

# Capturing the Growth of E-Commerce in Jordan Using a Novel Research Approach

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**Abstract:** The current status of Jordanian e-commerce appears less known. Many researchers have tried to address certain barriers to Jordanian e-commerce; however, the literature does not show a complete picture of e-commerce adoption. There is a problem of limited resources and data about e-commerce activities in Jordan, perhaps because there is little e-commerce activity therefore there are fewer journal articles. To address this issue, a new research methodology was developed by analysing a national newspaper. In this paper, the growth of e-commerce adoption was highlighted, and the underlying barriers of e-commerce have been determined. Examples of e-commerce activities and enablers were presented. The research shows the relationship between these barriers and the impact they have on others. The research shows that a major ongoing problem is a lack of consumer awareness, which has an impact in e-commerce trust. To address this problem a proposed contribution has been outlined for further research.

**Keywords:** E-commerce adoption, E-commerce growth, The Jordanian Times, Newspaper Analysis, Jordan.

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## 1. INTRODUCTION

E-commerce in Jordan has grown significantly over the last few years. As a developing country, Jordan shows readiness for e-commerce compared to other developing countries. The infrastructure in Jordan is strong; however, there are still limitations to e-commerce adoption in Jordan. Many researchers have determined and tried to address certain limitations such as security, trust, and banking industry related issues. Although with the sudden growth of e-commerce in Jordan, there are new challenges, and previous ones not investigated in detail. To address the problem of lack of resources and information available in the research, a new methodology has been proposed. This paper highlights different limitations and challenges in e-commerce adoption in Jordan. Moreover, a complete picture of e-commerce growth and current status in Jordan is presented. Furthermore, different enablers to e-commerce are outlined with examples of e-commerce success, to illustrate the growth.

The methodology undertaken for this research is outlined in section 2. The main analysis and findings found through the methodology is presented in section 3. ICT, infrastructure, and technology is outlined in section 4. Challenges and limitations to e-commerce adoption are presented in section 5. Opportunities and enablers to e-commerce underlined in section 6. Section 7, highlights the government role towards e-commerce adoption and the laws status and impact on e-commerce. In section 8, the relationship of e-commerce factors are shown, followed by the proposed contribution in section 9. Finally yet importantly, the conclusion, limitations, and future work outlined in section 10.

## 2. METHODOLOGY

This research papers methodology is based on secondary data, which aims to capture e-commerce items from a national newspaper (The Jordanian Times). The newspaper is considered a major source in reflecting public issues [Collins et al., 2006]. This of course depends on the quality of the newspaper and its political independence. Accessibility is one advantage of collecting data from newspapers, and it can provide contextual up to date or historical information. The newspaper provides a window on e-commerce activities and the perceived importance of the facilitators of e-commerce in Jordan. This provides a novel method to capture one metric of both e-commerce activities, and a state of awareness of e-commerce.

On the other hand, secondary research has several disadvantages, such as it does not include any primary data. The nature of the study is descriptive [Laudon & Traver, 2009].

### 2.1. Keyword selection process:

The information was collected systematically. The first step in analysing the newspaper is to detect the keywords in searching for the newspaper articles. Figure 1 illustrates the keywords selection process.

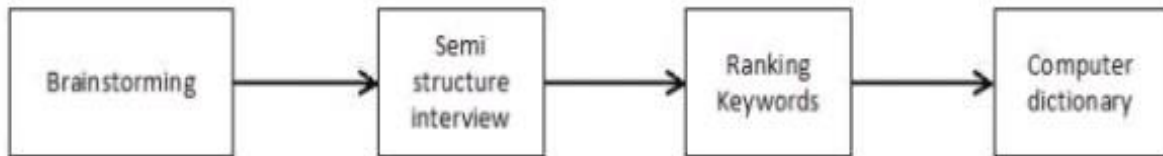


Figure 1: Keywords selection process

The brainstorming activity involved 10 international researchers in the field of computing. The participants were asked to provide 10 keywords that in their opinion might capture the full picture of e-commerce growth using a newspaper website. A list of 100 keywords was gathered and analysed using words frequency. Figure 2 shows the list of keywords and the percentage of frequency.

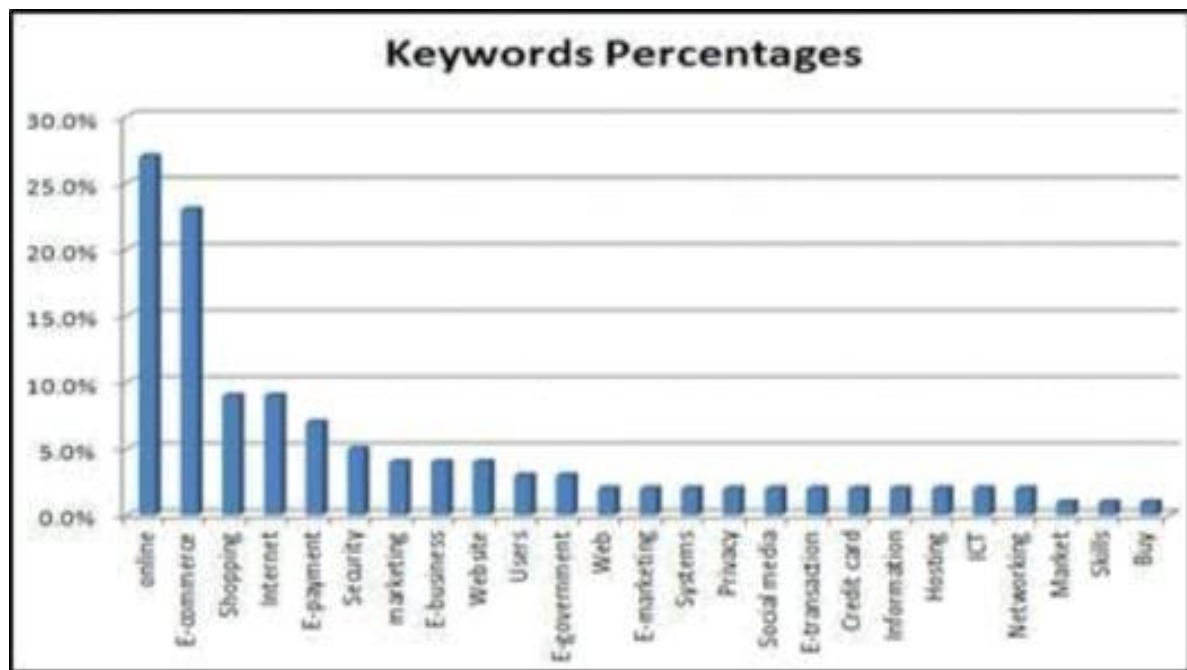


Figure 2: Keywords percentages

After determining the most frequent keywords, six keywords (Online, E-commerce, Shopping, Internet, E-payment, and Security) were chosen, as the most repeated keywords. From Figure 2 percentages a selection from 5.0% and above is made.

