

# Making Sense of E-Commerce Customers Awareness in a Developing Country Context: A Framework for Evaluation

Husam Yaseen<sup>1</sup>, Moh'd Alhusban<sup>2</sup>, Amal Alhosban<sup>3</sup> and Kate Dingley<sup>1</sup>

<sup>1</sup>School of Computing, University of Portsmouth, UK

<sup>2</sup>School of Media Arts and Technology, Southampton Solent University, UK

<sup>3</sup>Department of Computer Science, Engineering and Physics, University of Michigan Flint, USA

[Husam.yaseen@port.ac.uk](mailto:Husam.yaseen@port.ac.uk)

[Mohammed.al-husban@solent.ac.uk](mailto:Mohammed.al-husban@solent.ac.uk)

[Alhosban@umflint.edu](mailto:Alhosban@umflint.edu)

[Kate.Dingley@port.ac.uk](mailto:Kate.Dingley@port.ac.uk)

**Abstract:** The increasing number of Jordanian Internet users should naturally be reflected in e-commerce conversions. However, this is not the case. While social-media users in Jordan are becoming more engaged and involved in social-media transactions, e-commerce activities have not experienced a similar trend. This issue has been identified in the literature as the e-commerce awareness paradox, wherein customers are partially aware but are not engaged. This points to a missing link between different levels of awareness and e-commerce process engagement.

This paper presents the results of research that has investigated and evaluated the awareness of e-commerce among customers. In order to gain insight into customers' awareness, data were collected from 386 participants. The data analysis identified that partial and full customer awareness are critical factors in the adoption and success of e-commerce. Furthermore, four distinctive levels of awareness are identified, namely awareness of products and services (AOP/S), awareness of payment (AOP), awareness of delivery (AOD) and awareness of brand (AOB). This research contributes to the literature by providing a novel framework in which levels of awareness are mapped to four main processes of electronic commerce. The framework will be useful to e-commerce practitioners as a basis to evaluate prospective customers' levels of awareness, thereby to assist identifying precisely where they need to focus on the online acquisition journey.

**Keywords:** E-commerce, Jordan, Awareness, Payment, Partial Awareness, Full Awareness, Awareness of Products, Services, Awareness of Brand, Awareness of Delivery, E-commerce processes, Awareness evaluation.

---

## 1. Introduction

E-commerce is important to the economy of any country, whether developed or developing. It plays a critical role in economic development, and the Jordanian economy is no exception. A literature scan indicates that e-commerce studies are conducted in the context of developed countries with different cultures and infrastructures. However, the findings of these studies cannot be applied or generalised to the context of developing countries (Kapurubandara and Lawson, 2006). Therefore, it is important to consider the characteristics and nature of developing countries to understand the factors that influence customers to adopt e-commerce in such environments.

Jordan is a typical developing country, and it provides a suitable case for this research. Despite its small size, Jordan has the largest number of online start-ups and entrepreneurs in the Middle East region (Abu-Shamaa and Abu-Shanab, 2015). Moreover, Jordan shows a greater readiness for e-commerce compared to many other developing countries. The technological infrastructure in Jordan is robust (Al-Shboul and Alsmadi, 2010). The literature reveals that many studies have been carried out to examine the factors inhibiting the adoption of ICT and e-commerce. These studies have mainly examined e-commerce from a technological perspective (Al-Khaffaf, 2013; Faqir, 2013; Al Bakri, 2013; Abbad, Abbad, and Saleh, 2011; Halaweh, 2011). The focus of the studies in the extant literature has also been limited to identifying the challenges in adopting e-commerce, reviewing how Jordan has adapted to some of the challenges or recommending infrastructural changes to moderate the effects of these challenges. Thus, the literature has not focused sufficiently on the awareness of e-commerce.

Despite the major development and penetration of the Internet in Jordan, e-commerce is still lagging behind (Abbad et al., 2011). Therefore, this research is intended to study the role of e-commerce awareness in the situation. The focus of this study thus is to analyse the impact of the level of awareness on the adoption of e-

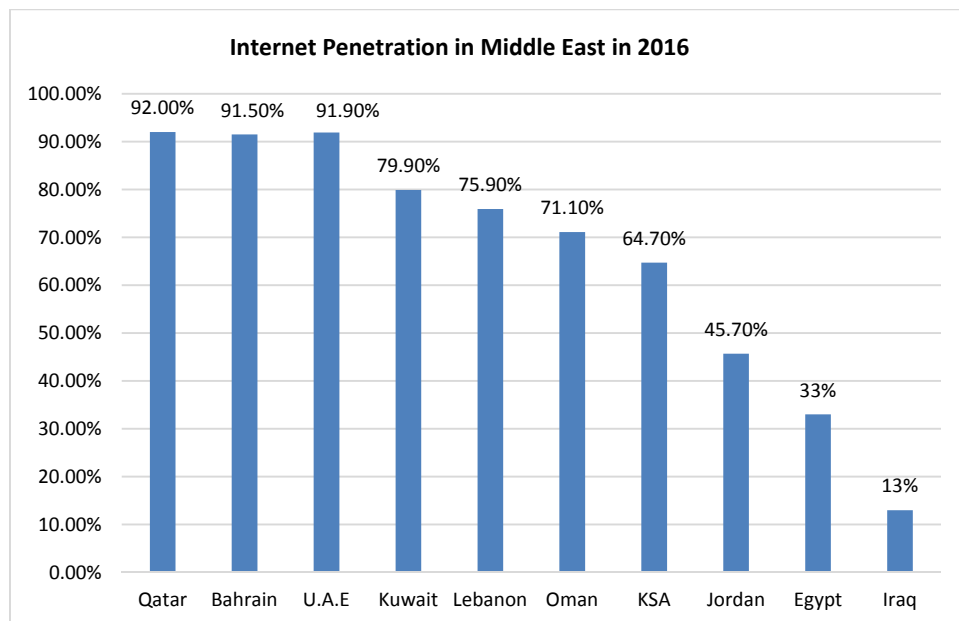
commerce. Since Jordan has a good e-commerce infrastructure and relatively sound indicators of e-readiness (AL-Majali et al., 2016), the research reported herein evaluates the level of customer awareness of e-commerce, especially focusing on the analysis of specific aspects of such consumer awareness, rather than taking a holistic approach.

## 2. Background to the Problem: E-Commerce Awareness in Jordan

There are distinctive economic features of Jordan, which have been shaped by international aid and financial settlement of the Jordanian market. Customers have begun to access newly produced and imported products and services through different means, such as social-media and various online platforms. It is vitally important to investigate how these products and services are accessed, how technology has facilitated that access and why Jordanian online customers are not fully engaged in the e-commerce process. Consequently, the issue identified in this research pinpoints the crucial role awareness plays in the adoption and success of e-commerce.

This research probes the question that if all e-commerce enablers are available in Jordan, why is it that Jordanian customers are not fully engaged in e-commerce related activities? The paper thus probes the concept of awareness as the main issue within the research. It examines: (i) the concept of e-commerce awareness; (ii) how awareness could be identified; (iii) where awareness occurs; and (iv) how awareness is perceived and understood.

If awareness of e-commerce is well understood, clearly defined through the e-commerce activity, this will help clarify what should be done and by whom. The research is also important in that the problem being faced by Jordanian e-commerce customers is also a widespread phenomenon which is equally prevalent in neighbouring countries in the Middle East. Figures 1 and 2 indicate that while the number of Internet users in the Middle East has increased (Figure 1), the number of e-commerce shoppers has not increased proportionately (Figure 2).



