

**INVESTIGATING THE FACTORS
AFFECTING BUSINESS-TO-CONSUMER
E-COMMERCE ADOPTION IN EGYPT**

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Declaration

This is to certify that the copy of my thesis, which I have presented for consideration for my postgraduate degree: -

1. Embodies the results of my own course of study and research;
2. Has been composed by myself; and
3. Has been seen by my supervisor before presentation

In the development process of my thesis, I have published two articles in the *International Journal of Research in Management and Technology* and a research paper was accepted the International Conference of Arab-US Association for Communication Educators as per below:

- Rashid, T., and Al Sahouly, I. (2015) ‘*The adoption of Digital Purchase in Egypt*’, Accepted by *the International Journal of Research in Management & Technology (IJRMT)*. Expected Publishing date: November 2015.
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List of Abbreviations

ABBREVIATION	PHRASE
AL	Arab League
ARE	Arab Republic of Egypt
AFTA	Arab Free Trade Area
B2C	Business-to- Consumer
B2B	Business-to- Business
CAPMAS	Central Agency for Public Mobilisation and Statistics
C2C	Consumer- to- Consumer
C-TAM-TPB	Combined TAM and TPB
COMESA	Common Market for Eastern and Southern Africa
EE	Effort Expectancy
E- business	Electronic Business
E-commerce	Electronic Commerce
E-S-QUAL	Electronic Service Quality Measurement Instrument
ENP	European Neighbourhood Policy
FC	Facilitating Conditions
GCC	Gulf Co-operation Council
GNP	Gross National Product
GAFTA	Greater Arab Free Trade Area
HT	Habit
HM	Hedonic Motivation
ICT	Information and Communication Technology
IDSC	Information and Decision Support Centers
IMF	International Monetary Fund
ISE/E2C	Internet Society of Egypt: E-commerce Committee
IT	Information Technology
ITIDA	Information Technology Industry Development Agency
IDT	Innovation Diffusion Theory
KSA	The Kingdom of Saudi Arabia
MB	Muslim Brotherhood
MOU	Memorandum of understanding
MENA	Middle East and North Africa
MCIT	Ministry of Communication and Information Technology

ABBREVIATION	PHRASE
M-commerce	Mobile Commerce
MPCU	Model of PC Utilisation
MDPEOU	Model of Determinants of Perceived Ease of Use
MM	Motivational Model
NTRA	National Telecommunications Regularity Authority
OI	On-line Interactivity
OS	On-line Satisfaction
OSY	On-line security
OT	On-line Trust
PSE	Perceived Self-efficacy
PE	Performance Expectancy
Root CA	Root Certificate Authority Trust
SETs	Sensory Enabling Technologies
SET	Secure Electronic Transactions
SSL	Secure Socket Layer (SSL)
SME	Small and Medium enterprises
SI	Social Influence
SCT	Social Cognitive Theory
SNS	Social Networking Sites
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
3G	Third Generation
UAE	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development
UTAUT	Unified Theory of Acceptance and Use Technology
UTAUT2	Unified Theory of Acceptance and Use Technology model
WOM	Word of Mouth

Abstract

Through the application of the extended Unified Theory of Acceptance and Use of Technology (UTAUT2) model, this study investigates the key factors affecting the adoption of business-to-consumer (B2C) e-commerce in Egypt. This study has adopted a quantitative methodology to answer the research questions and test the proposed sixteen hypotheses. The research sample of this study included 600 Egyptian respondents. Regression Analysis has been conducted as a major evaluation of the research model and associated hypotheses.

The constructs that have been empirically tested in the extended UTAUT2 model are: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), Habit (HI) and Facilitating Conditions (FC). Age, gender and experience moderate the relationship for the six independent variables and the dependent variable except for Performance Expectancy (PE) construct that was only moderated by age and gender. The proposed additional constructs for this model are on-line satisfaction (OS), on-line interactivity (OI), on-line trust (OT) and on-line security (OSY).