In order to be more precise and concrete in the selection, a semi-structured interview was conducted with the same 10 international researchers who participated in the brainstorming stage. The purpose of the interview was to get further explanation of the reasons why certain keywords were given, in order to guide what should be included in the search criteria.

At the start of the research, the possibility was considered of getting the most relevant results, so various forms of words were used such as both E-commerce and Electronic commerce, where the abbreviation might lead to different results as both terms are commonly used in the field. A computer dictionary was used to detect the abbreviations. The complete keywords that were used are presented in Table I.

**Table 1: The complete selected keywords**

Keywords	Similar Keywords
Online	.....
Internet	.....
Security	Online Security .....
E-commerce	Electronic Commerce .....
Shopping	Online shopping                      E-shopping
E-payment	Electronic payment                      Online Payment

**2.2. Limitations:**

Due to the lack of space, the articles in the newspaper may not be detailed enough and only present portions of the content. It can also be selection biased due to the journalist selection of events, or description biased due to their selection of contents and text. The newspaper may only receive information the companies are willing to provide, therefore, there may be missing or incorrect information [Öberg, Fors & Dahlin, 2006].

Another limitation is in the method and selected strategies adopted in this study necessitated that all relevant articles were analysed from one source; this must be considered as a limitation as well as being of some benefit, and it is one that will be addressed in future work.

**3. MAIN ANALYSIS AND FINDING**

The numbers of articles found in the Jordan Times newspaper containing the keywords was 1943. 1281 of the articles were found to be relevant, and 662 were discarded due to irrelevance of the topics and duplication. For example, 10 articles were addressing faults in internet network due to power cut in the region; therefore, these articles do not show relevant information about ecommerce growth. The articles were categorized into topics presented in Table 2.

**Table 2: List of topics found from The Jordan Times Newspaper**

Topic	# of article	Topic	# of article	Topic	# of article
Arab Spring	5	ICT	262	Payment	21
Arab Web Content	34	Infrastructure	107	Piracy	7
Awareness	119	Jobs	8	Security	42
Education	28	Law	40	Social Media	43
Opportunities	123	Limitations	72	Tourism	15
Entrepreneurship	31	Media	56	Trust	7
Government	162	Mobile	99	<b>Total Number</b>	1281

As shown in the table above, ICT has the largest number of articles. This is likely to be due to the variety of aspects covered by Information technology e.g. telecommunication, computers, software, and Internet. Additionally, it was found that government services was the second largest topic and most of the government articles show a lack of government support towards e-commerce, although there were some articles that showed government initiatives towards e-commerce.

On the other hand, the Arab Spring had the smallest number of articles. This is a new issue; therefore, fewer articles mention this. The articles show that the Arab Spring appeared to have an indirect impact on Jordans economy and ICT infrastructure. [Al-Rfou, 2013] found that the political instability affected negatively on business activity in Jordan. He also found that the commercial activities, sales, and revenues fell due to political situation and the state of political instability (Arab Spring). Moreover, business profits decreased and raw materials prices rose from previous years due to the events of Arab Spring.

Interestingly, despite the fact trust in e-commerce is an essential prerequisite for establishing and maintaining customer relationships, and being a critical key for success in comparison to traditional commerce [Jebur et al. 2012]. Only seven articles addressed this issue.

The newspaper analysis showed that most of the articles about e-commerce activity were dated post-2009. Hence, the major growth of e-commerce happened in those years; but interestingly, the frequency of topics such as payment security and tourism remain low. The distribution of the articles is shown in Figure 3.

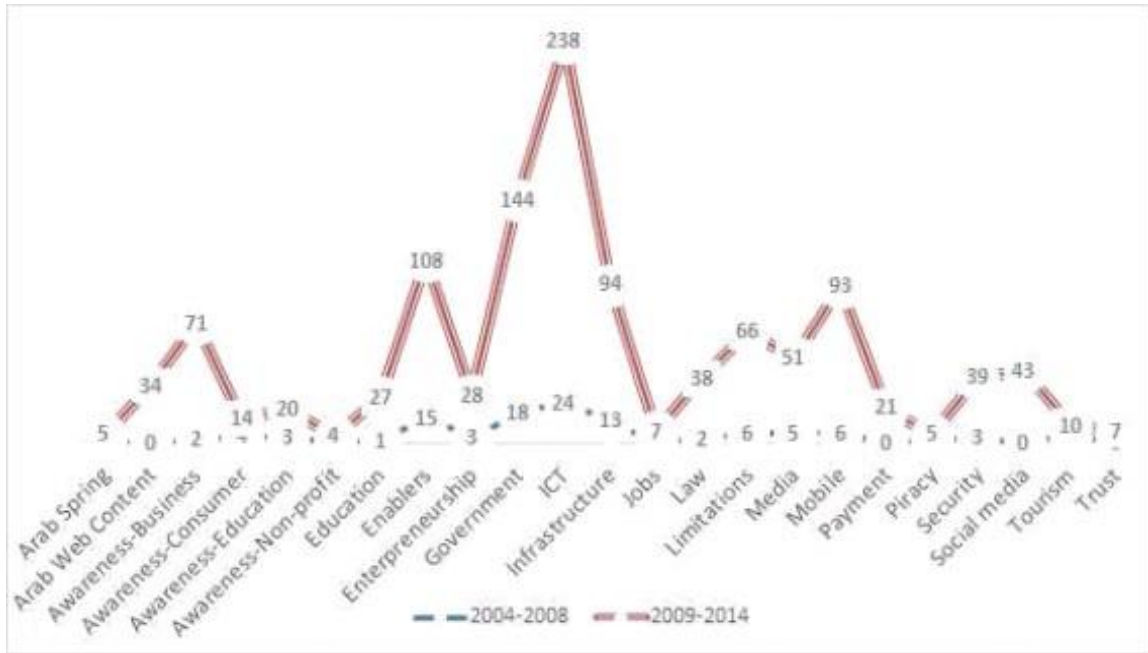


Figure 3: E-commerce growth according to 4-6 years scale

Based on Figure 3, an investigation of e-commerce growth for the years post 2009 was undertaken. The articles were divided from 2009-2011 and 2012-2014. As a result, the majority of the articles found were between 2012 and 2014, hence the majority of the e-commerce growth being in the last two years. The articles distribution is presented in Figure 4.

