Smart Structures and Systems, *Vol. 30, No. 5 (2022) 545-556*
https://doi.org/10.12989/sss.2022.30.5.545

Theoretical analysis of e-commerce in global economic market in terms of benefits and disadvantageous

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(*Received September 10, 2020, Revised May 10, 2022, Accepted October 12, 2022*)

Abstract. Through the examination of literatures, electronic commerce is a subject which is accepted in enterprises to define e-commerce adoption, trends, and issues that are assisting and obstructing its efficacy. E-commerce offers numerous advantages to consumer satisfaction in any place and helps the company to get a competitive benefit over its competitors. The Internet has expanded the scope of business. Many business information is available by the global network that supports information gathering between organizations, businesses and their clients, while various divisions of a business is increasing at an exponential rate. Meanwhile, there are a few barriers to proper e-commerce usage and adoption, such as reliable internet connections, poor e-commerce supporting infrastructures, logistics systems presenting socio-regulatory and poor transportation barriers and demonstrating the significant improvement of e-commerce reliable and affordable Internet provisions, i.e., Internet cost, intensity, and reasonable level of e-readiness. The operational and strategic significance of information-based virtual value chains for all organizations cannot be emphasized. As a consequence, this study confirms worldwide market elements of e-commerce, such as its issues, benefits, relevance, scope, facilitators and projects prospective obstacles in a developing economy.

Keywords: benefits; disadvantageous; e-commerce; economic; globe market; theoretical analysis

1. Introduction

E-commerce is a novel method of doing business. Despite its novelty, it could highly influence the social activity and economic, beside its effects on finance, communications, and retail commerce (Toghroli *et al*. 2014, Safa *et al*. 2016, Sedghi *et al*. 2018, Katebi *et al*. 2019). It has great capacity governance, education, and health (about 20 per cent of GDP). The effective behavioral might well be unclearly connected, but could be pervasive and influence the routine business activities than other effects i.e., customized products (Mohammadhassani *et al*. 2013a, Toghroli *et al*. 2016, Chahnasir *et al*. 2018, Safa *et al*. 2020, Zheng *et al*. 2022). Electronic commerce has been evolved due to the legislative change mix and technology innovation. Despite the appearing of Internet's precursor in the late 1960s, electronic commerce has been introduced in 1990s with beginning of the World Wide Web, and the liberalization of the telecommunications section and innovations that greatly improved the capacity of communications (Sinaei *et al*. 2011, Shahabi *et al*. 2016a, Khorramian *et al*. 2017, Deng and Zhao 2022). Therefore, both buyers and sellers have seen lower obstacles to participate in E-commerce. Earlier types of e-commerce were mostly costly, sophisticated, and only available to big corporations. Anyone can compete with a million people and win a few thousand dollars (OECD 1999). E-commerce has received a lot of attention in academic and practitioner areas. Existing e-commerce research has mostly zoomed on wealthy economies (Bajaj and Leonard 2004, Pani and Agrahari 2004, Arabnejad Khanouki *et al*. 2010a, Daie *et al*. 2011, Sinaei *et al*. 2012, Davoodnabi *et al*. 2021). Nevertheless, in emerging economies, there is a rising scholarly interest in e-commerce (DEs). These studies in DEs are the combination of experimental and non-

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ISSN: 1738-1584 (Print), 1738-1991 (Online)