**Figure 1:** Internet Penetration in the Middle East (Internet Live Stats, 2017)

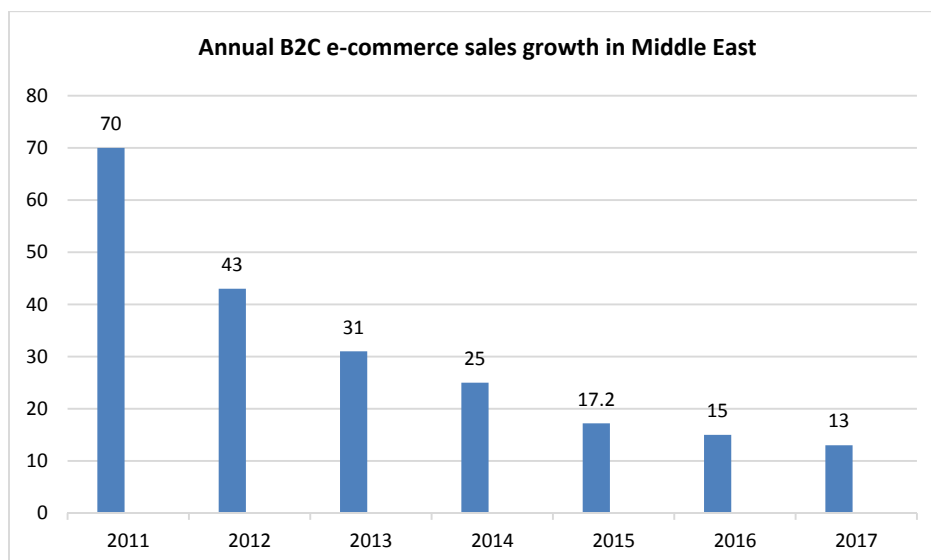


Figure 2: Annual B2C e-commerce sales growth in the Middle East (Statista.com)

Awareness has always been perceived holistically in the e-commerce context, and therefore most of the research conducted in this domain seems to link awareness to trust and familiarity (Najafi, 2012). In fact, the investigation of the literature reveals that awareness seems to be the predominant theme in e-commerce security. However, when it comes to the propensity to engage in e-commerce activity, Jordanian online users seem to be engaged in so-called social-media e-commerce, where the main social-media applications are used for the exchange of products and services (Al-Qirim, 2007). For example, Jordanians are using social media, especially Facebook, to exchange information about various products and services; some of their activities involve a successful agreement to sell or to buy. However, these deals are done offline. Therefore, engagement in social media is limited to gathering information, not actual purchasing. A new form of awareness has evolved after experiencing e-commerce activities over social media, and Jordanian customers are inclined to use the Internet more and more for shopping. E-commerce engagement is investable in this context.

However, that leads to another question: if users are engaged in social-media commerce, why they are not engaged in the typical e-commerce process. Contextual inquiry and observations of this phenomenon have inductively led to the view that this is an awareness dilemma. However, it is not the holistic awareness of e-commerce as a whole, but the awareness of the specific processes of the e-commerce model. Therefore, a new area of research has emerged. The holistic view of awareness does not seem to fit in with the universal e-commerce model. In e-commerce, the universal model entails a common online user journey. It usually begins with visiting a website, browsing a catalogue where products and services are offered and then making a purchase decision. Once the customer is happy, they would proceed to payment and then delivery. However, the journey does not end there – after delivery comes retention and the tendency to use the website again, thereby constituting a full online e-commerce cycle (Pavlou and Fygenson, 2006). Applying holistic awareness to this model does not accurately help in identifying where the problem lies. In fact, it has an adverse effect, whereby the process of e-commerce is mistakenly condemned to deterioration through lack of engagement.

This research aimed at investigating the awareness of e-commerce and its implications for the process of e-commerce. This research presumes that there are no technical, managerial or legal issues that hinder the development of a successful e-commerce model, and hence it hypothetically assumes that different levels of awareness have a major impact on the success or failure of the adoption of e-commerce in Jordan.

### 3. Literature Review

Awareness is the state or ability to perceive, to feel or to be conscious of events, objects or sensory patterns. In this level of consciousness, sense data can be confirmed by an observer without necessarily implying understanding. Generally, it is the state or quality of being knowledgeable about something (Najafi, 2012). Awareness represents the perception of e-commerce elements in the environment. It also represents comprehension of their meaning through an understanding of e-commerce technology, business models,

requirements, benefits and threats and projection of the future trends of e-commerce and its impact (Molla and Licker 2005 b). Rogers (1995) argued that awareness of an innovation and its benefits is an important initial stage that may affect the decision to adopt or reject the innovation. Once a customer has become aware of the potential of e-commerce and has made an initial adoption decision to shop online, his/her continuation to adopt is beyond entry-level (Participation phase). Therefore, the first and foremost phase of the e-commerce adoption process is awareness. According to Pavlou and Fygenon (2006), customers must obtain information about a product before purchasing. Therefore, gaining knowledge and understanding e-commerce is vital for customers' participation and a prerequisite for e-commerce engagement and adoption. Moreover, customers prefer information and knowledge about the products or services before shopping online (Laudon et al., 2009; Al-Majali, 2016). They need to compare product specifications and prices from different sites. However, if customers do not have enough information, this may lead to them avoiding buying online and continuing to buy from traditional stores (Dickson, 2000). Yaseen et al. (2016b) and Choudhury et al. (2001) argued that customers do not simply decide, but rather they consider two distinct stages: getting product information, and then purchasing the product. Therefore, if an adequate level of awareness is achieved, rejection and discontinuance are unlikely to result.

Customers' participation in e-commerce represents their involvement in exploring different aspects of e-commerce including decision making and evaluation. When a customer engages in an e-commerce activity the value of e-commerce will be acknowledged. Thus, based on her/his experience, decisions will be taken about more engagement. The purchasing decision-making process is defined as different situations faced by the buyer when carrying out the process of buying products or services that meet his desires, a process that consists of five phases: discrimination of problem; searching for information; evaluating alternatives; purchasing; and the evaluation phase after the purchase (Hawkins et al., 1995). Similarly, Kotler et al. (2009) describe the customer buying process of gathering information and decision-making activity as divided into several consequent steps: Problem identification; Information search; Alternatives evaluation; Purchasing decision; and Post-purchase behaviour.

Nevertheless, this process goes through several phases; it can be divided into three main phases (Altarifi, 2015; Sirakaya and Woodside, 2005; Roozmand et al., 2011). At the pre-purchase phase, the customer seeks to gather the required information about the online shopping. Next, comes the purchase phase, at which the customer completes the purchase decision-making process based on the information gained and his/her participation in purchasing certain products or services. Finally, the post-purchase phase, in which the customer engages in e-commerce. It starts directly after the purchase, at which time, the consumer experiences that the product or service satisfies his/her need and is willing to repeat the purchase (Butler and Peppard, 1998; Darley, 2010; Mihart, 2012). Therefore, if customers are initially exposed to positive stimuli during their Internet shopping experience, they are then more likely to engage in subsequent Internet shopping behaviour: they will browse more, engage in more unplanned purchasing, and seek out more stimulating products and categories (Perea y Monswé et al., 2004).