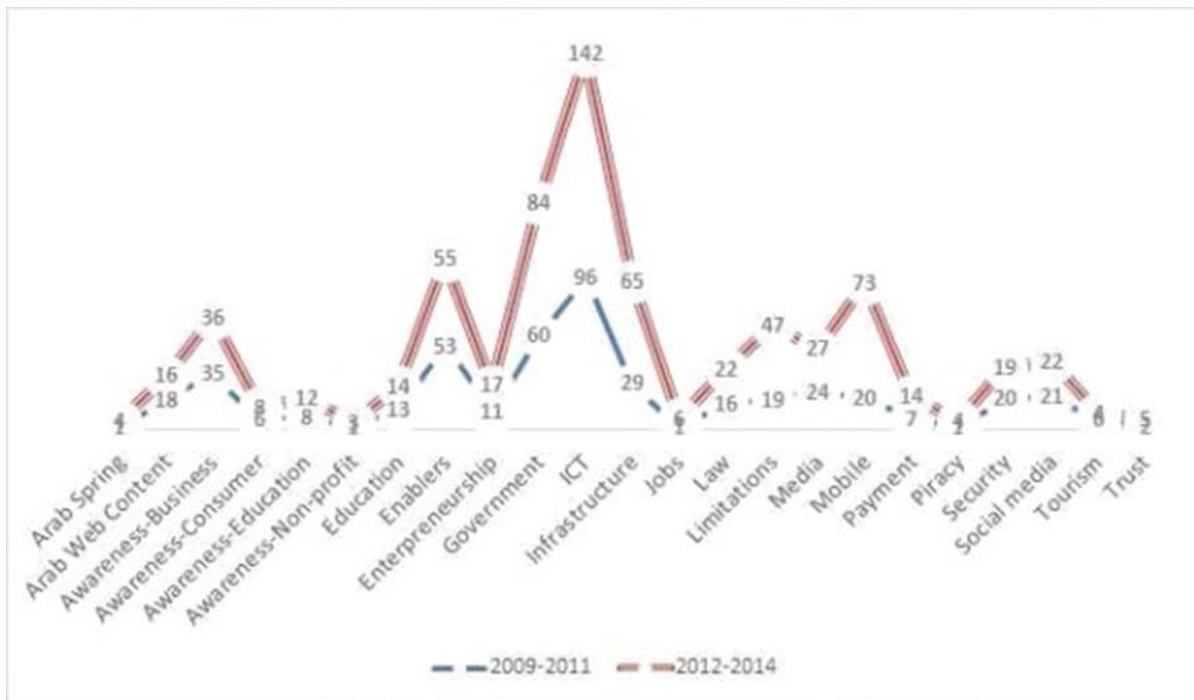


Figure 4: E-commerce growth according to a 3 years scale

Due to the similarity and closeness of topics, the topics were classified into four themes: ICT, Infrastructure and Technology, Challenges and Opportunities, and Government. Table 3 illustrates the classified themes and a more detailed explanation is provided in the following sections.

Table 3: Classified themes

ICT, Infrastructure, and Technology	Challenges	Opportunities	Government
Mobile	Arab web content	Social Media	Government Services
Infrastructure	Security	Entrepreneurship	Law
Jobs	Trust	Media	
ICT	Piracy	Awareness	
	Payment	Tourism	
	Arab Spring		
	Inappropriate training		
	Other- limitations		

#### 4. ICT, INFRASTRUCTURE, AND TECHNOLOGY

##### 4.1. ICT:

ICT plays an important role in e-commerce; this includes telecom and computer networks. Jordan has a solid infrastructure to support e-commerce in general. In addition, Jordan's internet services are high, reliable, and at a reasonable speed servicing both companies and citizens [Alsmadi et al, 2009]. At the beginning of 2013, internet penetration reached 69% with 4.4 million users. This percentage increased in 2014 to 73% [Ghazal, 2013d].

It is worth mentioning that better infrastructure leads to better services, both of which are important to increase the growth of e-commerce in Jordan. An article by [Ghazal, 2013a] showed that if local mobile or internet markets grow by 10%, then the gross of the products increases by 2-3%. Generally, this research found that ICT has the following advantages as shown in Figure 5.

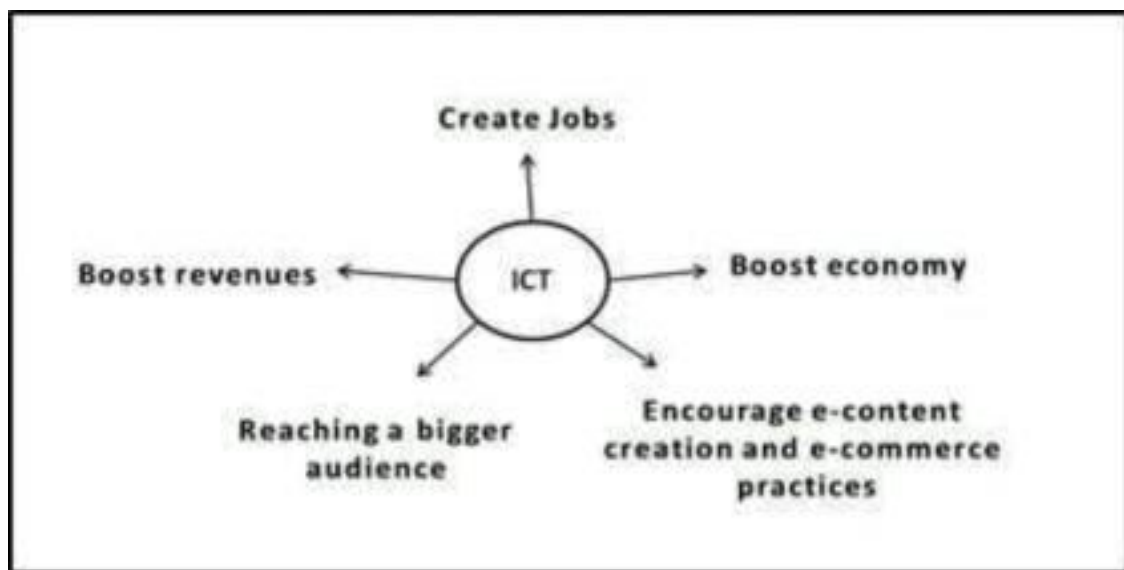


Figure 5: ICT Advantages

##### 4.2. Infrastructure:

Jordan has adopted many initiatives to increase network infrastructure over past years. One initiative is increasing internet services through lowering the cost of the national electricity network [Ghazal, 2014d]. This project shows that by decreasing the price of internet services, Jordan's internet penetration will increase 60% over the next few years. However, although these costs may decrease, the increase in taxation on mobile phone usage may well eliminate any contribution to ubiquitous mobile internet services.