experimental research by use of assumptions from a variety of disciplines, including management, social sciences and information systems (IS) (Khorramian *et al*. 2015, Tahmasbi *et al*. 2016, Ismail *et al*. 2018, Nasrollahi *et al*. 2018, Wei *et al*. 2018). A number of approaches were employed as well (Balaraman *et al*. 2020, Jafar-Nowdeh *et al*. 2020, Naderipour *et al*. 2021, Velu *et al*. 2021). Conceptual frameworks that analyze the relative potential of e-commerce in DEs and the mechanisms to reach that potential are among the core research contributions (Ziaei-Nia *et al*. 2018, Trung *et al*. 2019, Afshar *et al*. 2020). As a result, this chapter analyze the prior research on e-commerce in DEs, as well as an examination of the theories that underpin e-commerce in DEs study. The goal is to define present knowledge gaps related to the implementation of these theories and utilize those gaps to create a research agenda (Ngai *et al*. 2002, Nosrati *et al*. 2018, Milovancevic *et al*. 2019, Sajedi and Shariati 2019). Nonetheless, the constraints of that previous research in terms of context, scope, and substance are inspired this study. To begin with, Ngai and Wat's has concentrated on e-commerce in developed economies and did not specifically address e-commerce in developing nations (Ngai and Wat 2002, Hamidian *et al*. 2011, Toghroli *et al*. 2017, Li *et al*. 2019, Hosseini and Toghroli 2021). While there are certain commonalities and difficulties, e-commerce in DEs has its own unique features and obstacles that should be investigated (Molla and Licker 2005a, Toghroli *et al*. 2018, Toghroli *et al*. 2020, Mehrabi *et al*. 2021). Second, the previous study looked at e-commerce studies from 1993 to 1999 in terms of coverage. This time span encompasses the infancy of e-commerce as a phenomenon, even in wealthy countries (Petrazzini and Kibati 1999, Rodriguez and Wilson 2000, Shah *et al*. 2016c, Shahabi *et al*. 2016b, Davoodnabi *et al*. 2019, Nouri *et al*. 2021). Evidence shows that after the year 2000, the dissemination and usage of ICTs (information and communication technologies), such as the Internet was raised significantly in DEs (Union 2006, Arabnejad Khanouki *et al*. 2010b, Jalali *et al*. 2012, Khorami *et al*. 2017a, b, Zandi *et al*. 2018). In case of substance, Ngai and Wat has concentrated on a quantitative examination of topics addressed by e-commerce researchers without providing a full description of the conceptual techniques and theoretical frameworks employed (Ngai and Wat 2002). As a result, there is a knowledge gap in assessing literature on e-commerce in DEs by academics and practitioners (Shariati *et al*. 2012a, 2014, Mohammadhassani *et al*. 2014b, Paknahad *et al*. 2018). The more enterprises and governments in DEs strive to embrace and institutionalize this phenomena, the more need for such a review is seen since it might evaluate the challenges, theoretical and conceptual solutions, and methodologies utilized to achieve those answers (Shariati *et al*. 2012b, Hosseinpour *et al*. 2018, Naghipour *et al*. 2020a). Moreover, the dynamic character of the phenomenon highlights the necessity for practitioners and academics to continuously examine and redefine the emphasis, particularly in the DEs.

1.1 Classification framework

The phrase "e-commerce" has been imagined differently that it is impossible to use it in a neutral sense though the "e" and "commerce" incorporated into it (Ngai and Wat 2002). Researchers have been looking at a variety of difficulties guided by their understanding of e-commerce (Bauer and Glasson 1999). Likewise, Benbasat, Ives, Piccoli, and Weber selected 140 study topics from the IS World community in early 2000, which were classified into nine developing e-commerce study fields encompassing social, individual, technological, organizational, and economic challenges (Benbasat *et al*. 2000). It is critical to establish an analytical framework and solid classificatory that aids in "sense creation and subsequent analysis" for comprehend the progress and directing of E-commerce in Des (Zwass 1999). In this section, we describe E-commerce as the use of telecommunications networks to establish commercial connections, share business information, and perform business transactions (Vladimir 1996). This comprises business transactions involving both organizations and people that are facilitated by technology (Akel and Phillips 2001, Safa *et al*. 2019, Suhatril *et al*. 2019, Jahandari *et al*. 2021). Moving forward from this description, the following are some study on e-commerce in Des, in which many are characterized by prognoses of e-commerce's potential in DEs and analyses of the restrictions that DEs must overcome in order to fulfill that promise (Khanouki *et al*. 2016, Shah *et al*. 2016a, b, Naghipour *et al*. 2020b). As a result, it was suggested e-promise commerce's and restrictions is one of the most lasting subjects in DEs research. The acceptance and dissemination of e-commerce is a second recurring topic (Shah *et al*. 2015, Chen *et al*. 2019, Razavian *et al*. 2020). Within this area, researchers have looked into a variety of challenges encompassing the five domains of adoption as environmental, contextual organizational, technical, and managerial, as well as their interactions (Xu *et al*. 2004, Molla and Licker 2005b). The success of E-commerce adoption is determined by a number of factors, including customer e-readiness, and strategy, government policymakers and assistance from e-commerce developers (Ngai and Wat 2002). As a result, a third persistent subject of e-commerce research in DEs might be called support and implementation.