### 3.1 Previous e-commerce studies in Jordan

The previous assessment of the state of e-commerce readiness in Jordan has revealed that the country scores adequately high in terms of technical and professional preparedness. It, however, lacks the social impetus to match its e-commerce performance with its technical infrastructure. According to Al-Debei and Shannak (2005), Jordan exhibits adequate preparedness for efficient e-commerce technology. In this sense, the infrastructure to facilitate e-commerce, including telecommunication, government, and institutional support, the readiness of appropriate organisations and the Jordanian community culture is generally good (Al-Debei and Shannak, 2005).

An immense number of studies have explored the factors influencing online shopping in Jordan. Cognitive, economic, technological and socio-political variables have been found to have affected e-commerce adoption in the country (Al-Qirim, 2007). Indeed, Al-Majali (2016) found that customers' attitudes have a positive and significant influence on their intention to use online shopping. Yaseen et al. (2016a) and Abbad et al. (2011), on the other hand, conducted research into the same factors in Jordan, showing that security and trust, experience, enjoyment, language, legal issues and technology issues are limitations for e-commerce in less developed countries. Several researchers have tended to use different e-commerce models to determine what is influencing online shopping and e-commerce adoption. By applying the TAM model, Abu-Shamaa and Abu-

Shanab (2015) found that trust and all the TAM model constructs are influencing the Jordanian customers to buy online. Similarly, using the TAM model of Alalwan et al. (2016), found perceived usefulness, perceived ease of use, and perceived risk are the key factors influencing Jordanian customers' intention to adopt mobile banking.

Hasan (2016), argued that Arab websites, including Jordanian websites, have a major problem in terms of design; most of the websites are misleading as some information, such as delivery, is usually not displayed. Therefore, this will certainly negatively affect the customers in completing their purchases resulting in rejecting e-commerce adoption. As simple as that information would be, their existence will be important for the e-commerce purchase process. This finding was matched with the findings of Suki (2002) and Altarifi et al., (2015), whose studies showed that websites that are easily accessed in the purchasing process are considered a major motivation for making a purchase decision.

### *3.1.1 Lack of Trust*

Trust is an important model that is closely related to financial transactions. Trust becomes necessary when it is related to monetary value and more important when the transaction is conducted via a wireless network (Qasim and Abu-Shanab, 2016). It has proved to be a robust construct for predicting the intention to use a technology and one of the fundamental reasons for consumers' scepticism in terms of e-commerce (Alqatan et al., 2016). Consequently, lack of e-commerce trust was and is still one of the most critical aspects facing e-commerce in most countries. Trust is crucial because it affects various factors which are essential to e-commerce transactions, including security and privacy. According to Gefen (2000) and Najafi (2012), trust is a critical factor influencing the successful development of e-commerce. Additionally, Al-Debei et al., (2015) highlighted that online shopping in Jordan is determined by trust and perceived benefits. Therefore, lack of trust in e-commerce consider being the main reason for not doing online shopping, while building trust contributes positively to the success of online transactions (Jarvenpaa et al., 1999; Lee and Turban, 2001; Abu-Shamaa and Abu-Shanab, 2015; Panda and Swar, 2016).

### *3.1.2 Lack of Awareness*

Cognitive barriers in this context refer to characteristics of customers that affect their acceptance and adoption of e-commerce. Cognitive barriers include the customer's level of awareness, knowledge, skills and confidence. Also, represent their values, traditions, customs, religion and beliefs and knowledge. Knowledge and awareness about e-commerce are the first and foremost all aspects of e-commerce. Awareness of e-commerce refers to a customer's perception, comprehension, and projection of the benefits of e-commerce (Yaseen et al., 2017 a). A low level of ICT diffusion limits the level of e-commerce awareness, a factor that was taken for granted in the developed countries (Molla and Licker, 2005 a). In other words, lack of awareness of the potential benefits of e-commerce technology can hinder its growth. Therefore, it is essential for customers and businesses to acknowledge the potential benefits of e-commerce by developing a training strategy that actively transfers the benefits of e-commerce through promotional seminars, workshops. Scupola (2003), conducted a study to investigate the key factors that influence the adoption and implementation of e-commerce in SMEs. He found that among technology characteristics lack of awareness of the technology is a major barrier to a take-up of e-commerce in SMEs in Italy. Similarly, Khan et al. (2016) claimed that awareness of online shopping is the big challenge for e-commerce in the developing countries, in particular for people who are living in rural areas. They claimed that people could not be educated by themselves rather they need an education program about how to use e-commerce. In fairness, this is a reasonable argument, as without the tools and technology people will not even know what it is they cannot do. In Brunei Darussalam IT knowledge plays an important role in e-commerce adoption and overcoming the lack of knowledge of IT will lead to greater probability of its adoption (Looi, 2005).

## **4. Research Methodology**

A quantitative research methodology was used to collect evidence. This approach is suitable to capture the tendency, frequency and propensity to use e-commerce. The following sub-sections explain how the research was conducted.

### **4.1 Participants**

For the purposes of studying the level of customer awareness with respect to e-commerce in Jordan, the study sample comprised students, staff and employees from several schools and departments. The rationale for this

selective sample from universities is based on the joint financial model established between universities in Jordan and the banking sector. This model allows all stakeholders, from students, academics and administration staff, to conveniently access banking services, which would enable payment awareness, as well as the availability of shipping and delivery services within the context of universities. The study chose to target participants from two universities in the north and south of Jordan. Given the environmental setting of universities in Jordan, the selected universities contain a concrete financial model, whereby all financial transactions take place within the university using existing banking branches. This has contributed to creating an e-commerce-ready population. In addition, the university students and staff are mostly under 35. This participant age group remains a viable population for this study. Also, the fact that the questionnaires were distributed among diverse faculties of the university, ranging from teachers and students to staff, they also contain much-needed diversity in order to represent the Jordanian population at large.

## 4.2 Data Collection

A questionnaire-based survey was put together to investigate customers' level of awareness with respect to e-commerce. The questionnaire was divided into sections. The first questioned demographic characteristics such as age, gender and education, as well as English proficiency, Internet access, knowledge of the existence of e-commerce, and online purchasing experience. This was followed by the development of new levels of awareness instruments, awareness of product/services, payment methods, delivery methods and brands. The questionnaire was distributed to students and staff from different faculties – i.e. Computer Science, Law, Business, Psychology, Art, and Engineering. It was also distributed to employees from various departments – i.e. Accounting, Marketing, Public Relations, Hospitality and Student Affairs. The survey was conducted between June and July 2015 and was distributed to 452 participants. Out of 452 questionnaires distributed in the Arabic language, 420 were returned. Out of these 420 questionnaires, 34 were returned incomplete. Thus, 386 questionnaires were finally used for further analysis. This sample size is considered adequate for the analysis and is comparable to response rates in IS literature (Pinsonneault and Kraemer, 1993).

## 4.3 Survey Instrument

The questionnaire in this study has been developed over two phases. In the first phase, the questionnaire was designed using selected questions from previous research conducted in Brunei Darussalam (Jait, 2012). Jait's questionnaire was used to discover current awareness levels and to determine the factors that made Brunei citizens aware, or unaware, of the government e-service. The questions in the survey were modified to provide answers to the research questions and objectives of the study and thus used in the pilot study. The purpose of the pilot study was to assess the general awareness of Jordanians regarding e-commerce, and also to provide future direction for a full-scale study. The second phase of the questionnaire development was informed by the result of the pilot study findings and outcomes. The survey instrument, with questions using Likert scales, was developed accordingly. The questionnaire was designed with qualitative questions in mind. Hence, most survey questions, other than the general introductory questions, were based on a Likert Scale, with five gradual ordinal scales, graded 1 to 5. These measurements were then summarised into a percentage agreement number, assuming cardinality of responses.

