# Evaluating the online shopping behavior among Egyptian college-educated community

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## Abstract

**Purpose** – In a dynamic environment, understanding the consumer's behavior in an online market is critical for the development of online retailers' strategies. In Egypt, although the number of internet users is growing rapidly, online shopping is at an early stage of development. In addition, there is a lack of knowledge about the behavior of Egyptians toward online shopping and the factors that influence their behavior.

**Design/methodology/approach** – To demonstrate the applicability of the technology acceptance model (TAM), this research applies an extended TAM to analyze the factors that impact the Egyptian consumers' online shopping behavior. Structural equation modeling is used for fitting the data and testing the hypothesis.

**Findings** – Findings revealed that perceived enjoyment, perceived ease of use, social norm and perceived risk have significant influences on the respondents to shop online; while the site language effect was insignificant.

**Research limitations/implications** – This study has mainly four limitations. The first concerning the sample, it should cover diversified areas other than Cairo and should include respondents from different education levels. Future studies may consider using a national sample of current and potential online shoppers to be able to generalize the results. Second, the questionnaire should include questions about the levels of education and the level of income to analyze if they influence actual online shopping. Third, although the benefits of using online surveys such as reducing the costs and time and collecting data more accurately compared to paper-pencil surveys, the low response rate may lead to non-response bias. Finally, constructs such as website content, design, and response could be added to the TAM to examine different aspects of website functionalities on the actual shopping.

**Originality/value** – Considering that online shopping is still at the early stage of development in Egypt, there is a need to examine the factors that influence the behavior of Egyptian consumers while adopting online shopping. To fill in this gap, this study is analyzing the factors impacting the consumers' decisions to shop online by examining a sample of students from the Faculty of Economics and Political Science, Cairo University. This study will contribute to providing an empirical application of the TAM on the Egyptian consumers in addition to, enhancing the knowledge of electronic retailers about the factors that drive consumers toward shopping online.

**Keywords** Electronic commerce systems, Online consumer behaviour,
Technology acceptance model (TAM), Online social norm, Actual online shopping, Egypt,
Structural equation modelling (SEM)

**Paper type** Research paper

## 1. Introduction

In competitive markets, companies need to be innovative to attract and maintain customers. The internet is offering businesses innovative methods to manage information and better serve their customers. In the USA, Europe and Asia, the growth rate of online sales are exceeding that of traditional ones; and it is predicted to continue increasing. Yang *et al.* (2007) believe that the retail industries have witnessed alteration of consumer behavior from physical stores to online markets and that the shopping landscape has radically changed because businesses in developed countries have realized the power of the internet.

Consumer's behavior is affected by numerous economic, cultural, physiological and environmental factors. The shift in consumers' behavior toward using online markets to fulfil their needs created the demand to analyze the factors that impact their behavior in this market, especially which the online consumers not only react but also interact with it. Gopal and Jindoliya (2016) and Heijden (2012) affirm that the continuous evolution of new technologies and business models has made the study of the behavior of online consumers more challenging.

The success of Amazon and Alibaba have motivated and maybe urged other companies to alter their business from the brick-and-mortar model to the brick-and-click model. According to Kearney (2015), the sales of electronic retail were about $840bn in 2014 surpassing the sales of 2013; and it was estimated to increase to $1,506bn in 2018. According to McKinsey Global Institute (2013), China has made more than $190bn in 2012; and it is predicted to reach $650bn in 2020. The continuous sales increment indicated that electronic retails have enormous market potential. Regardless the flourishing of online sales on a global scale, the Boston consulting group published a report in 2012 declaring that online shopping in Egypt is in its early stage on both the demand and supply side and that in 2011 less than 1 per cent of Egyptians and 2 per cent of internet users shopped online (The Boston Consulting Group, 2012).

The results of Ahmar *et al.* (2016) confirmed that the lack of awareness, computer literacy, internet accessibility and cost, risk and language are the main challenges associated with the spread of shopping online in developing countries. Al-Mobaireek (2013) developed a survey based on a sample from Egyptian consumers; the results revealed that online shopping ranks last compared to other online activities for the Egyptian consumers and those they mainly use the internet for surfing and e-mails.

The number of online shoppers is expected to grow as the level of internet penetration increases. Worldwide, the internet penetration rate has grown from 52.17 per cent in 2016 to 57.3 per cent in 2019. In Egypt, the number of internet users is increasing rapidly; in March 2017 Egypt ranked second within African countries with 34.82 million internet users. Egypt business directory published that the internet penetration in Egypt is 37 per cent and the average time spent daily by Egyptians online is four hours. Electronic commerce penetration is equal to 16 per cent (Egypt Business Direct, 2017). Internet penetration reached 48.7 per cent in 2019 and it is expected to continue to increase at a high pace during the next few years (MICT, 2019). Despite a large number of internet users, Egypt ranked 113th worldwide on UNCTAD B2C E-Commerce Report 2018.