1.2 E-commerce and economic efficiency

Many of these applications are anticipated to be widely adopted with a substantial economic effects because of their simplicity (Mohammadhassani *et al*. 2013b, 2014a, Heydari and Shariati 2018, Luo *et al*. 2019, Xie *et al*. 2019). Without considering that some Web sites cost high, however, simpler sites might be established and built for tens of thousands of dollars. Lowering inventory costs requires implementing a "just-in-time" inventory system and improving the ability to monitor demand more precisely. Both of these objectives may be met by introducing E-commerce, which strengthens company relationships. Improvements in demand forecasting and stock replenishment are estimated to result in a $250-350 billion reduction in overall inventories, or

Fig. 1 The role of E-commerce in globe

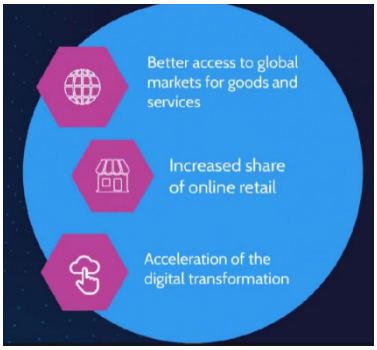

Fig. 2 Acceleration of online marketing in globe economy

a 20% to 25% reduction in current US inventory levels. While this measurement is likely high, pilot tests on the US vehicle industry have shown savings of up to 20%, and even a 5% decrease would have a major economic impact. E-commerce dealers considerably improve the performance of the sales process by posting the relevant information online in an easily accessible way. Then, even when customers conduct a transaction in the conventional manner (offline) in a showroom or over the phone, they typically know exactly what product they intend and prepared to purchase. This could increase salespeople's productivity by a factor of 10 (OECD 1999). Fig. 1 shows the role of E-commerce in globe. Fig. 2 indicates acceleration of online marketing in globe economy.

2. The infrastructure for e-commerce

E-commerce, like conventional commerce, needs a vast infrastructure comprised of middlemen that enable sellers to conduct business with purchasers. As in 1800 in the United States, the true victors might not be the miners themselves, but the vendors who supplied them with clothing, food, and pickaxes. In reality, spending on Internet-related infrastructure are expected to surpass $40 billion in 1995-97, greatly exceeding the business-to-consumer part and mostly estimating of present business-to-business activity.

The companies that provide the infrastructure for e-commerce were among the first to take benefits of e-commerce. Cisco router sales and Dell personal computer (PC) sales are two notable examples. While their experience couldn't be generalized, their development has been

