in means of technology (Internet) on the Egyptian Agric. Imports

The equation (6) illustrates the total Agric. Imports in Egypt before and after using internet, the results of the statistical analysis that there is non significant decrease in the Agric. Exports during the period after the internet comparing to the period before. Average Agric. imparts in Egypt 10771.429 Million (LE) .(S.T DEV)3382.166, and After using internet about 12366.55 Million (LE) .(S.T DEV)3591.836. The study used the dummy variable to measure the effect of information revolution in Egypt, the results of analysis statistics was the following.

y= 10771.429 – 1595.117 Dt

(8.108) (0.939) (6)

R^2= 0.052 F= 0.881

Where: IAt= Agric. Imports in Egypt, Dt= Dummy variable equal (0) for the period from 1992-1998 and (1) far the period from 1999-2009

5. Relationship between information technology and GDP,ICT in Egypt

The equation (7) describes that there is significant increase relationship between Total Agricultural Trade and both (GDP) Gross domestic product in Egypt,(ICT) information communication technology in Egypt, the results of analysis statistics was as the following:

Y_{TAT}= 3.412 + 0.315 GDP +0.731 ICT

(3.91)** (6.151)** (4.735)** (7)

R^2 = 0.723 F 126.3**

Where:Y_{TAT}: Total Agricultural Trade,GDP: Gross domestic product, ICT: information communication technology.

The equation (8) describes that there is significant increase relationship between Total Agricultural Trade, GDP, Internet host in Egypt. Internet user in Egypt Population ,the results of analysis statistics was as the following:

Y_{TAT} = -2.634 + 0.326 GDP +0.029η1 +0.0739 η2+ 0.0234P

(-5.091)** (4.932)** (1.092) (3.947)** (0.413) (8)

R^2=0.691 F=103.2**

Where:Y_{TAT}: Total Agricultural Trade .GDP: Agric growth domestic product in Egypt.η1: Internet user in Egypt. η2: Internet host in Egypt and P=Population describes that there is significant increase relationship between Total Agricultural Trade, GDP, Internet user in Egypt and Internet host in Egypt. Population The equation describes that there is significant increase relationship between Total Agricultural Trade, gross domestic product GDP and internet user, n2: Internet host, Population in Egypt.:

6. Conclusion

The result of study shown that, there is a significant impact for information technology also E-Commerce applied on foreign trade sector generally, in addition to total trade balance export, import was also positive impact on Agriculture import, export Egyptian Agriculture trade balance. Through the study of the information economy and E-commerce, we can make conclusion as followings:

1. The main gab between developed countries and development of E-commerce.
2. The number of internet user around the world has been steadily growing and this growth has provided the impetus and the opportunities for global and regional E-commerce.
3. The main gab between developed countries and developing countries in information and communication technology (IT).
4. About 2.3% only Africa internet usage compared the rest of the world in 2009. While 36.5% population in Asia usage internet.
5. Egypt becomes the biggest African countries for the number of internet user even more than South Africa. Which is the highest percent in Africa?
6. The results of the statistical analysis that there is a significant increase in the total exports and imports in Egypt and during there period after the internet comparing to the before.
7. The results of the statistical analysis that there is a significant increase in the agric. Exports and agric. Imports in Egypt during the period and after the internet comparing to the before.

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