Otlob.com, a truly home-grown Egyptian enterprise established in 1999, is considered an electronic commerce pioneer. Otlob started its services with two employees and ten listed restaurants. In 2012, Otlob's website represented 5-7 per cent of the food delivery market in Egypt. Otlob.com is no longer alone in the Egyptian online shopping market. Many web-based companies such as Nefsak.com, Jumia.com and Souq.com have joined it, which indicates the tremendous opportunity of e-commerce in Egypt. The understanding of the factors that affect the online consumers' behavior and their acceptance of online shopping is

critical for companies, especially for web-centric ones, to meet their customers' needs and to be able to compete in a turbulent environment. Hence, there is a necessity to analyze factors affecting consumers' online behavior to provide knowledge for companies to foster user acceptance and usage.

Considering that online shopping is still at an early stage of development in Egypt, there is a need to examine the factors that influence the behavior of Egyptian consumers while adopting online shopping. To fill in this gap, this study is analyzing the factors impacting the consumers' decisions to shop online by examining a sample of graduate and undergraduate students from the Faculty of Economics and Political Science, Cairo University. This study will contribute to providing an empirical application of the TAM on the Egyptian consumers in addition to, enhancing the knowledge of electronic retailers about the factors that drive consumers toward shopping online.

The paper is organized as follows. Section 2 briefly discusses the evolution of the TAM, whereas Section 3 presents the suggested model and its hypotheses. Section 4 handles the data analysis and model fitting using SEM. Section 5 discusses the main results. Finally, Section 6 concludes the research and states the limitations.

## 2. The technology acceptance model
### 2.1 Literature review
The adoption of information systems (IS) can provide enormous benefits; however, when several companies tried introducing new systems in their processes it failed. Davis (1989) proposed TAM to elucidate the behavior of individuals in adopting new IS. According to the original model, a user's attitude toward using a new system is mainly influenced by the perceived usefulness (PU) and the perceived ease of use (PEOU) of the system. Where PU explains the degree to which a person believes that using a system will be useful and PEOU clarifies the degree to which a person believes that the adoption of the new system will require effort. As much as the system is perceived to be easy and useful the more the attitude toward using it will be positive.

TAM has evolved over time and many researchers have extended it. For instance, Davis (1993) added the perceived enjoyment (PE) construct presenting the degree to which people enjoy the usage of a new IS. Empirical results proved that PE has a positive impact on the intention to use new IS. Venkatesh and Davis (1996) removed the attitude and studied the impact of PEOU and PU on the intention of using a system directly. As people are influenced by the opinions of the surrounding people. Venkatesh and Davis (2000) and Venkatesh et al. (2003) added the person's perception of what people around him will think if he/she behaves in a certain way to the model as social norm construct. Their results revealed that the social norm has a significant direct effect on the intention and indirectly through PU.

Pavlou (2003) extended the TAM by adding a perceived risk construct. Empirical results proved that risk has a negative impact on the intention to use new IS. Klopping and McKinney (2004) modified the TAM by testing the impact of different constructs directly on actual use; and they found that PU is the key aspect of actual online shopping.

The model has been applied and validated by many researchers because of its simplicity and applicability (King and He, 2006; Lai, 2017; Ma and Liu, 2004; Schepers and Wetzels, 2007). Furthermore, the model has been applied for understanding consumers' intentions to use the internet as a shopping medium and to investigate the online consumer's behavior by many researchers both in developed and developing countries (Albarq, 2014; Faqih, 2013; Jin et al., 2015; Heijden, 2012; Yang et al., 2007). Previous research that examined different use of the TAM in developed and developing countries (Gopal and Jindoliya, 2016; Lim and Ting, 2012; Yadav and Mahara, 2019; Wei et al., 2018; Zhou et al., 2007) agreed that for a different

context there is a need for closer examination because of differences in culture and many other factors.

## 3. The proposed model and its hypotheses

*3.1 Perceived usefulness, perceived ease of use and perceived enjoyment*

For online shopping, PU is described as the consumer's perception that shopping through websites will improve the performance of the shopping process; for example, searching for information, comparing prices and placing and tracking orders through the web will increase the efficiency and effectiveness of the process of shopping. Online sites that provide useful services to assist the customers in making better shopping decisions will be perceived useful, and hence, lead to the development of positive attitudes toward online shopping (Kim *et al.*, 2004). Also, Zarrad and Debabi (2012) related PU to the advantages that individuals receive from the usage of the internet like the reduction of time and effort needed in the process of shopping.

PEOU refers to the degree of how consumers believe that a website can help them to shop online with less effort; if users can easily handle the process of online shopping and do not require extra skills, they are more willing to use the internet to perform the orders. Furthermore, PE is the level of enjoinment that consumers feel during an online purchase from a specific website. The more the person enjoys shopping from a website, the more likely he/she will spend time surfing and online shopping. Previous empirical research, for example, the work of Johar and Awalludin (2011), Kim (2012) and Li (2016) concluded that PU, PEOU and PE have a positive influence on consumers' intentions to shop online and encourage the online shopper to browse more, which increases the likelihood of purchase.