Fig. 3 The effect of E commerce in globe market and regional trends

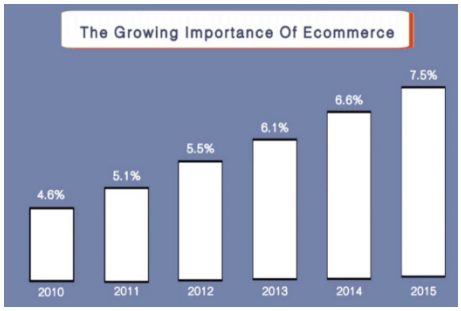

Fig. 4 Increasing ratio of E-commerce between 2010-2015

remarkable: Dell boosted its online sales from $1 million per day to $5 million per day in less than a year, and anticipates online sales to soon account for half of its entire sales (Margherio *et al*. 1998). As Internet technology pushes convergence across formerly distinct disciplines (i.e., communications, broadcasting, and computers), it becomes harder to define what forms the infrastructure enabling e-commerce. Hardware is expected to be the most profitable of the four sectors right now with sales ranging from $10 billion to $30 billion. Nevertheless, in most situations, estimates of hardware expenditures include all Internet-related technology, not simply that used for electronic commerce (Alesina and Perotti 1997). Fig. 3 shows the effect of e-commerce in globe market and regional trends and Fig. 4 shows increasing ratio of E-commerce between 2010-2015.

2.1 Environmental and cultural frameworks

A few environmental or external (to the organization) impacts have been reported here, comprising of the institutional or organizational readiness, pressure from social referents and competitors, such as e-commerce pessimists and optimists, industry, sector, and/or government policies, and related trade regulations and policies with regard to international trade.

Singh and Gilchrist provide a three-layer framework of e-commerce issues in both developing and developed nations, including of infrastructure availability, commercial service availability and trust (Singh and Gilchrist 2002). To solve these difficulties, governments of DEs must collaborate with enterprises in the nation. In terms of infrastructure, there is a need for main telecommunications services, as well as increased Internet availability and cost. Commercial services necessitate the growth of infrastructure and logistics, the streamlining of export

proses, and the development of the necessary human resources. Property rights, trust, and trade rules and agreements must be formed in order to fulfill international standards while also complementing domestic interests and promoting the export services and market (Singh and Gilchrist 2002). In a methodology they devised to examine e-commerce in Sub-Saharan Africa, Mbarika and Okoli address similar challenges (Vladimir 1996, Okoli and Mbarika 2003). In comparison to other frameworks, the framework makes a significant contribution by taking into account political and cultural issues that affect e-commerce adoption in Sub-Saharan Africa, such as the underdeveloped state of electronic payment systems and the presence of corruption and nepotism. As previously stated, these difficulties create a variety of hurdles in Sub-Saharan African nations' adoption of e-commerce.

2.2 Interactionism frameworks

Interactionism frameworks are conceptual and theoretical frameworks that take into account all of the many viewpoints or imperatives when deciding the characteristics of e-commerce usages (Molla and Licker 2005b), and thus looks for explaining the interrelationships between internal organizational effects and external contextual impacts as well as varieties in performance between firms performances in similar contexts (Tornatzky *et al*. 1990, Montealegre 1996, Jarvenpaa and Leidner 1998). According to the paradigm, the three contexts of technological, organizational, and environmental settings define the distinguishing elements of technological innovation adoption. External and internal systems that are important to the business operations of an organization and value creation are referred to as the technological context. This comprises those that are available to the firm internally via ownership and those that are offered to the market externally through leasing, purchase, or acquisition. Organizational context correlates to comparable characteristics as discussed under the organizational imperative, such as the complexity and formalization of management structure, the human resources' availability, and the firm's internal spare resources. The environmental

Table 1 E-commerce impact on various firms (Molla and Heeks 2007)

Characteristics	E-Commerce Users (n = 92)		E-Commerce Non-Users (n = 58)	
	No.	%	No.	%
Respondent's job title				
Managing director or CEO or general manager	66	72%	30	52%
Finance director	10	11%	12	21%
IT director	9	10%	9	16%
E-commerce director	4	4%	2	3%
Marketing director	3	3%	1	2%
Not specified	--	--	4	7%
Business size				
Small and medium	16	17%	22	38
Large	76	83%	36	62
Sector				
Service (financial, consulting, media, marketing & tourism)	36	39%	13	22%
Manufacturing	20	22%	19	33%
Primary (agriculture, construction and mining)	16	17%	9	16%
Trade (wholesale and retail) and transport	11	12%	10	17%
ICT (computers and communications)	9	10%	7	12%
Number of Years in business				
1-10	16	17%	8	14%
>10	76	83%	50	86%
E-commerce capability				
No e-commerce	--	--	24	41%
Connected e-commerce	--	--	29	50%
Informational e-commerce	19	21%	3	5%
Interactive e-commerce	43	47%	2	3%
Transactional e-commerce	24	26%	--	--
Integrated e-commerce	6	7%	--	--