The major findings of this study show that there is an effect of the established factors: Effort Expectancy, Hedonic Motivation and Facilitating Conditions, Social Influence, on-line Trust, on-line Satisfaction and on-line Interactivity on Egyptian consumers' intention to adopt B2C e-commerce. In addition, the effect of moderator's factors: age,

gender, and experience have been absent in this study. Accordingly, seven hypotheses have been proven, while nine have been rejected.

The study further discusses significant implications for marketers, on-line vendors and the Egyptian Government. In addition to presenting the important theoretical and practical contributions, this study also recommends directions for future related research. By specifically examining the Egyptian consumer, this study is the first of its kind to empirically examine B2C adoption in Egypt. Thus, it expands the body of knowledge in the field of B2C adoption and usage, which the existing literature has failed to provide an extensive understanding of B2C in the Arab World's most populous country. This study is also the first of its kind to provide a comprehensive understanding of the factors affecting B2C by Egyptian consumers.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter provides a general overview of the study and highlights its research context. It highlights a working definition of e-commerce that will be employed throughout this thesis; in addition to a general overview about business-to-consumer (B2C) type of e-commerce.

This chapter aims at shedding light on the major conceptualisation of the thesis in terms of statement of the problem, rationale for topic selection, aim of research, research questions, objectives, and contribution to knowledge. Moreover, the chapter presents a conceptual overview regarding the structure of the thesis' chapters.

1.2 Background to Research

The evolution of Information and Communications Technology (ICT) has affected the way methods through which businesses are managed both internally and externally by creating new goods, services, delivery channels and tools by which an organisation can enhance relationships with its customers (Turban *et al.*, 2011). Consequently, it evokes both the concept and practice of electronic commerce (e-commerce). A successful presence of e-commerce through the Internet has helped create a low cost and high efficiency for product and service sales through a more dynamic and interactive venue of opportunities, where the world becomes the marketplace (Soloman, 2015).

E-commerce is a relatively new concept that emerged in the 1970s (Laudon and Traver, 2012). So far, there are various definitions of electronic commerce and researchers have been unable to agree on a conclusive definition for the concept (Chaffey, 2011; Mesenbourg, 1999; Riggins and Rhee, 1998; Swatman, 1996; Wilkins *et al.*, 2000).

Some definitions of e-commerce have concentrated on the business side by considering e-commerce as: (1) a business phenomenon; (2) an application of technology using the Internet; or (3) an aspect of being a tool for increasing efficiency and decreasing costs. Table (1.1) summarises the three definitions of e-commerce:

Table (1.1): The three definitions of e-commerce	
E-Commerce Aspects	E-Commerce Definitions
Technology	E-commerce is the application of technology that is used to improve business transactions through utilising predominately Internet-based websites.
Business	E-commerce is used to provide the capability of buying and selling products, services, and information on predominately Internet-based websites.
Value	E-commerce is a tool that may be used to by business customers and consumers to create value in the Internet-based transactions by increasing efficiency and cutting costs while improving the quality of goods and services.

(Adopted from Radovilsky, 2015: 19)

Other definitions include "all the electronically mediated information exchanges between an organisation and its external stakeholders" (Chaffey, 2011: 705). However, many researchers have highlighted that the complexity of the elements of e-commerce makes definition difficult and prompted researchers to suggest

various interpretations that focus specifically on their own area of research (Wilkins *et al.*, 2000).

In this study, the working definition of e-commerce is the use of computer network, primary the Internet, to sell and buy products, services, information, and communication (Radovilsky, 2015: 19). The rationale for selecting the above definition as the working one for this study is that unlike the previously mentioned definitions, this one integrates services and focuses on the selling and purchasing processes that take place between business and consumers.

In addition, the definition was adopted to fit the scope of this study, which focuses on Business-to-Consumer (B2C) to investigate the major factors that affect the intention to adopt the B2C e-commerce in Egypt, the most populous Arab country.