## 4.4 Population description

This section gives a demographic breakdown of the questionnaire respondents in Jordan. It gives details of respondents' gender, age, educational level, Internet access, English language proficiency, knowledge of e-commerce existence and online purchasing experience in Jordan. Most of the respondents (80%) were below the age of 35, 53% were 18–24 years old, 24.9% were 25–34, 11.7% were 35–44, 8.5% were 45–54 and 1.8% were 50 years of age or older. From a gender perspective, 61% of the respondents were men, and 39% were women. With regards to their educational level, about three-quarters (76.4%) of our participants were university level students. Of this 76.4%, 25.1% of the respondents held or were studying for postgraduate degrees and 51.3% had an undergraduate degree, 12.2% had a degree from a college, 7.3% had completed secondary school, and 4.1% had no formal qualifications. Of the participants, 50% showed a good level of English language proficiency. The initial analysis revealed that 98% of the participants were accessing the Internet on a daily basis.

## 4.5 Data Analysis and Findings

To examine the internal consistency and the validity of the questionnaire questions, the reliability of the scales was considered based on the computation of the alpha coefficient (Cronbach Alpha). Alpha is considered an

important concept to evaluate assessments and questionnaires in order to add validity and reliability to the data interpretation. The value of the Alpha coefficient ranges from 0 to 1 and plays an important role in describing the reliability of the factors extracted from the questionnaire (Cronbach, 1990). After analysing the total scale, a high value has been identified, which indicates a high internal consistency within the questionnaire as a whole. The Alpha values for all the dimensions was 0.844. According to Cronbach (1990), if the Cronbach Alpha is 0.5, it is a low and acceptable standard. All scales were found to exceed the minimum threshold of 0.5. Therefore, the higher the score, the more reliable the generated scale is.

Among the 386 participants, 98% used the Internet almost daily, with the use of social networks being the most common activity. Of the participants, 82% believed that e-commerce facilities exist in Jordan. However, only 24% ever used such facilities to make a purchase. This finding is in line with those of the pilot survey. Figures 4 and 5 illustrate the results.

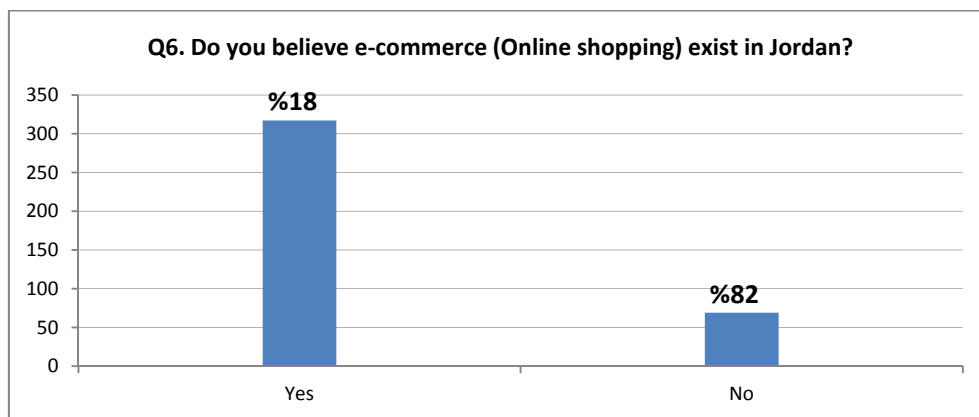


Figure 4: E-commerce existence in Jordan

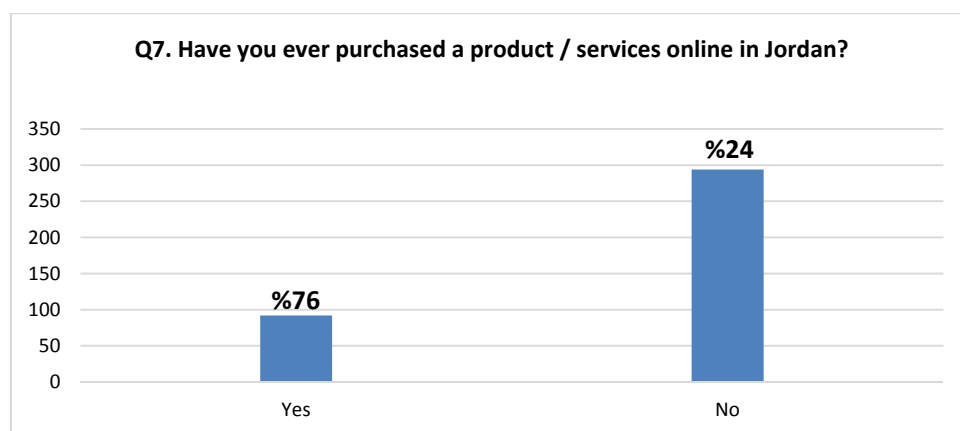


Figure 5: Percentages of product/services purchased Online

For the types of goods or services that these participants purchased online, which represents Awareness of Products/Services, only Airline Tickets and Books and Music received responses from participants who buy them exclusively through the web (see Figure 6). Overall, Airline Tickets, Books and Music, and Technology and Gaming products remain the most popular things to buy using e-commerce services. Clothing and Jewellery and Health and Beauty remain second-tier contenders in terms of popularity among consumers, for online purchasing. High turnover products, such as groceries, and high margin products such as white goods, were not considered for online purchases.



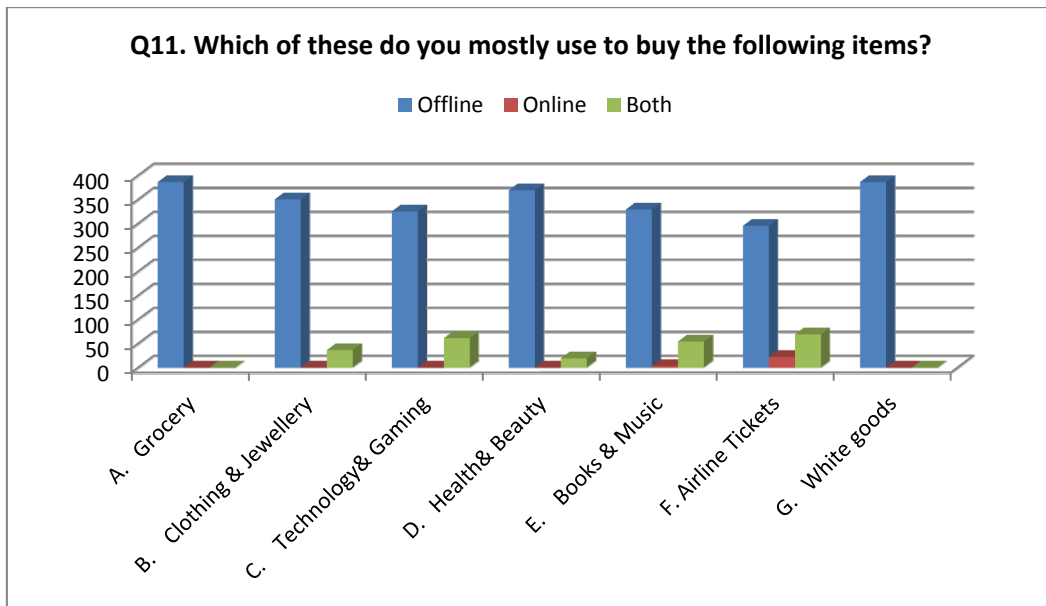


Figure 6: Shopping behaviour of participants

In terms of Awareness of Brand (AOB), it is found that the percentage agreement for familiarity with established e-commerce vendors and big businesses is generally low, averaging around 37% percent, with only OpenSooq, an online marketplace popular in the Middle East and North Africa, having a familiarity index of greater than 50%. This indicates a lack of interest or understanding in the Jordanian population to browse for products or services only, which is in contrast with the usage of social networks, which remains outstandingly popular. The results are illustrated in Figure 7.