Inspired by the work of Klopping and McKinney (2004) the current authors decided to test the effects of different constructs on actual online shopping behavior (ASHOP). Hence, the proposed model assumes that there are positive relationships between each of PU, PEOU, PE and ASHOP. The following hypotheses will be tested:

*H1.* There is a positive relationship between PU and ASHOP.

*H2.* There is a positive relationship between PEOU and ASHOP.

*H3.* There is a positive relationship between PE and ASHOP.

Next, TAM integrates a causal relationship between PEOU and PU, advocating that an easy system is perceived to be more useful. Therefore, the proposed model assumes that PEOU has an indirect effect on ASHOP through PU:

*H4.* There is a positive relationship between PEOU and PU.

*3.2 Perceived risk*

The online market involves more uncertainties and risks than traditional ones; consumers perceive risk as they face uncertainty and undesirable consequences. Kim *et al.* (2009) described the perceived risk from shopping online as the potential negative outcomes the consumers may face from using the electronic transaction. Li and Huang (2009) classified the risk associated with the process of online shopping to the risk associated with products/services and online transaction risks. Products/services' risk could be from the possibility that the purchased products/services do not provide the desired benefits or are not delivered at the specified time. The risk associated with online transactions could be because of the perception of insecurity regarding online credit card usage or misuse of personal data.

Therefore, our empirical application includes both types of risk. The risk associated with displaying personal information or credit card data and the risk associated with the products/services such as not receiving the products in the specified time by the site or the quality of the products is not matching the displayed product on the site. The higher the perceived risk, the more the consumer will prefer to use traditional methods to purchase products/services. Previous research confirmed that the perceived risk has a negative effect on consumers' intentions to online shopping (Choi and Lee, 2003; Dabrynin and Zhang, 2019; Kim, 2012; Pelaez *et al.*, 2019). Consequently, it is assumed that actual shopping behavior will be negatively influenced by customers' perception of risk associated with their activities online. Accordingly, our assumptions include:

*H5.* There is a negative relationship between RISK and ASHOP.

Moon and Kim (2001) recommended that improving the design of websites would minimize the risk perceived by an online shopper. Hence, the proposed model includes the hypothesis that there is a positive relation between the PEOU and RISK:

*H6.* There is a positive relationship between PEOU and RISK.

### 3.3 Subjective norm

Subjective norm denotes users' perception of what people around them will think if they behave in a certain way. Previous empirical research confirmed that SN tends to be a strong influential factor especially in the early stages of innovation implementation when users have limited experience (Schepers and Wetzels, 2007; Yu and Wu, 2007). To test the influence of family and friends on consumers, as well as the online social influence imposed via members on its online social networks, the following assumption is added:

*H7.* There is a positive relationship between SN and ASHOP.

*H8.* There is a positive relationship between Online SN and ASHOP.

### 3.4 Internet experience

Venkatesh and Bala (2008) extended the TAM by adding experience to moderate the relationship between perceived ease of use and perceived usefulness. They believe that the influence of perceived ease of use on the perceived usefulness will increase as experience with the system increases. Also, the results of Amoroso and Hunsinger (2009) and Zarrad and Debabi (2012) proved that there is a positive relationship between time spent on the internet and PEOU. In addition, Gefen (2003) assumed that internet experience is negatively related to perceived risk. Accordingly, the authors hypothesize that internet experience has a positive impact on PEOU and can influence RISK:

*H9.* Internet experience positively affects PEOU.

*H10.* Internet experience negatively affects RISK.

### 3.5 Foreign sites

The study of Al-Mobaireek (2013) showed that one of the main barriers preventing online shopping in Arab developing countries is that there are not enough successful Arabic websites and most websites are foreign. In developing countries, site language could be a

factor affecting PEOU; consumers may prefer shopping from sites written in the Arabic language due to the lack of knowledge of other languages. To test the effect of a site's language, the authors assume that Egyptian consumers do not prefer to shop from a foreign site:

*H11*.   Foreign site negatively affects ASHOP.

## 4. Research methodology
### *4.1 Data collection and validation*
Previous research confirmed that demographics play an important role in determining whether people use the internet or intend to shop online; they concluded that the online population is relatively younger, more educated and wealthier (Li and Zhang, 2002). Young generations tend to challenge themselves by accepting new technologies. They are more adaptable to changes in technology and they are more likely to perceive their benefits. Gad (2012) results showed that young Egyptians have a favorable attitude toward online shopping compared to the old generations.