The B2C type of e-commerce has been referred to as the "commercial transactions between an organisation and consumers" (Chaffey, 2011: 705). The (B2C) applications focus on using the Web to direct business' marketing programmes to individual customers. With the worldwide reach of the Internet, e-commerce helps overcome barriers to global competition and provides convenient access to potential customers. The technology allows more information to be exchanged in the same amount of time, or the same amount in less time, while increasing the number of alternatives that can be considered, and decreasing the cost of the entire selection process (Qu, 2015).

Generally, the adoption of B2C e-commerce process by consumers crystallises around two major aspects: [1] getting information about the product, and [2] purchasing the product from an on-line vendor (Pavlou, 2006). Business-to-

consumer activities can be broadly divided into four basic steps: advertisement, agreement to buy/sell, delivery, and payment (Tripathi and Dubey, 2006). This thesis focuses on the consumers' processes of purchasing on-line. Successful examples of traditional firms that are involved in selling on-line are the US-based Dell, Cisco, General Electric, Wal-Mart, and Charles Schwab companies, along with originally on-line firms such as Amazon and eBay, which have all shown the potential to enhance customer services (Maity and Dass, 2014).

The B2C e-commerce can take several forms that are based on the degree of digitisation (Turban, 2001). This means the transformation from physical to digital of the product, or the service sold, the process of payment and ordering, and the delivery process. For example, purchasing a computer or a book, which is delivered physically, differs from purchasing an e-book or a software product from a website to be delivered digitally. For the consumer, the purchasing decision will differ in these two cases. Most of the consumers would prefer to see the physical product and purchase it from the store rather than online (Turban, 2001).

Unlike traditional consumer behaviour, B2C has some key differences, which are as follows: [a] the extensive use of technology for transactions; [b] the impersonal nature of the on-line environment; [c] the ease by which information can be collected by multiple parties; [d] the uncertainty of using an open medium for transactions; and [e] the newness of the transaction medium (Pavlou, 2002).

Among the general broad barriers to business-to-consumer e-commerce is the perceived risk "due to the purchaser's inability to directly value product quality,

the lack of personal contact with sellers, the cost of learning how to use Internet and change of channel, or the absence of any personal interaction with other buyers" (Martin, 2011: 46).

Another barrier is perceived uncertainty, according to Zhang (2011), uncertainty occurs when there are many implications to a decision; for elaboration, unlike the traditional shopping, on-line purchasing makes consumers more sensitive. In traditional shopping, consumers experience the commodities to reduce uncertainty before they make a purchase decision as they may visit the store, touch the commodity, or may seek advice from the salesperson. Physical interaction with the product prior to buying a specific product can play a role in customers' purchase decisions. Zhang (2011) argues that through B2C transactions, companies are legally registered, in such case they sell with either good or bad reputation, a factor that if known will help reduce the level of consumers' uncertainty during the B2C interactions.

It has been noted that consumers' perceived uncertainty is driven from both *endogenous* and *exogenous* uncertainty. According to Littler and Melanthiou (2006), the *endogenous* uncertainty is generally caused by the consumers' own reasons such as lack of knowledge, lack of experience, or inability to determine the attributes of commodities. On the other hand, *exogenous* uncertainty is caused by the consumers' perception of external factors, and it has two major forms: [1] *perceived commodity uncertainty* and; [2] *uncertainty of behaviour* (Chevalier and Mayzlin, 2006). The major cause for the *perceived commodity uncertainty* is the type of uncertainty witnessed due to the lack of information about the attributes of

commodity such as its quality, style, or cost. The other type of *exogenous* uncertainty is *uncertainty of behaviour*, which results from the consumers' inability to determine the credibility and truth of the information provided by the seller (Chevalier and Mayzlin, 2006).