Table 2 Online share of totals and cost savings (Cardona *et al*. 2015)

	Online % total hh cons	Online % total EU imports	Online trade costsavings	Cost savings, total basis	Cost savings, import basis
	(1)	(2)	(3)	(4)	(5)
Wearing apparel	0.152	0.161	-0.537	-0.081	-0.087
Leather products	0.123	0.078	-0.505	-0.062	-0.039
Paper & publishing	0.379	0.133	-0.619	-0.234	-0.082
Chemicals	0.074	0.008	-0.578	-0.043	-0.004
Electronic equipment	0.670	0.078	-0.477	-0.319	-0.037
Other consumergoods	0.123	0.138	-0.532	-0.066	-0.073

**Source*: Civic Consulting consumer survey and JRC/IPTS own calculations (Cardona *et al*. 2015)

context, like the environmental imperative relates to the external environment in which the organization operates. Pressure from rivals and social referents, as well as the readiness and accessibility of resources given by institutional foundations such as economic, regulations and technical infrastructure are all influenced from this setting. Table 1 indicates E-commerce impact on various firms and Table 2 is online share of totals and cost savings. The interdependence of these circumstances determines the variables that distinguish adopters from non-adopters (Tornatzky *et al*. 1990).

3. Theoretical framework

3.1 Hypothesis of firm heterogeneity

In classical and conventional economics, "perfect competition," in which all enterprises sell an identity product is viewed as universal, whereas brand difference (i.e., monopoly) is treated as a separate instance. Monopoly occurs just once in the 200 years after Adam Smith, when laissez-faire capitalism was at its peak. However, as capitalism reached the monopoly stage, the traditional economic models were unable to explain the new transformation, and the growth of monopoly caught economists' attention. Instead of being a distinct example of homogeneous competition, monopolistic competition has become prevalent in the market economy in the Internet era. A significant characteristic of market economy[1] pointed out that there are various sorts of products that have been overlooked in neo-classical paradigms. In monopolistic competition theory, rivalry equals homogeneity, whereas monopoly equals heterogeneity. Monopolistic competition is thus a type of heterogeneous competition (Cardona *et al*. 2015).

3.2 Support and Implementation

After achieving the conception of the different contextual challenges (firms in DEs face) in their attempt to use e-commerce and gain its advantageous, the goal is moving toward strategy, and reviewing theoretical frameworks that provide strategic guidance to DE firms on explaining the benefits of e-commerce amidst their different contextual impacts. There has been very less work on the potential advantages, restrictions, and adoption/diffusion of e-commerce in making nations compared to writing on the positive advantages, limits, and adoption/diffusion of e-commerce in developed countries. In terms of sheer numbers, the literature on strategy at the business level accounts for around 14% of the total articles assessed. Despite its insufficiency, it is sufficient to constitute a critical mass. Nonetheless, a closer examination of the literature, both empirical and conceptual reveals that it is more focused on defining criteria that differentiate early adopters from those who do not (Chen *et al*. 2004, Li and Chang 2004, Wresch 2004, Gunasekaran and Ngai 2005). The research looked at how network application solutions comprising of supply chain management, customer relationship management, and corporate resource planning were adopted and used. Despite the fact that the established framework became more oriented toward e-business as a result of this, the case study analysis yielded several essential insights that may be applied to the general paradigm of e-commerce in DEs. According to the survey, DE companies who adopt business models from developed nations must adjust such concepts to their local conditions. Strategic alliance with foreign partners is taken as an essential model for the efficient use of e-business strategies while being important for them to make in-house information systems possibilities prior starting e-business programs (Li and Chang 2004).