Consequently, we decided to take the sample from young and educated people. A structured-questionnaire was developed using Google form. To prevent multiple responses, the questionnaire was sent through the official electronic mail of the faculty of Economic and Political Science to graduate and undergraduate students' database. The questions were close-ended and some of these questions' choices were limited to five-points Likert-Scale. The survey was sent in July 2016, and it was left open for almost six months. In total, 450 respondents answered the questionnaire from a total of 4,190 of which 2,811 were undergraduate students and 1,379 were graduate students. The response rate is 10.7 per cent. The authors tried to improve the response rate by following several methods suggested by Atif *et al.* (2012) starting the survey with its purpose, and emphasizing the privacy of the respondents. Also, several gentle reminders were sent.

SPSS was used for descriptive analysis, reliability testing and exploratory factor analysis. The respondents' age ranged from 18 to 50 years old. The majority, 90.4 per cent of the respondents is below the age of 30 years. 78.7 per cent of the respondents used the internet for more than three years, and 20.9 per cent used the internet from one to three years. In total, 46.7 per cent of the respondents spent more than five hours a day using the internet, 31.1 per cent used the internet from three to five hours a week, and 31 per cent used the internet from one to three hours a week. In total, 49.8 per cent of the respondents stated that they already shopped online.

Opinions regarding the minimum sample size have varied. Some researchers stated that with no missing data, reasonable sample size is about 150 respondents. However, others argue that the minimum sample size recommended is 200. On the other side, identifying the minimum sample size should be based on the complexity of the model, i.e. a sample of size 100 is the minimum for a model with five constructs and 150 for a model with seven constructs. Another way to identify the minimum sample size is based on the ratio of the sample size to the number of items in a model, the ratio should be at least 5:1 (Hair *et al.*, 2014; Kline, 2011).

To examine the factors that affect the actual online shopping behavior and re-purchase behavior, we analyzed the 224 responses that had already shopped online. The 224 responses satisfy the minimum sample size recommended by Hair *et al.* (2014) and Kline (2011).

For the respondents who already shopped online, the majority, 84.4 per cent of them were below the age of 30 years. 80.4 per cent of the respondents used the internet for more than

three years, and 18.8 per cent used the internet from one to three years. In total, 21.4 per cent of the respondents spent more than five hours a day using the internet, 46.4 per cent used the internet from three to five hours a week, and 31 per cent used the internet from one to three hours a week. In total, 80 per cent of the respondents stated that they usually shop online once per month, 3.1 per cent shopped from two to three times per month and 15.6 per cent shopped more than once a week.

In exploratory factor analysis (EFA), we observed the factor loadings of all observed variables. Items with factor load less than 0.5 were removed. Despite the authors' belief that the site's language would have a significant influence on the actual shopping behavior, the output of EFA leads to the deletion of this item. This could be because of the high level of education leading the acceptance of respondents to shop from foreign sites.

Some of the previous research assumes that the time spent online will increase the potential of online shopping and may reduce the perceived risk by consumers (Zhou *et al.*, 2007). The EFA led to removing the variables representing the time spent on the internet and as how long they used the internet, consistent with research that assumed that internet usage does not necessarily associate to an increase in the online transactions, consumers may use the internet only to search information about the goods that they want to buy and then do their purchases in physical stores (Ho *et al.*, 2007).

The output of the EFA yielded eight factors. These factors are EASY (5 items), RISK (5 items), ENJOY (3 items), USEFUL (4 items), REDUCE (2 items), SN (3 items), Online SN (2 items) and ASHOP (2items). The items of each factor and the related code are shown in Appendix A. The percentage distribution for each item is shown in Appendix B.

*4.2 Structural equation model and analysis of variables*
Structural equation modeling (SEM), using AMOS 5.0 was conducted to analyze the measurement and structural models. SEM allows researchers to estimate causal relationships among multiple independent and dependent constructs (Bogazzi and Yi, 1988; Erasmus *et al.*, 2015). SEM has the advantages of supporting latent variables that are unobservable variables; so, researchers use the observable indicators to estimate them in the model (Fornell, 1987; Gefen *et al.*, 2000). To examine the model fit and predictive capability of the theory of online buying behavior, SEM using maximum likelihood (MLE) technique was adopted. The hypotheses, presented in Table I, are tested by the SEM.

The initial structural model is presented in Figure 1. The initial model includes all the proposed factors influencing the actual shopping behavior. In the graphical form, observed variables are enclosed in rectangular shapes and latent constructs are enclosed in elliptical shapes. A hypothesized causal relation is presented by a directional arrow and the curved arrows indicate the covariance among variables.