The latter point may lead to the aspect of consumers' payment systems during B2C e-commerce as a mean to establish trust. According to Schneider (2011), during e-purchasing activities, consumers can use a variety of payments methods such as credit, debt, and charge cards. Electronic cash is another form of payment on the Internet. But, it is less popular due to its high cost because the cost of processing payment cards for small transactions is greater than the profit on such transactions (Schneider, 2011). Moreover, the electronic wallet provides convenience to on-line shoppers as they maintain payment card information electronic cash, and personal consumer identification (Schneider, 2011). Consequently, this eliminates the need “to re-enter payment card and shipping information at a site's electronic checkout counter. Instead, the electronic wallet automatically fills in form information at the sites that recognise the particular software's technology” (Schneider, 2011:521). "Stored-value cards, including smart cards and magnetic strip cards, are physical devices that hold information, including cash value, for the cardholder” (Schneider, 2011:521). Unlike magnetic strip cards that have a limited capacity, smart cards can store greater amounts of data on a microchip that is embedded in the card; although trials of smart cards in the United States have not been successful, they are popular in European countries (Schneider, 2011).

Furthermore, with the use of e-commerce and accepting Internet as a source of retail channel, ethical issues prompt serious concerns about safety and ethical behaviour to consumers and create new challenges. Thus, the marketers must understand how these ethical challenges relate to dissatisfaction and distrust in the on-line retailing environment to foster further growth (Iglesia, *et al.*, 2013; Roman and Cuestas, 2008).

In fact, the latter presented payment patterns reflect that B2C requires a legal and financial structure and a cohesive national initiative as to make it an integral part of consumers' shopping experience and lifestyle. In Egypt, although there are many governmental initiatives to adopt ICT at all levels, the reality is still far behind and there is a lot to be done by both the government and the private sectors to gain the benefits required (El Beltagi, 2007, Journal of American Chamber, 2011).

1.3 Statement of the Current Problem

The Arab Republic of Egypt (ARE) is still at its early stages of using the Business- to- Consumer (B2C) type of e-commerce and the promotion of the B2C culture is very fragmented (ICT, 2013). Egypt is the most populous Arab country, with a population that has reached 85.65 million in the beginning of 2014 (Egypt Human Development Report, 2014). The proportion of Internet users in Egypt is 30 million (The Future of the Internet Economy in Egypt, 2014), which further means that only 35.08% of Egypt's population use Internet, and 64.92% of the population do not use it. Furthermore, only two per cent of Internet users buy products and services on-line (The Future of the Internet Economy in Egypt,

2014) leading to having 600,000 Egyptians only shopping on-line out of 85.55 million; a fact which gives a clear indication of the low rate of on-line shopping users compared to the total number of population.

Egypt's current situation further reflects the need to conduct intensive empirical studies to identify the causes behind the current lack of e-commerce adoption by the local consumers, and try to find the appropriate solutions to this problem, given the potential significance of e-commerce and the need to keep pace with the rapid technological developments that are taking place worldwide. Therefore, there is an urgent need to identify and explore the factors that influence the adoption of B2C so that appropriate solutions can be proposed to address them.

1.4 Rationale for Topic Selection

This study was born out of the author's concern and curiosity about finding answers that explain why B2C adoption in Egypt is far behind compared to other Arab countries such as United Arab Emirates (UAE) (The Journal of the American Chamber of Commerce in Egypt, 2011), especially that Egypt has the highest number of Internet users in the Arab world (Payfort's Middle East State of Payment report, 2014). The diffusion of Business to Consumer e-commerce (B2C) is very fragmented in Egypt and obviously lacks the professional structural strategies that can help in its large scale adoption (Rashid and Al Sahouly, 2012).

While reviewing the literature on the research of e-commerce, it has become clear that there is a lack of empirical studies that have been directed to the scope of studying Egyptian e-commerce in particular. The majority of recommendations, which were made in the analysed empirical investigations, were directly related to the macro-levels of specific countries. Thus, they cannot be generalised to the

Egyptian context especially that the factors that affect consumers' intentions to purchase on-line vary from one country to another (Mooij, 2011).