3.3 The macro-economic model

The next step is to simulate the impact of cost savings in the e-commerce distribution business. Two methods are provided as stated in the introduction. The first assumes lower trading costs for consumer products inside the EU as mentioned in the preceding section. The second model is to regard our econometric estimates as cost reductions that apply to both domestic and international commerce, and as indicators of distribution sector productivity increases. This indicates that under the second strategy, cross-border cost savings are absorbed into a broader distribution cost reduction. Working with a model in which consumer

[1] As Joseph Stiglitz, a proponent of new Keynesianism and inventor of neoChamberlin models

demand is channeled by the distribution sector is required for the second method. We begin with a typical modeling framework (GTAP model) (Hertel 1997) that incorporates monopolistic competition on the basis of (Francois *et al*. 2005). The GTAP database, version [9] is incorporated in this model. Sectors are related by intermediate input coefficients (derived from national social accounts data) and main factor market competitiveness. In addition to the traditional static, ideal competition, the model adds imperfect competition. By employing the Armington assumption, imperfect competition is created by assuming monopolistic competition. ECORYS provided econometrically based substitution elasticities for products, whereas Francois and Hoekman provided elasticities for services (Francois and Hoekman 2010). CGE models are often based on "margined" social accounting data, which means that margin activities are isolated from demand for commodities and modeled as a separate collection of activities (Reinert and Roland-Holst 1997). This contains models from the GTAP family. By incorporating purchased commodities and related service activities in the final stage of consumption, a basic GTAP framework was developed for our objectives. CGE models are often created using "margined" social accounting data. Margin activities are therefore isolated from products demand (Reinert and Roland-Holst 1997) and treated as a distinct activity. We adapt the fundamental GTAP framework for our objectives here by including purchased items and related service activities in the final stage of consumption. This creates a direct avenue for cost savings from e-commerce technology to be translated into lower costs per items for customers through adjustments in the pricing of margin services. Instead, efficiency improvements are estimated in the commerce and distribution sector, in which these services are linked with final products supply in the second specification. By country and sector, the GTAP database includes internally consistent data on consumption, production, and international commerce. The Central Product Classification is used to classify the agricultural and food processing industries (CPC). The influence of e-commerce on various businesses is seen in Table 1. A model-to-NACE sector concordance in the annex is provided. Margin services, as previously stated, contribute for a sizable portion of final consumer products expenses. Table 2 shows the percentage of totals that are generated online as well as the cost savings. The "marginalized" household demand is shown in the first column. Services make for 60.8 percent of total household expenditures, while products account for 39.2%. According to this calculation, goods purchases, including margin services account for around 56.5% of household purchases, while services account for 43.5%.