Similarly, another project in Jordan to improve the cable network is the Regional Cable Network (RCN) project [Ghazal, 2012f]. This project started in 2010, but not implemented until 2012. The project objective was to create the longest communication infrastructure that is about 7,750 kilometre round. Seven ICT operators from Jordan, Turkey,

Syria, Saudi Arabia and the UAE have implemented this project. The aim of the project was to extend cable from the UAE to Europe and serve as a gateway for 2 billion people. This project also aimed to reduce prices and disruption for internet users.

Moreover, the Jordan-EU programme is a project that started in 2003, but halted until 2012 due to lack of funds [Ghazal, 2012g]. Jordan then found funding from the European Union (EU). This project aimed to strengthen the Telecommunication Regulatory Commission (TRC). The programme's length is 24 months to support the TRC and develop its framework and operational capabilities, making it standard with the international standards.

In 2013, Cisco decided to collaborate with some Jordanian companies to help implement the National Broadband Network [Ghazal, 2014e]. This project aims to improve the broadband network around Jordan to reach remote areas. Cisco also invested 6 million dollars in 2014 in the countryside, this impact fund was to support e-commerce along with mobile innovation, healthcare technologies, consumer internet and digital media services in Jordan.

#### **4.3. Jobs:**

ICT plays a major contribution in boosting the economy in Jordan. Creating jobs might be one of those contributions, as a study between 1999 and 2008 shows that ICT created 80,000 jobs [Ghazal, 2013b]. An article shows that in 2011 the numbers of ICT companies in Jordan were 450, whilst in 2000 it was only 20. Therefore, this growth created a huge number of job opportunities in all sectors.

Nevertheless, there remains a problem in the IT skills graduates lack in. [Azzeh, 2013] showed that in 2013, 918 of graduates lacked in the necessary training. On the other hand, the government are working on initiatives to help graduates receive training as part of their education systems.

#### **4.4. Mobile:**

A study conducted by Spring Pew Global Attitudes Survey in 2014 covering 24 countries revealed that 95 per cent of Jordanians own mobile phones compared to 88 per cent in Egypt, and 86 per cent in Lebanon. This survey showed that nine out of 10 people own mobile phones in Jordan.

Jordan also ranked amongst the countries where smartphone ownership is high, 38 per cent of mobile holders have smartphones, as opposed to 23 per cent in Egypt, 12 per cent in Tunisia, 23 per cent in Russia, 17 per cent in Turkey and 37 per cent in China. Another study titled Use of IT tools in households in 2012, showed that 98.2 per cent of Jordanian households have mobile phones, and two out of each five families have a member that uses a smartphone [Malkawi, 2013a].

Mobile penetration in Jordan reached 157 per cent on March 2014 [Ghazal, 2014b] with about 10.4 million mobile subscriptions. Using mobile phones to send text messages is the most popular activity among mobile users in Jordan, with 71 per cent of them using their mobile phone to text, 48 per cent use their mobile phones to take pictures and videos, 28 per cent to access social networking sites such as Facebook and Twitter.

In Jordan modern applications, especially videos operate better by 3G service. A big factor to mobile internet penetration is the introduction of 3G services, initiated in 2008. 3G is the third generation of mobile phone standards and technology. From its characteristics, it offers a wider more advanced service to the network capacity, allowing services such as wide area wireless voice telephony, video calls, and broadband wireless data all in a mobile environment. This is a reason why Jordanian people are likely to shift to using the service. According to one article, video is the next big wave of communication across the world [Anon, 2013]. People who want to make phone calls and send SMSs will use Second Generation services. For those who want to watch videos and use other applications it is more convenient to use 3G service. Although Jordan telecom companies Zain, Orange, and Umniah have advanced with 3G, the quality of service still needs improvement. There are still some complaints from internet users about internet speed and quality, despite the fact that almost everyone in Jordan has at least one mobile phone, this therefore is considered a major opportunity to increase the internet penetration and e-commerce adoption in the country. The Jordanian government however has recently increased the special tax on mobile phones from 8 per cent to 16 per cent, and the tax on mobile subscription from 12 per cent to 24 per cent. The question must be asked whether this is to improve revenue receipts, or prevent widespread use of internet technologies, and debate whether that contributed to the Arab Spring uprisings in other countries.

## **5. LIMITATIONS, CHALLENGES, AND BARRIERS**

E-commerce in Jordan is currently facing a poor demand because most of the transactions still are based on cash on delivery [Saeed, 2004]. According to [Messieh, 2012], 70% of the Jordanians pay using cash on delivery. This demonstrates a negative condition of e-commerce in this developing country, as despite the advances in infrastructure, electronic trade and commerce still remain restricted only in paying certain fees and other charges on procedures. Thus, the researcher considers the fact that present status of electronic purchasing, and confidence in it remains poor [Ayb, 2012]. Moreover, other strong reasons have been found behind the slow adoption of e-commerce in Jordan. This is a lack in support of legislation and different laws, which makes it an impediment in the development of these services [Turban et.al, 2002]. Other limitations are Arab web content, Security, Trust, Piracy, Payment and Arab Spring. Each of these issues will be considered in term in the following sections.

### **5.1. Arabic web content:**

The increasing level of internet use in the Arab nations is greater than any nations in the world [Wheeler, 2006]. Therefore, Arab countries need to encourage the use of Arabic web content, as Arab consumers will have more benefit using e-commerce to cut the transaction cost, and access to variety of products [Pons et al. 2003]. In addition, [Pons et al. 2003] pointed out that technology in some Arab countries might interfere with their values and beliefs. Consequently, these issues could be considered by providing Arabic websites. Furthermore, due to limited use of English language between the Arab countries, Arab web content will achieve greater benefit; hence, this will improve their trust to use e-commerce.

Arabic web content is a barrier to e-commerce [IORMA, 2013]; Arabic content on the web represents just 3 percent of the total digital content online. However, the numbers of Arabic speakers on the internet is more 5 percent of the global population [Google Blog, 2014].

There is a huge gap between Arabic content and other languages such as English. Young people go online for information and entertainment, therefore the lack of Arabic content can increase ignorance in and of, the Jordanian community. Arabic web content in key sectors including education, business, and trade services is important. This will increase the societal internet penetration drastically [El Gawady, 2005], and as a result there is need for solutions to the Arabic content challenge.

On the other hand, the Jordanian government established a consultative council to increase Arabic web content in 2012 [Ghazal, 2012h]. The aim was to encourage young people to go online and contribute in Arabic content. Universities in Jordan are also encouraging their students to contribute articles in Arabic in Wikipedia and they provide the training to do so.