Due to the very limited research conducted on the Egyptian e-commerce adoptions in general, and Egyptian consumers in particular, there is a need to fill the gap in literature through a comprehensive empirical research. Thus, this research is a serious attempt to fill the gap in the current body of literature especially in Egypt as a major developing country in the Middle East and North Africa (MENA) region.

To narrow down the scope of this thesis, the researcher focuses on the type of (B2C) e-commerce. In fact, the researcher does not aim to investigate the scope of this research within the framework of a specific product or brand, but rather to answer the thesis' research questions and test its hypotheses within the overall adoption of business- to- consumer (B2C) type of e-commerce in Egypt.

1.5 Aim of Research

Accordingly, this thesis aims to investigate the major factors that affect the intention to adopt B2C e-commerce in Egypt through developing a model, which can be used to identify the factors affecting the adoption of B2C in Egypt.

1.6 Research Questions

The research aims to answer two major questions:

[1]: What are the major factors that affect the intention to adopt B2C in Egypt?

[2]: What are the relationships among these factors that affect the intention to adopt B2C in Egypt?

1.7 Research Objectives

In accordance with the aim and research questions, this research has the following three objectives:

- [1] Assessing the major factors that affect the intention for Egyptians to adopt B2C e-commerce;
- [2] Developing an e-commerce adoption model for Egyptian consumers by investigating the factors affecting the adoption of B2C in Egypt;
- [3] Investigating the moderating effect of age, gender and experience between Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), Facilitating Conditions (FC), Habit (HT) and the behavioural intention to adopt B2C.

1.8 Contribution to Knowledge

This research is intended to contribute to knowledge in the field of e-commerce adoption by:

- [1] Expanding the body of knowledge in the field of B2C adoption and usage in Egypt especially that the existing literature has failed to provide an extensive understanding of B2C in this Arab country;
- [2] Understanding the factors affecting on-line shopping by Egyptian consumers as there is a limited and fragmented literature that empirically tests Egyptian adoption of B2C and the e-purchase behaviour;
- [3] Developing a model that can be used to measure and investigate the factors affecting the B2C adoption in Egypt; and
- [4] Providing future researchers with an applicable extensive framework about e-commerce adoption in Egypt as a developing country.

1.9 Structure of the Thesis

This section provides a snapshot of the chapters and sections that are covered in this thesis:

Chapter One: *Introduction:*

This chapter provides the introduction to the research and the problem area. It introduces the reader to the research context by presenting the concept and the adopted definition of e-commerce and B2C. It also sets the background data which has led to the development of the research problem. It further introduces the rationale for topic selection, aim of research, research questions, research objectives, and contribution to knowledge. The ‘structure of the thesis’ is the last section of this chapter, which gives details of the contents of each chapter. The chapter concludes with a summary.

Chapter Two: *E-Commerce and the Arabian Context:*

This chapter reviews related literature on e-commerce adoption. As noted in Chapter One, the selection of the current problem has been justified and the research questions and objectives have been identified. This chapter aims to present a critical evaluation of the related previous studies to identify research gaps and further develop research hypotheses. It reviews factors that affect e-commerce adoption in addition to B2C adoption in major Arab countries. The chapter concludes by providing critical reflections on B2C in the United Arab Emirates (UAE), Kingdom of Saudi Arabia (KSA), Kuwait and Egypt. Furthermore, the chapter concludes with a summary.

Chapter Three *E-Commerce: The Egyptian Context:*

This chapter is considered a continuation of Chapter Two because it covers the current e-commerce situation in Egypt and presents an overview on the Egyptian context. Being one of the largest markets in the Arab region, this chapter provides a country profile about Egypt as a developing country and the current status of business-to-consumer in terms of strategic implementations adopted by the Egyptian government. Picking up from the first chapter that defined the research problem, Chapter Three further provides important statistics and data that reflect the status of B2C in Egypt. In addition, the chapter identifies the research gaps based on the reviewed literature and the analysed Egyptian context. The chapter concludes with a summary.