3.4 The economic impact of e-commerce retail technology

There are two parts to the simulation scenario. In the baseline scenario, we first define a trade cost shock. The second part gave an experimental assessment of the reducing costs in cross border trade caused by a shift in customer behavior toward a new retail model, online e-commerce while including this decrease in trade costs into the CGE model and use it to commodities imported by the EU's e-commerce retail channel. For all commodities, as well as physical and online sales, the model has a single distribution sector. The decrease in trade expenses, or the cost of imported goods, puts pressure on the distribution sector's margins. The second column displays the percentage of total imports that came from the internet. Column three estimates trade cost savings per class by multiplying the difference in the distance coefficient between the offline and online gravity equations (a quantity shock) by the price elasticities of imports for each product category to get a price shock. Columns four and five determine cost reductions for overall consumption and imported consumption, respectively. These savings are used to CGE model breakdown of household consumption. Second, we consider the trade cost estimation to be suggestive of a broader decrease in distribution costs, and hence map them to the distribution sector, which supplies the imported and local commodities. We are effectively dealing with a reduced form with decreases in average distribution costs, because our data prevents us from modeling online and offline sales to customers. In other words, the predicted average distribution/trade expenses are fully passed through to domestic markets. This is the result of a retail sector efficiency that has been modelled. Under the second specification, the projected total effect of the cross-border trade cost shock is just part of the entire effect. It does give a valuable dissection of our overall estimated impacts' trade-related component. The entire retail technology shock lowers retail margins and output (fewer resources are required to provide the same number of items to customers), but increases overall efficiency. Retail price margins are shrinking, which benefits other industries who sell their products through the retail channel. Thus, many other industries' value-added and output rise. The combined net effect of retail output reductions and output increases in other sectors is an experimental question that requires more study and datasets. It's worth noting that the simulation findings are based on a static comparison so don't account for the dynamic expenses of switching between offline and online "states of the world", The retail sector's resources (labor and money) must be diverted to other purposes. This move might take some time and result in some efficiency losses in the meanwhile. Nonetheless, one may argue that the retail sector's transition costs are rather low. Except for Slovakia, in which the trade cost impact is slightly negative, the trade cost effect is normally positive ranging from 0.1 to 1.0 percent. In many nations, the retail efficiency impact is even stronger since it benefits not only customers but also all sectors of the economy. E-commerce raises household usages by 1.07 percent in the EU27 with 0.27 percent coming from the trade cost impact and the rest from distribution efficiency benefits. In most nations, the decrease in trade costs caused by the move to e-commerce has a favorable impact. The growth in real earnings and household spending, which boosts demand for retail services is mostly to blame. The retail margin, on the other hand, declines, and the efficiency shock is significantly

Fig. 5 Growing of Internet host computers and major e-commerce improvement

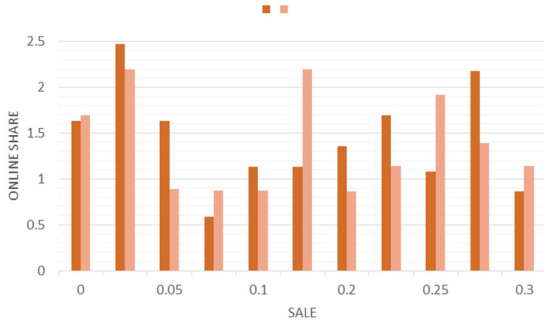

Fig. 6 Impact of e-commerce on a product basis, 2010-15, estimates of online shares (%)

Fig. 7 World-wide memory chip and semiconductor price indices

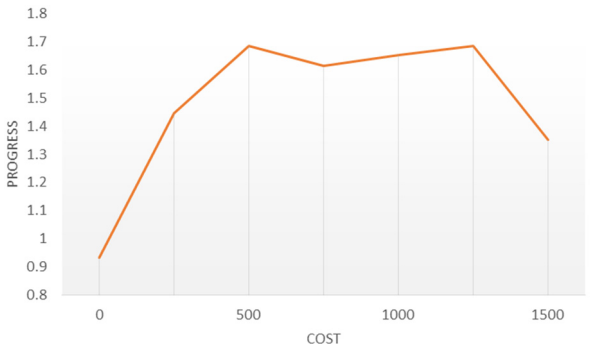

Fig. 8 World mainframes and personal computers price indices

negative across the board and dominates the picture. The effect of the trade cost shock varies by country with some nations enjoying a minor positive benefit and others experiencing a negative effect.

3.5 Electronic commerce and the skills mix

Technology, commerce, and organizational change both generate and destroy jobs. Changes in the skill makeup of employment and the contribution of various occupational categories to job development are also influenced by these dynamics (OECD 1999). There are certain vocations and underlying skills in e- commerce firms that are offered as examples. Apart from the short-term demands for people to execute Internet/intranet maintenance and development to support e-commerce transactions and apps, there is a longer-term structural shift in the capabilities necessary to conduct economic operations online. Fig. 5 indicates Growth in Internet host computers and major e-commerce improvement. Fig. 6 shows Impact of e-commerce on a product basis estimate of online shares in percentages, 2010-15.