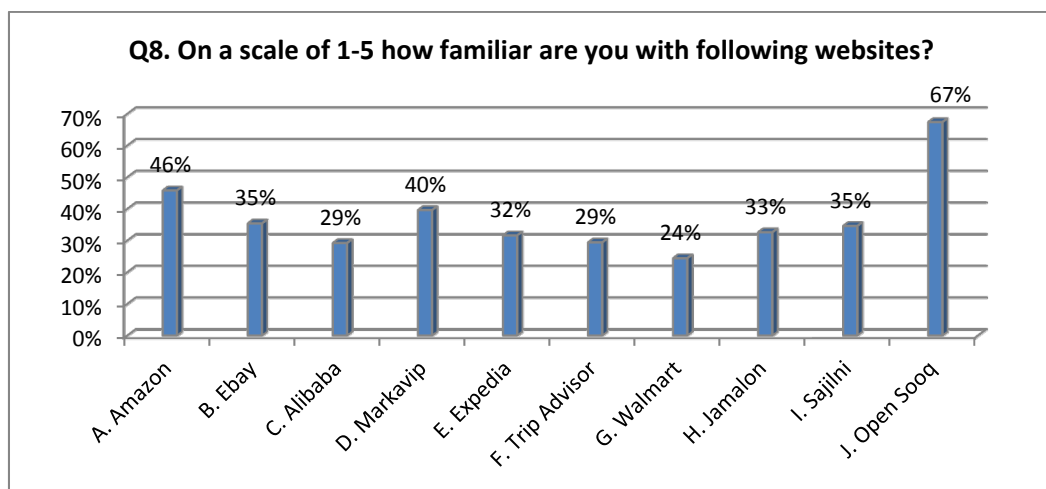


Figure 7: Familiarity of participants with websites

Analysing Awareness of Payment (AOP), a percentage agreement of 62% is found for acceptability of credit card, Visa card, Mastercard or another electronic method of payment. At the same level of 62%, the Awareness of Delivery (AOD) is found in terms of delivery at home or post office.

## 5. Discussion

Awareness is contextual and is rather a complex notion. Its multifaceted nature can influence many aspects of electronic commerce. However, it has always been perceived and defined in a holistic sense, and yet projected on certain domains, mainly but not restricted to marketing, such as brand awareness and core business functions. The customers' awareness is one of the critical factors related to the success of e-commerce. Therefore, an increasing emergence of awareness is one of the key performance indicators (KPI) of e-commerce. In the case of Jordan, the research has revealed a set of interesting results, showing that Jordanian customers acquire different levels of awareness at different phases throughout the e-commerce processes.

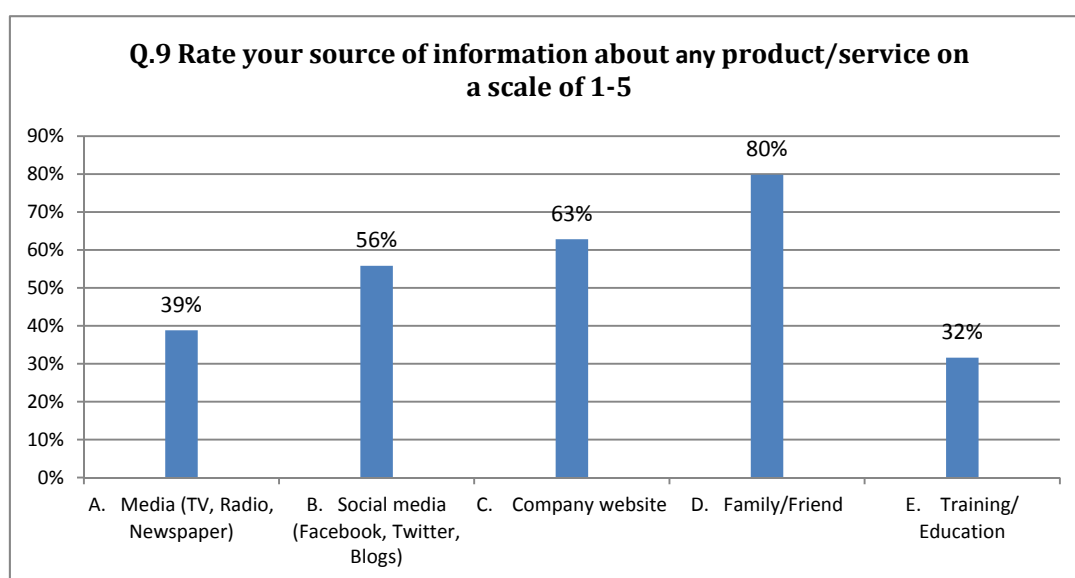


This research has examined the process of e-commerce as a set of necessary steps required to effectively and efficiently complete shopping activities.

As shown in Figure 4, participants seemed aware of the existence of e-commerce in Jordan; however, in Figure 5, data show that participants are not fully engaged, and just 24% of the sample have practised an e-commerce activity such as in buying an item or service online. The research was deductively designed to investigate at which point of the e-commerce activity and the user journey users have experienced an awareness problem. Accordingly, a set of predefined questions were constructed to target awareness over e-commerce processes. This group of questions (Q's 8 to 13) comprised independent variables measuring common themes of what could affect shoppers' engagement with the e-commerce process. These are browsing an online catalogue, search and finding products or services online. Table 1 shows the questions which aimed to investigate and understand participants' views on browsing and selecting products or services. The results in Figure 8 show that participants were engaged and aware of the process of finding information about certain products and services on the Internet and that 63 % of participants were aware of this process and they have found the process of finding products and services simple in an online catalogue. This has led to the identification of Awareness of Products/Services (AOP/S). AOP/S in e-commerce can be defined as a set of rules whereby the capability of customers to identify their need for a certain product or service can be shown. This includes knowing if the product or service is available online, being familiar, recognising the products, and being able to search for a certain product or service through the online catalogue; also, of having previous knowledge about the type of products they would like to purchase, and of their ability to distinguish and compare between different type of products or services.

**Table 1:** Survey Questions

Question	Statement
Q.6	Do you believe e-commerce (Online shopping) exists in Jordan?
Q.7	Have you ever purchased a product/service online in Jordan?
Q.8	On a scale of 1-5, how familiar are you with following websites?
Q.9	Rate your source of information about any product/service on a scale of 1-5.
Q.10	Please rate your usage to the following on a scale of 1-5.
Q.11	Which of these do you mostly use to buy the following items?
Q.12	E-commerce in Jordan has not taken off. This is due to a number of factors. On a scale of 1-5, how do you rate these factors on e-commerce adoption?
Q.13. C	I believe that I can purchase any product or service online.
Q.13.E	I believe that the information and services that have been provided by businesses were sufficient.
Q.13.G	I believe that I am able to pay by credit card, Visa card, Mastercard or another electronic method of payment.
Q.13.H	I believe any product I buy online can be delivered to home or post office.
Q.13.I	I believe I have the right to return the product I ordered and get my money back, without giving any reason.