Furthermore, another contribution to the Arabic content is TAGIPEDIA, which was launched in 2013 [Ghazal, 2013c]. This provided an encyclopaedia from over 5 million items across the Arab world in the Arabic language, compared to Wikipedia. TAGIPEDIA offers richer Arabic content and more Arabic articles; Wikipedia has only 214,500 articles in Arabic. As a result, investors started to become interested in the Arabic content as it increases profits and revenues by increasing the number of users that use their services, and there is a huge demand for it on the web [Ghazal, 2014c].

### **5.2. Security:**

Security of online systems plays a major role in the adoption of e-commerce. A recent study reveals that Trojan horse attacks top the list of threats affecting Jordan, followed by viruses. In addition, Jordan ranks ninth among Middle East countries in terms of the level of malware threats, according to figures by Trend Micro Incorporated [Ghazal, 2014a]. Internet users in Jordan face several cyber threats and are vulnerable to those attacks, as they do not adopt proper security systems. Despite those threats, Jordan is usually affected less compared to other countries in the Middle East. Ironically, this is due to the low level of e-commerce activities and few e-transactions. This means that the economy and companies in Jordan are less attractive to cyber criminals, but they still need to pay attention to the issue of security to prevent any possible breaches, particularly as e-commerce use grows.

Other factors discourage Jordanians from adopting e-commerce. [Ghazal, M., 2012b] pointed out that online payment is only 3 per cent of overall e-commerce in the region. This is because Jordanian people are still cash oriented and prefer cash on delivery. According to [Ghazal, 2012a], Aramax statistics show that only 30 per cent of goods sold in the Arab world, including Jordan, are paid for online, whilst the majority of internet users are young people who do not have credit cards to make online purchase. Moreover, fear of fraud is another factor that discourages Jordanians from shopping online [Ghazal, 2012a]. According to the Visa report, 23 per cent of Jordanian companies do not use e-commerce in their

businesses out of fear of fraud [Ghazal, 2012b]. This consequently limits the growth of e-commerce in Jordan.

As a result, the Jordanian government has set new laws to address the most common cybercrimes such as hacking, changing and destroying data, spreading viruses and Trojan horses, tracking and intercepting information and entering websites and personal accounts without authorisation. The penalties range from paying 100JD to 5000JD, in addition to 7 days imprisonment to life in prison [Ghazal, 2011b].

### **5.3. Trust:**

Consumer trust is an essential key for ecommerce [Najafi, 2012]. Online businesses need to ensure that their customers are satisfied, and they need to make it easier for customers to return products bought online, if they are faulty or they change their minds. Online shoppers will expect to have equivalent rights as those shopping face to face. Businesses need to build their reputation, as customers not only want to buy products online but have a good post-sales service. One way that businesses can build their reputation is by using social media websites and increasing their positive reviews.

People in the Middle East are cash oriented and are afraid to use their credit cards to buy online [Ghazal, 2012b]. People are concerned, as they do not see the people or the physical items they buy. Another issue is receiving a different product from the products purchased online, as well as some consumers have doubts on the quality of items purchased. People in Jordan like to bargain and pay in cash, and they want to see or touch the products they buy. Those issues might discourage Jordanian customers from buying online. Awareness plays a role to increase the benefits of e-commerce, in Jordan however, there is a limitation to consumer awareness.

Additionally, people in Jordan are concerned and fear fraud [Ghazal, 2012b]; many consumers are worried about their bank accounts being hacked, or losing large amounts of money. On the other hand, there is a particular need for legislative action to provide some trust to the citizens by developing e-transaction law to protect both customers and businesses, this could make Jordanian customers more secure and increase the number of online transaction. As shown in the Arab Advisers Group report in 2011, in Jordan only 27.2 per cent believe that e-commerce is secure, whilst 45 per cent consider it not secure. Therefore, in order for e-commerce to achieve its full potential, consumers must feel that online transactions are safe, trustworthy and fair [Tahat & Al-Ibraheem, 2006].

### **5.4. Piracy:**

Piracy is a major challenge in developing countries, including Jordan. Shop owners selling DVDs, CDs and computer devices rarely buy original copies [Ghazal, 2012c]. They argue that selling fake CDs make much more revenue compared to selling the original copies. One owner stated "People do not care if it is original or not. They just want something that they can use either a game, a movie or whatever." Customers also argue that they can get the same product for a much lower price.

Because of this challenge, Microsoft has launched several initiatives to solve the piracy issue. One solution for the piracy problem is to adopt copyright protection laws. The Jordanian Copyright Law specifies that it is a crime to download software, music or movies, which are protected under the legislation. Offenders face a prison sentence of between three months and three years, and a fine ranging from JD1000 to JD6, 000 [Ghazal, 2015]. Despite this piracy remains an issue, therefore, there is a need for more effective enforcement of piracy laws in Jordan.

### **5.5. Payment:**

Jordanian internet users spent around 370 million dollars on products, services and online bill payments in 2011, a 92 per cent increase from 192 million dollars in 2010, according to a report by the Arab Advisers Group [Ghazal, 2012e]. The report revealed that 24.4 per cent of internet users in Jordan used e-commerce to buy products or services, or pay their bills online in 2011, compared to 15.4 per cent in 2010. Recently, there has been an increase in the number of local institutions that allow Jordanians to pay for products and services online such as "Madfoo3at", a service that provides customers with convenient and secure payment channels to pay online. This increase in use of e-commerce in Jordan appears to be due to the rise in broadband internet connections, speed increases and increases in the number of Jordanians holding credit card that can be used online. Despite these increases, consumers in Jordan are still cash-driven due to cultural reasons. According to Chief Executive Officer of International Cards Company as cited in [Obeidat, 2010]; "There are over 15,000 shopping points in Jordan that use electronic payment, and the use of card purchase transaction is growing". However, there is a need for strong regulations to protect users of e-transactions, which are faster and more efficient, but can also mean you may lose a lot more money a lot more quickly, and have trouble recouping it.



### **5.6. Arab Spring:**

Researchers describe the term by clarifying it as a revolution that spread through different North African and Middle East nations [Danahar, 2013]. This was a series of anti-government protests that proved to be quite beneficial for developing nations such as Jordan. [Baker, 2012] pointed out it is the time when the country experienced a techboom, which gained speed. This was because many of the young Arabs from their countries were keeping up to date by online systems for the first time [Baker, 2012]. Thus, it was a positive revolution for the country concerning Arabic content [Howard & Muzammil, 2013].