3.6 Internet and e-commerce growth are driving demand for IT professionals

Increased integration of Internet front-end applications with business processes, back-end databases and applications is becoming more important as Internet usage transitions to a "transaction" paradigm (OECD 1999). Software would gradually be leveraged to produce corporate value as electronic commerce spreads, resulting in re-engineering of company processes and shifts in competitive paradigms. As a result, there will be a strong need for IT experts in the future. This is anticipated to exacerbate a "critical shortage" of IT employees, according to reports that is not peculiar in US.

3.7 Benefits and social impacts

The fast spread of electronic commerce and its increasing prominence in economic life has the potential to have a significant impact on social connections on a variety of levels. Significant societal gains, like every other technology-based change would be counterbalanced by less favorable consequences caused by externalities and diverse spillover effects. Because of the rapid pace of the information technology revolution, determining the complete spectrum of societal repercussions and their net influence on the basis of a single moment in time is impossible. However, based on current trends, policymakers seem to be quite interested in the societal effects of internet commerce in a number of sectors. Some e-commerce systems, for example, are gaining traction as viable tools for improving social infrastructure. Furthermore, e-commerce, like other areas of information technology has the potential to have a broader impact on both individuals and society. Fig. 7 shows World-wide memory chip and semiconductor price indices.

3.7.1 Health

In 1990, global private and public spending on health care were nearly $1 700 billion, or roughly 8% of total global output. Due to government reductions, this spending is under growing strain. Populations, on the other hand, are

seeking a greater quality and degree of health care. It is commonly known that a population's overall health is associated to its economic well-being. Because healthier employees are more productive, improved health conditions and access to health information contribute greatly to economic growth. Health education programs assist individuals live healthier by expanding access and utilization of relevant information. When efforts to promote effective and accessible health care are paired with policies to increase income, a virtuous cycle is generated in which economic growth and health gains support one other (Preston 1994). This virtuous loop can be aided by information technology and e- commerce health-care applications. They could help the health-care system save money while also expanding its reach (Look 1998, Picot 1998). Information technology may help to extend services and service delivery alternatives while also reducing costs in the management and administration of health care, resulting in greater economic success. This is especially true if these new and enhanced services are made available to the disadvantaged segments of society, who stand to benefit the most from improved health. Fig. 8 shows World mainframes and personal computers price indices.

4. Conclusions

Because of the rapid pace at which information technology is changing the society and economy, determining the entire spectrum of social consequences and the net balance of social costs and benefits with absolute certainty is challenging. The expansion of E-commerce, Internet and other uses of information networks is causing major changes at practically every level of society. Technical advancements such as online sales have the potential to help E-Commerce customers significantly. Existing microeconomic study on the change from offline to online consumption focuses on the welfare impacts of lower costs and more product diversity in online stores vs brick-and-mortar stores. It excludes the influence on the supply side, particularly on the retail sector, as well as the income and substitution implications in overall consumer expenditure. The study might correspond to the customer experience of online purchasing, but it does not justify the observed impact of e-commerce on offline retail trade in brick and mortar establishments. The total economic impact of a change in retail technology and a transition from offline to online consumption using a multi-country multi-sector CGE model were computed. Two transmission pathways were found, one through relative trade costs in cross-border commerce and the other through a larger technological shock to retail with cross-border cost reductions as one expression of this effect. E-commerce has reduced the role of time as a determinant of the organization of social and economic activities. It increases the potential for time savings as consumers buy more effectively, but it has the potential to limit leisure because the technology provides a continual electronic link to work. Also, many people are finding that the need to do work quickly is rising. This is linked to the wider issue of policy-making mechanisms' capacity to accommodate "Internet time."

Acknowledgments

The authors express their appreciation to the Deanship of Scientific Research at King Khalid University, Saudi Arabia, for funding this work through research groups program under grant number R.G.P.1/88/43. This work was supported by Al-Mustaqbal University College Grant number = MUC-G -0322.

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