The output of the SEM consists of seven factors impacting the actual shopping behavior (ASHOP) and explaining 62 per cent of the variance. Factors are USEFUL, REDUCE, EASY,

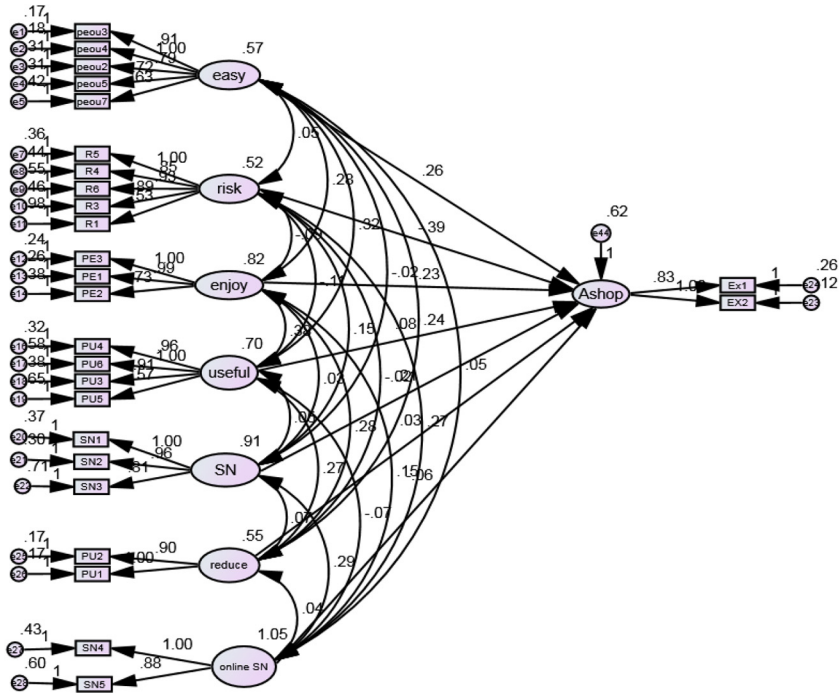| | |
|---|---|
| H1 | There is a positive relationship between PU and ASHOP |
| H2 | There is a positive relationship between PEOU and ASHOP |
| H3 | There is a positive relationship between PE and ASHOP |
| H4 | There is a positive relationship between PEOU and PU |
| H5 | There is a negative relationship between RISK and ASHOP |
| H6 | There is a positive relationship between PEOU and PR |
| H7 | There is a positive relationship between SN and ASHOP |
| H8 | There is a positive relationship between Online SN and ASHOP |

Table I.
The proposed
hypotheses tested by
SEM

ENJOY, SN, Online SN and RISK. Cronbach's alpha coefficient was used to check the reliabilities of the constructs. All constructs are having alpha greater than the recommended level (0.7). Table II represents estimates and the coefficient of Cronbach's alpha test for each factor and the items with their confirmatory factor loading.

The initial model explained 62 per cent of the variation for the actual shopping behavior. All the fit indices exceed the recommended cut-off level, demonstrating that the model fits the data well (Bogazzi and Yi, 1988). The fit indices are as follows: CMIN/df ratio = 1.61, the comparative fit index CFI = 0.937, the adjusted goodness of fit index AGFI = 0.838, incremental fit index IFI = 0.931, root mean square error approximation RSMEA = 0.052. Table III displays the unstandardized estimate, its standard error (S.E.) and the critical ratio (C.R.), which is the estimate divided by the standard error. Under the $p$ column, the probability value related to the null hypothesis is displayed where the three asterisks (***) indicate significance smaller than 0.001.

The results show a significant direct relationship between each of the following factors EASY, RISK, ENJOY, SN and ASHOP and an insignificant direct relationship between each of the factors USEFUL, REDUCE, Online SN and ASHOP. The authors thought that online interaction within the social network would have a positive direct impact on ASHOP; this hypothesis was rejected. On the other hand, the impact of Online SN on ASHOP is mediated by the RISK, ENJOY and SN factors.

In addition, the impact of USEFUL is mediated through the factors ENJOY and EASY. The outcomes also displayed a significant relationship between each of the pairs REDUCE and USEFUL, ENJOY and EASY. The impact of REDUCE on ASHOP is mediated through the factors ENJOY and EASY. Furthermore, there is a significant relationship between both

| Factors | Code | Confirmatory factor loading | Cronbach's alpha test |
|---|---|---|---|
| Perceived ease of use | EASY | | 0.873 |
| | POEU2 | 0.791 | |
| | POEU3 | 0.914 | |
| | POEU4 | 1 | |
| | POEU5 | 0.721 | |
| | POEU7 | 0.631 | |
| Perceived risk | RISK | | 0.758 |
| | R1 | 0.531 | |
| | R3 | 0.893 | |
| | R4 | 0.849 | |
| | R5 | 1 | |
| | R6 | 0.926 | |
| Perceived enjoyment | ENJOY | | 0.865 |
| | PE1 | 0.989 | |
| | PE2 | 0.726 | |
| | PE3 | 1 | |
| Perceived usefulness | USEFUL | | 0.802 |
| | PU3 | 0.915 | |
| | PU4 | 0.961 | |
| | PU5 | 0.574 | |
| | PU6 | 1 | |
| | REDUCE | | 0.848 |
| | PU1 | 1 | |
| | PU2 | 0.807 | |
| Social norm | SN | | 0.829 |
| | SN1 | 1 | |
| | SN2 | 0.959 | |
| | SN3 | 0.807 | |
| Online SN | Online SN | | 0.778 |
| | SN4 | 0.878 | |
| | SN5 | 1 | |
| Actual online shopping | ASHOP | | 0.879 |
| | EX1 | 0.828 | |
| | EX2 | 1 | |