### **5.7. Inappropriate training:**

Education plays an important role in boosting ecommerce growth. Students in Jordan studying computer related subjects at the universities are not getting the required skills in order to be qualified to enrol in professional programs. The lack of funding is the major reason given by the universities who need to purchase software licences [Malkawi, 2013b]. In 2010, a survey showed that only 700 of the Kingdoms over 3,500 public schools are connected to the Internet via the broadband network [Malkawi, 2013b]. Moreover, concerning the student attitude towards education and training, students in Jordan are more interested in obtaining a degree rather than learning the skills required for a certain job.

### **5.8. Other Limitations:**

According to [Sahawneh, 2002], there are many factors are supporting the development and success of ecommerce in Jordan, which, if given the required attention will bring a complete boom in trade and business of the country [Sahawneh, 2002]. Researchers further support this statement by highlighting the factors that are supporting development of e-commerce in Jordan.

The first factor is the increasing expansion, as well as demand by internet users in the country [Qasim & Mohammed, 2003]. This is going on in such a manner that electronic trading of different goods and tangible products are becoming part of daily life of some of the users. But on the contrary, they still remain focussed on cash on delivery which can bring on greater challenges, however it does support a culture that want to see and touch goods before parting with money to pay for them. Therefore, cash on delivery (COD) may be a useful halfway house in the steps to achieving widespread ecommerce. Just because the final payment is not online does not mean the activity is not e-commerce, just not as fully e-commercial as those in western cultures where the whole end to end buy and pay transaction occurs online.

[Loudon & Loudon, 2008] highlight one of the major constraints of this approach such as dissatisfaction with the kind of products purchased. The Author agrees, as he believes that e-commerce services should not be taken lightly, and requires additional awareness on the part of businesses and consumers [Loudon & Loudon, 2008].

Speedy approvals, implementation of legislations and laws, and support from government are some of the factors critical to the success of e-commerce [Corrado & Jordan, 2002]. The major limitation that e-commerce is facing in Jordan is with getting proper support from government and other administrative bodies. Because of lack of proper support the spend on e-commerce remains quite limited at only to 6 billion dollars, which when compared to other nations such as Middle East (6 billion dollars) is quite low [Schroeder et al, 2001].

## **6. OPPORTUNITIES**

### **6.1. Social Media:**

Social media plays an important role in e-commerce. It helps businesses get feedback on their products and services, and with a star rating system allows future purchasers to make informed choices. Many consumers rely on social media to view feedback on certain products, restaurants, and shops. Social media increases consumers' trust in e-commerce, and builds business reputation. It can be used to create a digital community, which helps business growth, around 90% of corporations worldwide use social media [Ghazal, 2012j]. Businesses also use social media to advertise their products and services.

In Jordan, the popularity of social media websites has grown enormously. The number of Jordanian Facebook users reached 2,555,140 by the end of 2012, increasing to 2.7 million by 2013. Twitter users reached 50,000 in 2012. Pew research centre (2011) as cited in [Ghazal, 2011a] shows that 3 out of 10 Jordanians use social media. Social media has become the main purpose that Jordanians connect to the internet. As highlighted by [Ghazal, 2012d], Jordanians in general spend more time on social media than sleeping. Statistics in 2012 show the average age of Facebook users in

Jordan with over one million users are from 18-24, followed by 25-34 age bracket. With these statistics, it shows that the target e-commerce market should be covering these ages. As pointed out by [Ghazal, 2012d], Jordanian e-commerce businesses should focus on advertising more on social media websites due to their popularity, but consumers have to be prepared to pay for goods and services they have not seen, and trust suppliers to send them.

### 6.2. Entrepreneurship:

Entrepreneurship is considered an independent factor of economic growth [Schumpeter, 1961]. Moreover, it also has higher levels of innovation and technological change [Audretsch & Keilbach, 2004]. A reason behind many successful online businesses in Jordan is Oasis500, an organisation that helps turn innovative ideas in the field of information technology into reality. Oasis500 helps fund Jordanians young entrepreneurs, trains them, and guides them into creating successful businesses and investments. Oasis500 has invested in more than 54 companies, 40% were from the field of e-commerce. An example of an idea that Oasis500 funded is Jamalon bookshop. It all started when Alaa' Al Sallal was trying to purchase Arabic books on Amazon but failed. He then turned to Oasis500 with the idea of creating an online bookstore with Arabic books. The company has now over 9 million books in Arabic and English, and has become a successful ecommerce business in Jordan. Other examples of companies that were set up with the help of Oasis500 are I3zif and Shop2Go. Table 4 presents some examples of successful companies mentioned in the Jordan Times, with a brief description of how they have grown or became successful.

**Table 4: Successful e-commerce companies in Jordan**

Company	Product/ Service	Ecommerce growth
Wheels Express	Web based delivery service	Allow users to purchase items online plus delivery. The company established in 2006, it starts delivering DVDs now it delivers everything.
Marka VIP	Online clothes shop	Worth over 22 million US dollars since 2010. It allows consumers to
Jamalon	Online book shop	Over 6 million books online.
I3zif	Online music lessons and online videos	Trained in the UK.
ShopGO	Create e-commerce website for businesses	Helps businesses move online. This company is trained in the UK.
Run2sport	Online sport platform	Attracted 2.5 million investments from souq.com.
Madfoo3atcom	Payment gateway	Allow customers to pay online easier
E-wallet	Mobile Payment	Allow customers to pay using their mobiles. Also allows money transfer between users.
E-fawateercom	Online payment	A system to allow users to view all their bills and pay in one unified website.

### 6.3. Media:

Media plays an indirect role in e-commerce. The most popular media found in Jordan are the radio, TV and news websites. Around 50% of Jordanians rely on news websites. This can be an opportunity for e-commerce growth as increasing the number of Jordanian users using online sources will result in a better chance to be familiar with most of e-commerce activities. Hence, encouraging Jordanians to buy online through advertising on these websites will increase e-commerce activities.

However, many news websites in Jordan have been shut down as the government tracks most web media by ensuring that the websites are registered. Licencing the websites allows owners to advertise on their website complying with the law. Akeed is a government online portal, which aims to monitor the credibility of the media.

### 6.4. Awareness:

Raising awareness is an important factor in ecommerce adoption. Awareness is the first stage towards trust [Najafi, 2012]. Research of e-commerce awareness is important as it can reduce customers' uncertainty and concern, and consequently increase their trust, which leads to ecommerce adoption. For instance, when customers are aware of e-commerce laws that provide online protection, and security systems that exist to protect their transactions e.g. encryption, customer trust will be built. Another example that demonstrates that customer awareness increases trust can be through electronic Word Of Mouth (eWOM); for instance, reading other customer positive reviews in social media websites. However, when there is a failure of trust, or data is lost, eWOM can do a great deal to discourage other potential users.