**Figure 8:** Product/service Source of Information

Questions Q.8, Q.11 and Q.13.C have clearly shown some common features in terms of familiarity with the brand. This percentage (67%) of participants were prepared to buy online for a well-known brand. This was the case for specific products and services in Figure 7: 67% of participants were willing and inclined to buy from OpenSooq, due to the fact that OpenSooq is a nationally recognised brand. This has helped to bring some other themes, such as trust and brand recognition, into the data analysis, or that this decision could have been impacted by prior experiences. Moreover, Question 8 has shown that participants were more inclined to buy recognisable brand websites on the Internet, and this was supported by their intention to buy, or to their propensity to become fully engaged and converted into online shoppers. This trend has given rise to another level of awareness: AOB has emerged from common themes in the responses, and it is defined as the customers' level of consciousness, recognition, differentiation and familiarisation to a specific brand; also of being exposed to the brand through previous experience or recommendations and being able to identify the brand in the online catalogue.

Questions 12 and 13, with subsequent sub-questions, were designed to tackle the payment issue and verify whether this is a real barrier for the e-commerce process, or if the participants were aware of the different payment options available to them in order to complete an e-commerce transaction. Q.13.G was designed to measure participants' tendency to pay online, either using their credit cards or debit cards. The question also measured participants' willingness to use other payment methods (if they were introduced to such as PayPal, digital wallets or other payment methods). The decline in uptake on online payment (53%) indicates that there is a problem of AOP; lack of knowledge of current payment methods and options available within the Jordanian banking sector has also led to this level of awareness. AOP is defined as customers' knowledge, comprehension and understanding of the various payment options available online, including involved parties such as banks, and the ability to identify the benefits of choosing a certain payment method from among others.

Questions 13.H and 13.I were designed to target delivery of products, the question being aimed at identifying issues in awareness regarding this e-commerce process. It was noted from the data in Table 2, that delivery presents a serious concern for shoppers, especially those located outside the capital Amman. Our definition of this level of awareness is the customer's recognition of all aspects related to their products and services online delivery, including prices, delivery time and product tracking, as well as their ability to identify the different services provided by various delivery agencies and being able to choose the appropriate delivery mechanism to deliver their products or services.

**Table 2:** Participants' level of Agreement and Disagreement

Statement (s)	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q.13.C. I believe that I can purchase any product or service online.	34%	55%	9%	2%	0%
Q.13.E. I believe that the information and services that have been provided by businesses were sufficient.	16%	70%	13%	1%	0%
Q.13.G. I believe that I can pay by credit card, Visa card, Mastercard or another electronic method of payment.	1%	52%	26%	21%	0%
Q.13.H. I believe any product I buy online can be delivered to my home or a post office.	1%	58%	22%	19%	0%
Q.13.I. I believe I have the right to return the product I ordered and get my money back, without giving any reason.	45%	43%	12%	0%	0%

The study has identified new levels of awareness in relation to each e-commerce process in Jordan. Four primary levels of awareness have been identified, as per the survey results.

Awareness of the brands that are associated with the process of browsing e-commerce catalogues has resulted in multiple independent variables, constructed in the survey, explicitly reflecting the measurable levels of awareness at the beginning of the e-commerce process. This particular awareness has implications not only for the e-commerce process overall but with regards to aspects related to trust, brand identity and other marketing activities, and strongly contributes to the success of this initial e-commerce process.

The awareness of the products and services is defined as having sufficient knowledge of the products or services the customer is seeking to buy, as this level of awareness is perceived as the first point of engagement

in e-commerce activity. It defines the serious intention of buying. It is imperative for stakeholders and business offerings to consider this level of awareness in different areas of their business, such as designing the catalogue and the content strategy.

The third level of awareness that emerged from this study is the AOP, as an explicit area of investigation. Jordanian shoppers' propensity to buy online is impacted by their knowledge of online-payment systems: the collected data have shown variation in understanding of the current payment channels, especially the online-payment gateways.

The last level of awareness shows that there are different understandings and views on how purchased products or services could be delivered, accompanied by the fact that there is still a lack of delivery agents in the investigated case studies.

This research argues that awareness should not be perceived as a holistic entity that influences the engagement of e-commerce in Jordan, but rather as multiple degrees of awareness associated with different e-commerce processes, each with a different impact on the overall process. Each should be tackled individually by stakeholders.

### 5.1 Framework of e-commerce and level of awareness

The process of e-commerce is perceived as four interconnected processes collectively performed by online users to buy a product or service, as indicated in Figure 3: browse an online catalogue, choose a product or service, pay, and give delivery instructions. This would permit awareness to be accurately divided into four levels, each level associated with a process of an e-commerce transaction. Consequently, this mapping technique will help put awareness into perspective as to what e-commerce process needs to be tackled by the online business and appropriately help e-commerce practitioners to identify where they need to focus on the online acquisition journey.

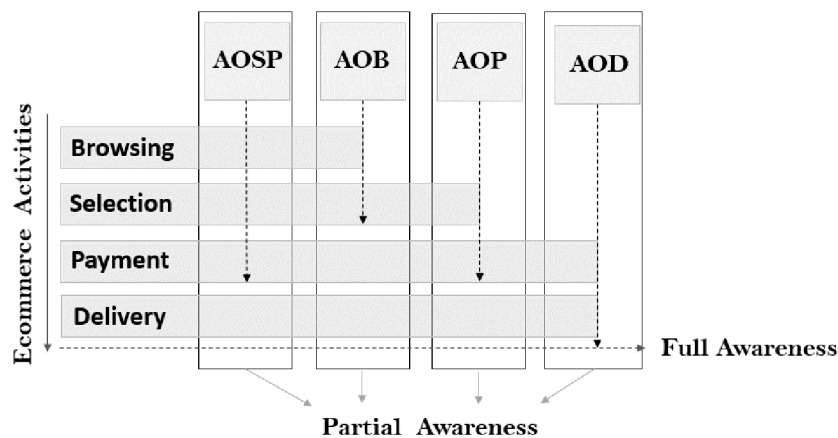


Figure 9: Framework for e-commerce and level of awareness

The framework in Figure 9 illustrates the refined findings from the research. Online customers experience different levels of awareness during every e-commerce activity. However, full awareness can only be experienced when customers complete the four activities, which engage the customer in participation in e-commerce. As indicated in Figure 9, when customers begin to browse an online catalogue and interact with the content, they manifest two different levels of awareness, namely awareness of service and product, and AOB; the clear majority of participants in the study demonstrated attributes related to two of those levels of awareness. However, when they are looking for a specific product or service, they would also be brand aware, and this is considered, in light of the findings of this paper, as partial awareness. When customers find what are they looking for and develop the intention to buy, this is usually accompanied by a decision-making process, which is the selection. After this, the customer would interact with payment systems, experiencing AOP. As this might be problematic in the Jordanian context, e-commerce practitioners need to place special focus on this level of awareness. After securing their payment, customers are expected to choose from a list of delivery agents where they will be mainly experiencing AOD.

When levels of awareness are projected on e-commerce activities, a new perspective is developed, and a greater emphasis is placed on the awareness identification process, which e-commerce practitioners and other stakeholders need to tackle.