**Table II.**
The confirmatory factor loading for each item and the results of Cronbach's alpha test for each construct

| | Estimate | S.E. | C.R. | P |
|---|---|---|---|---|
| ASHOP ← EASY | 0.261 | 0.112 | 2.321 | 0.020 |
| ASHOP ← RISK | −0.386 | 0.112 | −3.457 | *** |
| ASHOP ← ENJOY | 0.231 | 0.094 | 2.450 | 0.014 |
| AHOP ← USEFUL | 0.085 | 0.112 | 0.759 | 0.448 |
| ASHOP ← SN | 0.214 | 0.075 | 2.863 | 0.004 |
| ASHOP ← REDUCE | 0.030 | 0.106 | 0.284 | 0.776 |
| ASHOP ← Online SN | −0.062 | 0.079 | −0.785 | 0.432 |

**Table III.**
The estimates for the proposed factors influencing the actual online shopping behavior and the associated probability (P)

of the factors USEFUL, ENJOY and EASY. Removing all insignificant relationships led to the final model presented in Figure 2 including only all significant relationships. The fit indices for the final model are as follows: CMIN/df ratio = 1.632, the comparative fit index CFI = 0.931, the adjusted goodness of fit index AGFI = 0.839, incremental fit index IFI = 0.932, root mean square error approximation RSMEA = 0.053.
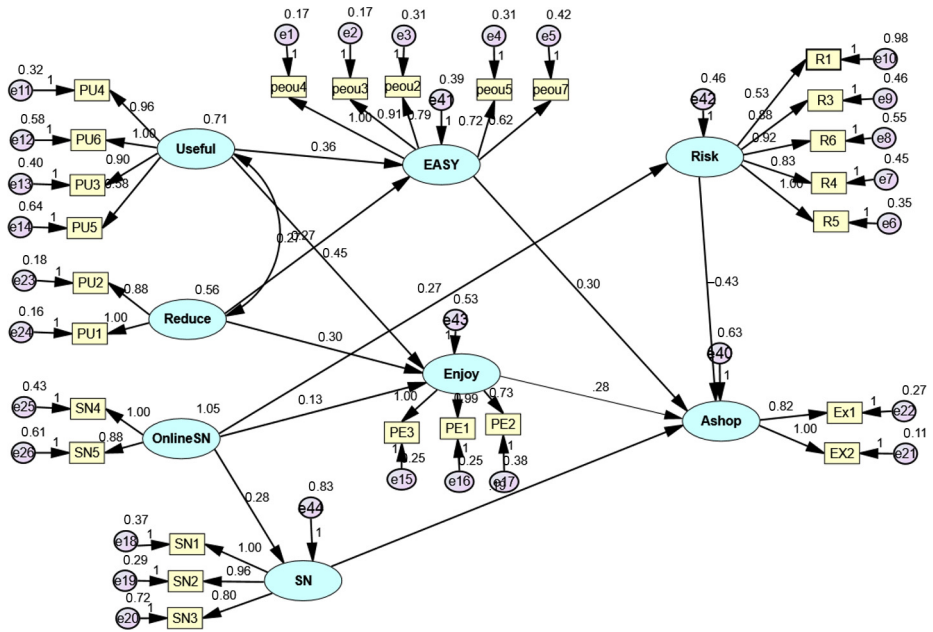
**Figure 2.**
The final model
including significant
factors affecting the
actual shopping
behavior

In Figure 2, the values associated with each path are standardized regression coefficients. Also, the $R^2$ values are written for the dependent variable ASHOP ($R^2$ = 0.63). The Final model explains 63 per cent of the variation for the actual shopping behavior. The results confirm that there is a significant relationship between each of the factors EASY, ENJOY, RISK, SN and ASHOP (EASY → ASHOP, $\beta$ = 0.30, $p$ = 0.001), ENJOY → ASHOP, $\beta$ = 0.28, $p$ < 0.001), (RISK → ASHOP, $\beta$ = −0.43, $p$ < 0.001), (SN→ ASHOP, $\beta$ = 0.19, $p$ = 0.005). The impact of online social norm on actual shopping behavior is mediated through the three factors RISK, ENJOY and SN (Online SN → RISK, $\beta$ = 0.27, $p$ < 0.001), (Online SN → ENJOY, $\beta$ = 0.13, $p$ = 0.030), Online SN → SN, $\beta$ = 0.28, $p$ < 0.001). The impact of REDUCE on ASHOP is mediated through the factors ENJOY and EASY (REDUCE → ENJOY, $\beta$ = 0.3, $p$ = 0.002) REDUCE → EASY, $\beta$ = 0.27, $p$ < 0.001). Finally, the impact of USEFUL is mediated through the two factors ENJOY and EASY (USEFUL → ENJOY, $\beta$ = 0.45, $p$ < 0.001) USEFUL → EASY, $\beta$ = 0.36, $p$ < 0.001).