It is beneficial for both businesses and consumers, therefore this will help positively to enhance e-commerce prevalence and increase the number of internet users [Al-Khaffaf, 2013]. Yarrub Quduh the Chief Executive Office of the Jordan Enterprise Development Corporation (JEDCO) pointed out that there is need for raising awareness among businesses in Jordan. Similarly, [Al Nagi & Hamdan, 2009] pointed out that Jordan is still facing some obstacles. One such obstacle is the lack of e-business awareness that forbids many companies from doing business online. Additionally, an awareness is needed to do more marketing strategies in e-commerce, to increase company sales and expand their markets. However, many studies show that most Arab countries are slower in acceptance ecommerce, therefore raising awareness about benefits of using the internet and ecommerce is highly needed [Aladwani, 2002; AlGhamdi and Drew, 2011; Al-Mohamed, 2011].

**Table 5: Awareness categories**

Type of Awareness	Number of articles
Business	74
Consumer	18
Education	23
Non- profit organisations	5

Table 5 shows most of the events in awareness relates to businesses and that not much has been done towards consumer awareness. As mentioned in the trust section, increasing consumer awareness could increase trust, and simultaneously increase online shopping. Newspapers have a role to play here, and could encourage or set e-commerce back a decade if they printed only "scare-stories".

Most of the educational awareness in Jordan has been conducted through academic conferences in the universities. The aims of these conferences are to increase research in the e-commerce field, hence, increasing the adoption of e-commerce in Jordan, as researchers can investigate issues that affect e-commerce in Jordan.

Non-profit awareness relates to services that are non-profit related and their benefits to Jordanian people. A non-profit campaign was launched on internet freedom when government decided to block certain websites. These services can be government related and can have an effect on e-commerce by indirectly increasing users' activities online and therefore increasing trust and online shopping. In Jordanian society, there is usually resistance and fear of change and awareness is an important factor to remove fears people may have about e-commerce [Ghazal, 2012e].

### **6.5. Tourism:**

Tourism in Jordan is a major source of Jordans revenue due to the historic attractions such as the Dead Sea and Petra. One e-commerce project is to promote Jordans tourism, and to present the role of digital and social marketing can promote the country online is "72 hours in Jordan" [Luck, 2014]. This projects aim is to promote a diverse array of historic, religious, natural and cultural sites in Jordan that can be visited in three days.

It is not only websites that can promote Jordanian culture and attractive places, travel agents and airline companies in Jordan have topped the number one list in e-commerce activity in Jordan. For example, a successful airline company is Royal Jordanian (RJ). In 2007, RJ launched a new system for e-ticketing that increased their sales. RJ automated e-ticketing for 47 out of 53 of their current destinations. According to the Jordan Times article, RJ is the 19th highest airline out of 350 airlines worldwide for issuing tickets throughout their global network [IATA, 2007]. RJ worked towards improving e-commerce systems with a deadline of May 2008. A spokesperson from RJ shows customer satisfaction in using the new ecommerce system, making it easy for them to book and arrange their flights online. In addition, RJ had plans to replace all tickets with e-ticketing, however this raised the question of what do people without computers do to get their tickets. Consequently, in 2012 e-ticketing was named as the number one on the list of e-commerce activity in Jordan [Ghazal, 2012b].

RJ continued to expand and in 2008, they adopted a new system for cargo, switching all cargo transactions to "paper-free". This increased the cargo growth to 53

## **7. GOVERNMENT ROLE IN JORDANIAN E-COMMERCE**

### **7.1. Government services:**

Governments play an important role in e-commerce adoption as they can provide and control a suitable infrastructure in order to enable the adoption of e-commerce. An example of this is the government participation in 2010 on a project to explore the quality of the internet's service in Jordan. The project connecting Jeddah, Amman, Damascus, and Istanbul (JADI) with fibre optic connection [Ghazal, 2012k]. Fibre optic networks provide a reliable and better service than cable connection giving higher speeds and capabilities. This project also aids in lowering internet prices and ensuring fewer disruptions in internet services. JADI seeks to link the region with the Far East and Europe. On the other hand, the Jordanian government appears to lack funding to complete projects, for example, in 2012, it is reported that the government failed to launch e-government services due to lack of funds. Therefore, many projects are waiting to be funded by external sources or be subject to cancellation.

The government is also responsible for setting the e-commerce laws. Seven articles from several years showed that the laws have been delayed due to the governments' decisions and the process it takes to finalise the laws. The subsection below elaborates more about the law in Jordan related to e-commerce.

### **7.2. Law:**

Jordan is a signatory to more than fifty international agreements, many of which are trade-related; therefore there must be effective laws that govern e-commerce and electronic transactions. In 2001, Jordan introduced a temporary law on e-transactions; however, Jordan was not able to provide a complete legislation for regulating online commercial activities. The endorsement of electronic transaction law is only the first step that needs further effort to enable the online activities in Jordan to flourish. The Jordanian government should use a variety of supported instruments to encourage consumers and businesses to use e-commerce without any fear [Tahat & Al-Ibraheem, 2006]. Since 2005 Jordan witnessed a big shift towards e-commerce as more businesses went online and citizens started to use the internet for different purposes. As a result, the Jordanian government realised the importance of renewing the temporary law by addressing its gaps. In 2010 the Jordanian government planned to endorse amended e-transaction draft law in order to promote and protect e-commerce. However, up to this time the drafted law was still in the process of its approval by the government.

Nowadays many e-commerce activities in Jordan, such as E-Fawateercom, the new e-payment system that was launched by Central Bank of Jordan (CBJ) have been delayed due to the late re-draft of the 2010 e-transaction law [JT, 2014]. The reason behind the delay is because the drafted law has to follow long processes between different sectors within the government, before being signed and approved. Therefore, speeding up the endorsement of the draft electronic transactions law is crucial to encourage strong adoption to many e-commerce activities in Jordan.

## **8. RELATIONSHIP OF E-COMMERCE FACTORS**

The nature of e-commerce topics are interlinked, therefore it is quite challenging to address each aspect separately as topics are influenced by other topics. For example, capturing the level of internet penetration depends on the network infrastructure, and this depends on the government support of providing a suitable infrastructure.

The government is also responsible for setting laws to protect both businesses and consumers, and this could increase the trust. Another way to increase trust is by increasing awareness, which could be done by using social media; awareness can also increase by adopting proper training and education in schools and universities.