## 6. Conclusion

E-commerce has become an integrated technology in our lives. However, due to lack of awareness, its adoption has lagged in many developing countries, including Jordan. Awareness of e-commerce refers to a customer's perception, comprehension and projection of the benefits of e-commerce. In this study, customers' awareness levels with respect to the adoption of e-commerce have been analysed, and we have identified that awareness plays a crucial role in the adoption of e-commerce.

As e-commerce is a user phenomenon, it is vital to understand how it is perceived by users and how awareness of different activities in e-commerce transaction is manifested. Sometimes, lack of engagement simply results from a lack of awareness, not knowing about the availability of resources needed to complete an e-commerce transaction successfully, and this likely to be the case with Jordanian shoppers. The decline of e-commerce uptake has always been blamed on technical and legal factors; however, since those are no longer barriers to hinder e-commerce adoption, the focus needs to shift radically to new areas of investigation, such as awareness.

Awareness in literature is holistically defined as a state of perception or knowledge of an event or situation, but when applied to e-commerce in this format it could be problematic. E-commerce can also be viewed and defined as the single process of buying products or services online. However, when the e-commerce process is perceived as four interconnected processes collectively performed by online users to buy a product or service, such as browsing a catalogue to choose a product or service, paying, and deciding delivery options, this permits awareness to be accurately divided into four levels. Each level is associated with a process of an e-commerce transaction. Consequently, this mapping technique will help put awareness into perspective as to what process of e-commerce needs to be tackled by the online business and appropriately help e-commerce practitioners to identify where they need to focus on the online acquisition journey.

This awareness can be improved by integrating four distinctive levels of awareness – awareness of products/services (AOP/S), awareness of payment (AOP), awareness of delivery (AOD) and awareness of brand (AOB) – are projected at e-commerce processes. For the successful adoption of e-commerce, both stakeholders and consumers must understand and integrate their e-commerce experience.

The framework proposed in this paper contributes to the IS body of research by providing a new quantitative mapping technique. It projects a non-integral view of awareness on the e-commerce processes, which has resulted in identifying four distinctive awareness levels.

## References

- Abbad, M., Abbad, R. and Saleh, M. (2011). Limitations of e-commerce in developing countries: Jordan case. *Education, Business and Society: Contemporary Middle Eastern Issues*, 4(4), pp.280-291.
- Al Bakri, A., 2013. An Overview of Information and Communication Technology (ICT) in Jordan: Review the Literature of Usage, Benefits and Barriers. *Journal: Education for Information*, vol. 21, no. 2, 3, pp. 181-194.
- Alalwan, A.A., Dwivedi, Y.K., Rana, N.P. and Williams, M.D., 2016. Consumer adoption of mobile banking in Jordan: examining the role of usefulness, ease of use, perceived risk and self-efficacy. *Journal of Enterprise Information Management*, 29(1), pp.118-139.
- Al-Debei, M.M. and Shannak, R.O., 2005. The current state of e-commerce in Jordan: Applicability and future prospects. *In Proceedings of the 5th IBIMA Conference on the Internet & Information Technology in Modern Organizations*. Cairo, Egypt (pp. 457-489).
- Al-Debei, M.M., Akroush, M.N. and Ashouri, M.I., 2015. *Consumer attitudes towards online shopping: the effects of trust, perceived benefits, and perceived web quality*. *Internet Research*, 25(5), pp.707-733.
- Al-Khaffaf, M., 2013. Factors Effecting E-Commerce Prevalence in Jordan. *The Macrotheme Review A multidisciplinary journal of global macro trends*, 2(3), pp.66-70.
- AL-Maaitah, T.A., Osman, A., Suberi, M., Dirar, A.M. and Fairouz, A.D., Review Study On The Security Of Electronic Payment Systems. *International Journal of Economics, Commerce and Management*. Vol. III, Issue 9.
- AL-Majali, M.M. and Bashabsheh, A.A., 2016. Factors that Affect Commercial Banks Customers Intention towards Electronic Payment Services in Jordan. *International Business Research*, 9(3), p.79.

- Al-Majali, M.M., 2016. Have Your Needs before entering to Queen Alia International Airport. *Dirasat: Administrative Sciences*, 43(1).
- Alqatan, S., Noor, N.M.M., Man, M. and Mohamad, R., 2016. An Empirical Study On Success Factors To Enhance Customer Trust For Mobile Commerce In Small And Medium-Sized Tourism Enterprises (Smtes) In Jordan. *Journal of Theoretical and Applied Information Technology*, 83(3), p.373.
- Al-Qirim, N., 2007. The adoption and diffusion of e-commerce in developing countries: The case of an NGO in Jordan. *Information Technology for Development*, 13(2), pp.107-131.
- Al-Shboul, M.A. and Alsmadi, I.M., 2010. Building an e-Commerce Infrastructure in Jordan: Challenges and Requirements. *International Journal of Interactive Mobile Technologies (IJIM)*, 4(4), pp.18-24.
- Altarifi, S., Al-Hawary, S.I.S. and Al Sakkal, M.E.E., 2015. Determinants of E-Shopping and its Effect on Consumer Purchasing Decision in Jordan. *International Journal of Business and Social Science*, 6(1).
- Al-Zoubi, A.A.K., 2016. B2C E-Commerce in the Banking Industry: The Adoption Commercial Banks in Jordan. *International Business and Management*, 13(2), pp.7-11.
- Butler, P. and Peppard, J., 1998. Consumer purchasing on the Internet: Processes and prospects. *European management journal*, 16(5), pp.600-610.
- Chen, Z. and Dubinsky, A.J., 2003. A conceptual model of perceived customer value in e-commerce: A preliminary investigation. *Psychology & Marketing*, 20(4), pp.323-347.
- Choudhury, V., Karahanna, E. and Dumm, R., 2001. The Relative Advantage of Electronic Channels: A Conceptual and Operational Definition. *Pavlou, PA and Fygenson, M. (2006) Understanding and predicting electronic commerce adoption: An extension of the theory of planned behaviour. MIS Quarterly*, 30(1), pp.115-143.
- Cronbach, L.J., 1949. *Essentials of psychology testing*. New York: Harper & Row.
- Darley, W.K., Blankson, C. and Luethge, D.J., 2010. Toward an integrated framework for online consumer behavior and decision making process: A review. *Psychology & marketing*, 27(2), pp.94-116.
- Dash, S. and Saji, K.B., 2008. The role of consumer self-efficacy and website social-presence in customers' adoption of B2C online shopping: an empirical study in the Indian context. *Journal of International Consumer Marketing*, 20(2), pp.33-48.
- Dickson, M.A., 2000. Personal values, beliefs, knowledge, and attitudes relating to intentions to purchase apparel from socially responsible businesses. *Clothing and Textiles Research Journal*, 18(1), pp.19-30.
- Faqir, R.S., 2013. Cyber Crimes in Jordan: A Legal Assessment on the Effectiveness of Information System Crimes Law No (30) of 2010. *International Journal of Cyber Criminology*, 7(1), p.81.
- Ganguly, B., Dash, S.B., Cyr, D. and Head, M., 2010. The effects of website design on purchase intention in online shopping: the mediating role of trust and the moderating role of culture. *International Journal of Electronic Business*, 8(4-5), pp.302-330.
- Gefen, D., 2000. E-commerce: the role of familiarity and trust. *Omega*, 28(6), pp.725-737.
- Gefen, D., Karahanna, E. and Straub, D.W., 2003. Trust and TAM in online shopping: an integrated model. *MIS quarterly*, 27(1), pp.51-90.
- Halaweh, M., 2011. Adoption of E-commerce: Understanding of Security Challenge. *The Electronic Journal of Information Systems in Developing Countries*, 47.
- Hasan, L., 2016. Key Design Characteristics for Developing Usable E-Commerce Websites in the Arab World. *Informing Science: the International Journal of an Emerging Transdiscipline*, 19,253-275.
- Hawkins, D., Best, R. and Coney, K. (1995). *Consumer behavior: Implications for Marketing Strategy*. 6th ed. Chicago: Irwin.
- Internet Users by Country. 2016. - *Internet Live Stats*. (2017). [online] Internetlivestats.com. Available at: <http://www.internetlivestats.com/internet-users-by-country/> [Accessed 18 Feb. 2017].
- Jait, A., 2012. Government e-services delivery requires citizens awareness: the case of Brunei Darussalam (Doctoral dissertation, © Adam Jait). *Loughborough University- UK*.
- Jarvenpaa, S.L., Tractinsky, N. and Saarinen, L., 1999. Consumer trust in an internet store: a cross-cultural validation. *Journal of Computer-Mediated Communication*, 5(2).
- Kapurubandara, M. and Lawson, R., 2006. Barriers to Adopting ICT and e-commerce with SMEs in developing countries: an Exploratory study in Sri Lanka. *University of Western Sydney, Australia*, pp.2005-2016.
- Kotler, P., Keller, K., Koshy, A. and Jha, M. (2009). *Marketing management*. 13th ed. New Delhi: Pearson Prentice Hall.
- Laudon, K.C.T., Laudon, C.G.C., Traver, C.G., Janal, D.S.D.S., Schwartz, E.S., Griffith, V., Ransdell, E., Curry, S., Montero, D., Piccinini, D. and Bannan, K., 2009. *E-commerce: negocios, tecnología, sociedad*. Pearson Educación,.
- Lee, M.K. and Turban, E., 2001. A trust model for consumer internet shopping. *International Journal of electronic commerce*, 6(1), pp.75-91.
- Lim, K.H., Sia, C.L., Lee, M.K. and Benbasat, I., 2006. Do I trust you online, and if so, will I buy? An empirical study of two trust-building strategies. *Journal of management information systems*, 23(2), pp.233-266.
- Looi, H.C., 2005. E-commerce adoption in Brunei Darussalam: A quantitative analysis of factors influencing its adoption. *Communications of the Association for Information Systems*, 15(1), p.3.
- Mihart, C., 2012. Impact of integrated marketing communication on consumer behaviour: effects on consumer decision-making process. *International Journal of Marketing Studies*, 4(2), p.121.
- Molla, A. and Licker, P.S., 2005a. eCommerce adoption in developing countries: a model and instrument. *Information & management*, 42(6), pp.877-899.