Table IV summarizes the results and the accepted hypotheses by the final model; it displays the unstandardized estimate, its standard error (S.E.) and the critical ratio (C.R.), which is the estimate divided by the standard error. Under the $p$ column, the probability value related to the null hypothesis is displayed where the three asterisks (***) indicate significance smaller than 0.001.

## 5. Discussions
The proposed research model identified eleven hypotheses; however, the exploratory factor analysis confirmed the analysis of eight of them through SEM. The current findings have confirmed that consumers prefer to shop from sites that are easy to use and where they can find product characteristics in a well-defined manner (EASY → ASHOP, $\beta$ = 0.30, $p$ = 0.001). Online retailers have to invest in making their websites easy to browse, user-friendly

and compare different products and services in interactive ways. Also, the current research has strongly indicated the positive influence of perceived enjoyment on actual shopping (ENJOY → ASHOP, $\beta = 0.28, p < 0.001$).

Previous research results confirmed that the ease of use of technological interfaces and tools on websites has a significant influence on consumers' perceived usefulness of shopping online. However, our results revealed that the perceived usefulness expressed by both constructs useful and reduce has a positive influence on the feeling of ease of use. Still, though, perceived risk plays an essential role in increasing instability in the online shopping environment and is still a major obstacle in the adoption of online shopping in Egypt (RISK → ASHOP, $\beta = -0.43$, $p < 0.001$). This research has empirically demonstrated that risk negatively influences the actual shopping and has no influence nor is influenced by neither easiness nor usefulness of dealing with shopping online. Hence, it is crucial for electronic retailers to take measures to increase site security and to inform the customers about these measures, by mentioning in the site the consumer's rights, and the return policy to reduce the risk associated with shopping from websites.

Next, the results confirm that family and friends' opinions have a positive impact on respondents to shop online (SN → ASHOP, $\beta = 0.19$, $p = 0.005$) besides its effects on the perceived risk (Online SN → RISK, $\beta = 0.27$, $p < 0.001$), companies should invest in this while planning their marketing strategies. Consequently, retailers can benefit from electronic word of mouth via social network to market for their products and to reduce the perceived risk by consumers.

Although, previous research estimated that the low penetration of credit cards in Egypt is delaying the spread of electronic commerce; the results of this research did not confirm this assumption, as a large number of respondents did not have credit cards and did shop online. This can be explained by the introduction of many innovative strategies to overcome the barriers of low usage of credit cards such as payment on delivery, and services introduced by intermediaries such as Edfa3ly, PayPal and others.

## 6. Conclusion, limitations and recommendation for future research
The spreading of the online shopping phenomenon has directed research toward the understanding of the dynamics of the behavior of online consumers in different environmental settings, especially outside developed countries. This study extends the

| | Estimate | S.E. | C.R. | P |
|---|---|---|---|---|
| ENJOY ← USEFUL | 0.448 | 0.089 | 5.011 | *** |
| EASY ← USEFUL | 0.362 | 0.075 | 4.850 | *** |
| EASY ← REDUCE | 0.268 | 0.081 | 3.292 | *** |
| ENJOY ← REDUCE | 0.298 | 0.096 | 3.093 | 0.002 |
| RISK ← Online SN | 0.266 | 0.067 | 3.983 | *** |
| ENJOY ← Online SN | 0.134 | 0.062 | 2.170 | 0.030 |
| SN ← Online SN | 0.277 | 0.078 | 3.567 | *** |
| ASHOP ← EASY | 0.301 | 0.093 | 3.243 | 0.001 |
| ASHOP ← RISK | −0.426 | 0.097 | −4.403 | *** |
| ASHOP ← ENJOY | 0.277 | 0.079 | 3.500 | *** |
| ASHOP ← SN | 0.193 | 0.069 | 2.796 | 0.005 |

Table IV.
The estimates for the statistically significant factors influencing the actual online shopping behavior

TAM to understand and analyze the actual shopping behavior of Egyptian consumers. The influence of six variables on actual shopping behavior is examined.

The results of this research confirmed previous research in that ease of use and social norm have a positive influence on actual online shopping, in addition to the negative influence of perceived risk on actual online shopping. Furthermore, findings showed that the main obstacle toward online shopping is the perceived risk not the lack of credit cards in Egypt. Therefore, awareness about websites' security issues should be disseminated, to promote online shopping within Egyptian consumers.

This study has mainly four limitations. The first concerning the sample, it should cover diversified areas other than Cairo and should include respondents from different education levels. Future studies may consider using a national sample of current and potential online shoppers to be able to generalize the results. Second, the questionnaire should include questions about the levels of education and the level of income to analyze if they influence actual online shopping. Third, although the benefits of using online surveys such as reducing the costs and time and collecting data more accurately compared to paper-pencil surveys, the low response rate may lead to non-response bias. Finally, constructs such as website content, design, and response could be added to the TAM to examine different aspects of website functionalities on the actual shopping.