Figure 6 illustrates the relationships between e-commerce topics that are identified, based on the authors own interpretation from the analysis of the newspaper and previous research studies. From Figure 6, it is noted that the government is at the base of the e-commerce as it has influence to many factors. However, Arab Spring is not the only factor affecting government, this is because the increasing number of refugees immigrating into Jordan require government services and money. The sudden increase of services on the governments intake leads to delay in projects towards e-commerce adoption. Consequently, the Arab spring has an indirect impact on infrastructure such as telecom, and internet.

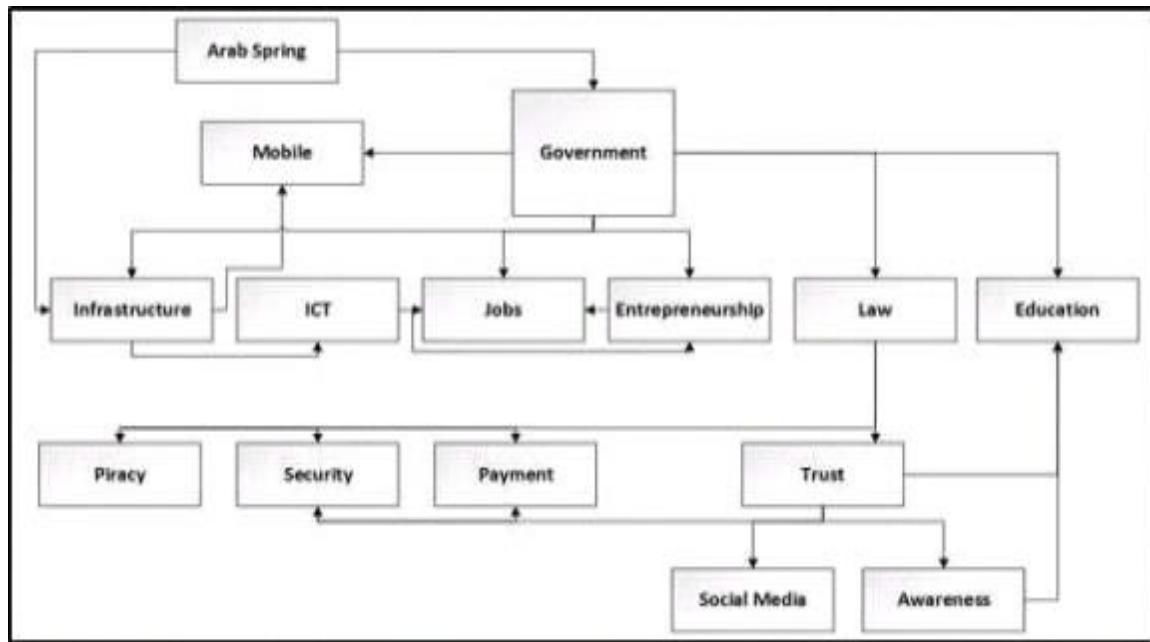


Figure 6: Topics Relationships

Moreover, piracy, security, and payment all depend on law. Law also has an indirect impact on trust. Trust can be increased using social media websites, as many consumers depend on reviews. In addition, awareness can increase trust by familiarising users with ecommerce and its benefits [Najafi, 2012]. Trust and awareness can be achieved by providing an appropriate education on ecommerce and ICT in general. However, this depends on the governments support by funding schools and universities with the required IT tools.

Furthermore, the increase of ICT gives the opportunity for entrepreneurs utilising the IT to turn their ideas into reality. Consequently, there will be more opportunities to create Jobs.

## 9. PROPOSED CONTRIBUTION

There are similar barriers and challenges facing the adoption of e-commerce in many of the counties around the world. It was found that some of the challenges are specific to certain countries, in the case of Jordan the limitations are similar to other Middle Eastern countries, however due to the economic, political, infrastructural, and environmental contexts, and each country has their own challenges.

Jordan, unlike the rest of the Arab countries except UAE and Bahrain, has an advanced infrastructure that would enable the country to adopt e-commerce successfully. However, due to sudden and unexpected factors such as Arab Spring, e-commerce has been set back. In addition, factors such as lack of trust, security, and law, make it challenging to move forward in the ecommerce adoption. More recently, the cost of mobile internet usage has increased through greater taxation.

From the analysis, it was found the barriers that face the growth of e-commerce in Jordan are presented in Table 6. Table 6: Challenges facing e-commerce in Jordan

Challenges of e-commerce	Level of Effectiveness
Law	High
Awareness	Medium
Security	High
Trust	High
Jobs	Law
Payment	Law
Piracy	Medium
Training and Education	Medium
Arab Spring	Law

These challenges are specific to Jordan and need further investigation. Issues such as Law and Arab Spring are difficult to resolve as they need the government corporation. Payment and security has been investigated, and been given several possible solutions. However, there is little research about consumer awareness and trust, which are two major issues in Jordan. As is illustrated in figure 6, awareness can be one solution to address trust, and social media could be a way of increasing awareness. We also found that there is an increase in number of mobile owners in Jordan therefore; mobiles can be used to increase awareness. Consequently, we propose a model that intends to increase consumer awareness, which, likewise, will increase the level of trust.

## **10. SUMMARY, CONCLUSION, AND FUTURE WORK**

The growth and the level of adoption of e-commerce is an important topic for research. At a general level, we can learn from case studies of different countries and identify the challenges that can affect the successful adoption of e-commerce: however, each country has a unique setting and therefore, the challenges and opportunities must be interpreted carefully.

Using this novel approach to capture the growth of e-commerce in Jordan, the study was able to identify factors, which if implemented might determine a successful e-commerce adoption in Jordan. The specific challenges facing Jordan were investigated, and presented, along with the level of effectiveness of those challenges towards e-commerce growth and adoption. Based on the findings we classified the newspaper articles into four categories (ICT, Challenges, Opportunities and Government), and each has affected the others. In order to overcome any of the above challenges it is necessary to consider all the factors in parallel.

We can conclude that the most common factors that will affect the success of e-commerce growth and adoption in Jordan are:

- Lack of customer awareness
- Tax burdens on IT and IT- Enabled services not revised or introduced.
- Inability to provide technical training and/or ICT security certification
- Proposed amendments to the E-transaction law and related regulations (Digital signature, E-transaction, E-payment, Privacy, Data Protection, etc.) are not passed.
- Lack of interest or willingness by institutions to implement ICT security standards.
- No areas that can be articulated for research work.
- Lack of funding for research.
- Lack of funding for ICT projects and training programs.
- Absence of participation between private and public sectors.

Future work includes further investigation of the level of customers awareness in Jordan. Moreover, identifying the impact of some demographic factors such as gender, age, and education of awareness. Furthermore, the impact of awareness on trust needs to be investigated.

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