- Molla, A. and Licker, P.S., 2005b. Perceived e-readiness factors in e-commerce adoption: An empirical investigation in a developing country. *International Journal of Electronic Commerce*, 10(1), pp.83-110.
- Najafi, I., 2012. The role of e-commerce awareness on increasing electronic trust. *Life Science Journal*, 9(4), pp.1487-1494.
- Panda, R. and Swar, B.N., 2016. Electronic Retailing: A Review of Determinants of 'Online Shopping Intentions' in India. *Indian Journal of Science and Technology*, 9(15).
- Pavlou, P.A. and Fygenson, M., 2006. Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS quarterly*, pp.115-143.
- Pavlou, P.A., 2003. Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International journal of electronic commerce*, 7(3), pp.101-134.
- Perea y Monsuwé, T., Dellaert, B.G. and De Ruyter, K., 2004. What drives consumers to shop online? A literature review. *International journal of service industry management*, 15(1), pp.102-121.
- Pinsonneault, A. and Kraemer, K., 1993. Survey research methodology in management information systems: an assessment. *Journal of management information systems*, 10(2), pp.75-105.
- Qasim, H. and Abu-Shanab, E., 2016. Drivers of mobile payment acceptance: The impact of network externalities. *Information Systems Frontiers*, 18(5), pp.1021-1034.
- Qin, Z., Li, S., Chang, Y. and Li, F., 2014. *E-Commerce Strategy*. 1st ed. Berlin, Heidelberg: Springer Berlin Heidelberg.
- Rogers Everett, M., 1995. *Diffusion of innovations*. New York, 12.
- Roosmand, O., Ghasem-Aghaee, N., Hofstede, G.J., Nematbakhsh, M.A., Baraani, A. and Verwaart, T., 2011. Agent-based modeling of consumer decision making process based on power distance and personality. *Knowledge-Based Systems*, 24(7), pp.1075-1095.
- Scupola, A., 2003. The adoption of Internet commerce by SMEs in the south of Italy: An environmental, technological and organizational perspective. *Journal of Global Information Technology Management*, 6(1), pp.52-71.
- Sirakaya, E. and Woodside, A.G., 2005. Building and testing theories of decision making by travellers. *Tourism management*, 26(6), pp.815-832.
- Statista. Annual B2C e-commerce sales growth in Middle East and Africa from 2011 to 2017. *Statista*. Accessed 18 February, 2017. Available from <https://www.statista.com/statistics/261261/b2c-e-commerce-sales-growth-in-middle-east-and-africa/>
- Suki, N.B.M., Ahmad, M.I. and Thyagarajan, V., 2002. Motivation and concern factors for internet shopping: A Malaysian perspective. *The Electronic Journal for E-commerce Tools and Applications*, 1, pp.1-18.
- Valmohammadi, C. and Dashti, S., 2016. Using interpretive structural modeling and fuzzy analytical process to identify and prioritize the interactive barriers of e-commerce implementation. *Information & Management*, 53(2), pp.157-168.
- Yang, S., Chen, Y. and Wei, J., 2015. Understanding consumers' web-mobile shopping extension behavior: A trust transfer perspective. *Journal of Computer Information Systems*, 55(2), pp.78-87.
- Al-Qudah, O.A. and Ahmad, K., 2014, November. The roles of culture in online shopping to enhance e-commerce in Jordan. In *Information Technology and Multimedia (ICIMU), 2014 International Conference on* (pp. 113-117). IEEE.
- Abu-Shamaa, R. and Abu-Shanab, E., 2015, February. Factors influencing the intention to buy from online stores: An empirical study in Jordan. In *GCC Conference and Exhibition (GCCCE), 2015 IEEE 8th* (pp. 1-6). IEEE.
- Yaseen, H., Dingley, K. and Adams, C., 2016a, October. An empirical study of factors influencing e-commerce customers' awareness in Jordan. In *Information Society (i-Society), 2016 International Conference on* (pp. 63-67). IEEE.
- Yaseen, H., Alhusban, M.D., Dingley, K. and Alhosban, A., 2016b. Facilitating E-Commerce in Jordan: A Qualitative Analysis. *International Journal of Digital Society (IJDS)*, Vol:7, Issue 4 (pp. 1206-1213).
- Khan, M., Xu, X., Dou, W. and Yu, S., 2016, December. OSaaS: Online Shopping as a Service to Escalate E-Commerce in Developing Countries. In *High Performance Computing and Communications; IEEE 14th International Conference on Smart City; IEEE 2nd International Conference on Data Science and Systems (HPCC/SmartCity/DSS), 2016 IEEE 18th International Conference on* (pp. 1402-1409). IEEE.