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**Appendix 1**

| Factors | Code | Items |
| --- | --- | --- |
| Perceived ease of use | EASY | Do you believe that online shopping is easy because of |
| | POEU2 | Easiness in finding Information within the site |
| | POEU3 | Easiness of using site |
| | POEU4 | Easiness of the download of the site |
| | POEU5 | Easiness of the search of products within the site |
| | POEU7 | The easiness of ordering |
| Perceived risk | RISK | Do you feel at risk while shopping online because of |
| | R1 | Personal data |
| | R3 | Not receiving the product in specified time |
| | R4 | Product quality |
| | R5 | Return and exchange policies |
| | R6 | Security policies within the site |
| Perceived enjoyment | ENJOY | |
| | PE1 | I like and enjoy online Shopping |
| | PE2 | I enjoy surfing for products online |
| | PE3 | I believe online shopping is interesting |
| Perceived usefulness | REDUCE | Do you believe that online shopping is useful because |
| | PU1 | Online shopping reduces time |
| | PU2 | Online shopping reduces effort |
| | USEFUL | Do you believe that online shopping is useful because |
| | PU3 | Provides better offers |
| | PU4 | Provides more product variations |
| | PU5 | I can buy from anywhere |
| | PU6 | Facilitate products comparisons |
| Social norm | SN | Do you |
| | SN1 | Ask your parents/relatives/friends about a site you want to buy from |
| | SN2 | Ask your parents/relatives/friends about products you want to buy online |
| | SN3 | You use a specific site because it is used frequently by parents/relatives/friends |
| Online SN | Online SN | Do you use Social network |
| | SN4 | To share your online shopping experience with your parents/relatives/friends |
| | SN5 | To benefit from parents/relatives/friends' online experience |
| Actual Online shopping | ASHOP | |
| | EX1 | Buying online was a satisfactory experience |
| | EX2 | You will buy again online |

**Table AI.**
The items and the codes for each factor

**Appendix 2**

| Factor | Item code | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
|---|---|---|---|---|---|---|
| *Perceived ease of use* | | | | | | |
| EASY | PEOU2 | 27.7 | 45.5 | 22.8 | 4 | 0 |
| | PEOU3 | 29 | 45.1 | 22.8 | 3.1 | 0 |
| | PEOU4 | 24.1 | 42 | 29 | 4 | 0.9 |
| | PEOU5 | 29.9 | 48.7 | 18.3 | 3.1 | 0 |
| | PEOU7 | 35.7 | 43.3 | 17.9 | 3.1 | 0 |
| *Perceived risk* | | | | | | |
| RISK | R1 | 25.9 | 43.3 | 16.5 | 10.7 | 3.6 |
| | R3 | 23.2 | 46 | 20.5 | 8.9 | 1.3 |
| | R4 | 52.7 | 31.3 | 11.6 | 2.7 | 1.8 |
| | R5 | 43.8 | 37.5 | 11.6 | 5.8 | 1.3 |
| | R6 | 37.5 | 35.7 | 20.1 | 3.6 | 3.1 |
| *Perceived enjoyment* | | | | | | |
| ENJOY | PE1 | 16.1 | 36.2 | 29.9 | 14.7 | 3.1 |
| | PE2 | 29 | 45.1 | 17.9 | 7.6 | 0.4 |
| | PE3 | 17 | 30.8 | 34.8 | 14.3 | 3.1 |
| *Perceived usefulness* | | | | | | |
| REDUCE | PU1 | 44.2 | 34.4 | 18.8 | 2.2 | 0.4 |
| | PU2 | 46.9 | 39.3 | 10.7 | 3.1 | 0 |
| USEFUL | PU3 | 27.7 | 36.2 | 25.9 | 8.9 | 1.3 |
| | PU4 | 33.5 | 33.5 | 23.2 | 9.4 | 0.4 |
| | PU5 | 42.9 | 35.3 | 14.3 | 7.1 | 0.4 |
| | PU6 | 34.4 | 28.6 | 20.1 | 14.7 | 2.2 |
| *Social norm* | | | | | | |
| SN | SN1 | 20.5 | 38.4 | 18.3 | 18.8 | 4 |
| | SN2 | 17.9 | 40.6 | 21.4 | 17 | 3.1 |
| | SN3 | 20.5 | 34.4 | 21.9 | 18.8 | 4.5 |
| Online SN | SN4 | 13.4 | 17.4 | 25.9 | 31.7 | 11.6 |
| | SN5 | 27.7 | 37.1 | 15.2 | 14.3 | 5.8 |
| *Actual shopping behavior* | | | | | | |
| ASHOP | Ex1 | 28.1 | 46.9 | 17 | 5.8 | 2.2 |
| | Ex2 | 25.9 | 45.1 | 17 | 9.4 | 2.7 |

**Table AII.**
The percentage
distribution of each
item

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