Chapter Four: *Theoretical Models Underpinning the Research:*

This chapter presents the adoption theories and models that have been used to analyse e-commerce adoption in the past. The following topics are discussed: Theory of Reasoned Action (TRA); Technology Acceptance Model (TAM); Motivational Model (MM); Theory of Planned Behaviour (TPB); Combined TAM and TPB (C-TAM-TPB); Model of PC Utilisation (MPCU); Innovation Diffusion Theory (IDT), and the Social Cognitive Theory (SCT). Further, this chapter presents a conclusion that the extended Unified Theory of Acceptance and Use Technology (UTAUT2) is the theoretical framework of this research. Furthermore, the chapter concludes with a summary.

Chapter Five: *Hypotheses Development and Conceptual Model:*

The chapter presents the conceptual development of research hypotheses, and presents the proposed research model based on the development of the extended Unified Theory of Acceptance and Use Technology (UTAUT2), which was selected as the theoretical framework of this research. Moreover, the chapter concludes with a summary.

Chapter Six: *Methodological Framework:*

This chapter deliberates on the consideration of the research philosophy and approach that were selected for this research based on various considerations from the research questions and the review of the literature. The chapter further presents the research strategy, technique and questionnaire design. It further presents the pilot study, and assurance of internal and external validity in addition to reliability. Research population and sample is identified. Statistical analysis is justified along with ethical issues. Further, the chapter concludes with a summary.

Chapter Seven: *Data Analysis:*

This chapter provides a comprehensive analysis because it covers data preparation, descriptive analysis, distribution of dependent variables, group differences by gender, age and educational level and reliability tests. In addition, factor analysis and sampling adequacy have been provided. The regression analysis for factor scores is also used as well. The chapter, moreover, presents the Hypothesis Testing for Factor Scores that tests the moderation effects of age, gender and experience. The chapter concludes with a summary.

Chapter Eight: *Discussion of Findings:*

This chapter starts by discussing the key findings of the research in relation to the intention to adopt B2C e-commerce. The chapter discusses the factors affecting the intention to adopt B2C e-commerce in addition to the moderating effect of gender, age and experience. It also discusses the theoretical implications of B2C adoption, the research findings in relation to research questions and objectives and practical implications. Moreover, the chapter concludes with a summary.

Chapter Nine: *Conclusion:*

Based on the research questions, the last chapter of the thesis provides a summary of the major research findings. A section on the research theoretical and practical contribution is provided. It reflects on the research aspects and practice in terms of presenting recommendations to on-line vendors and on-line marketers in addition to the Egyptian government. Research limitations and other future research directions are presented, too.

Furthermore, Figure (1.1) gives an overview regarding the structure of the overall thesis:

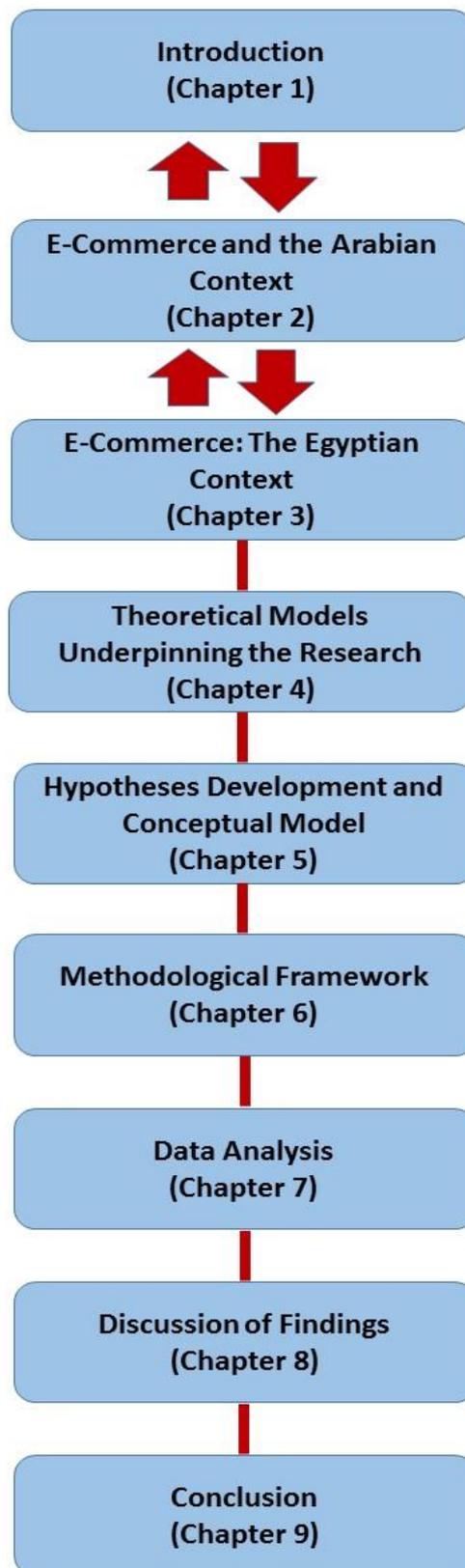


Figure (1.1) Research Outline

1.10 Chapter Summary

As mentioned above, this chapter gives an overall view on the research topic and highlights the working definition of e-commerce. It further presents the statement of the problem and justifies the rationale for topic selection. It further identifies the research aim, two research questions and three objectives. Moreover, this chapter introduces the contribution to knowledge and presents an overview regarding the structure of the overall thesis and its nine chapters.

CHAPTER TWO

E-COMMERCE AND THE ARABIAN CONTEXT

2.1 Introduction

As noted in the previous chapter, the selection of the current problem has been justified and the research questions and objectives have been identified. The literature review section covers two inter-related themes: (1) the major part of the literature review that has been conducted on e-commerce and an overview on Arab countries, and (2) the current e-commerce situation in Egypt. This chapter along with Chapter Three will review the B2C material in an attempt to identify research gaps, and help develop research hypotheses.

This chapter presents e-commerce types, the benefits of B2C adoption, B2C challenges, B2C in the Arab World with a special focus on the United Arab Emirates (UAE), the Kingdom of Saudi Arabia (KSA), Kuwait and Egypt, which are considered the largest ME markets. Moreover, the chapter presents a critical reflection on these four countries including Egypt, which constitutes the background required for Chapter Three that covers a detailed overview of the Egyptian context.

2.2 E-Commerce Types

The importance of e-commerce in general and its benefits to both buyers and sellers in terms of low transaction costs, reduced inventory, high efficiency, accessibility to more information, approaching more segments of buyers and

sellers, minimised marketing costs and high percentages of sales, have all been emphasised by various literature for so many years (Amit and Zott, 2001; Baron *et al.*, 2000; Barratt and Rosdahl, 2002; Bakos, 1991,1998; Johnston and Vitale, 1988; Laudon and Traver 2012; Malone *et al.*, 1987; Turban *et al.*, 2006; Tumolo, 2001; Wang *et al.* 2008). The e-commerce applications can be classified into four categories: Business-to-Consumer (B2C), Business-to-Business (B2B), Consumer-to-Consumer (C2C) and Mobile commerce (M-commerce) (Applegate, 2006; Radovilsky, 2015).

Although the B2C is the main focus of this study, it is significant to explain the main idea of each one of the above mentioned types of e-commerce. The Business-to Business (B2B) e-commerce refers to a broad range of inter-company transactions, including wholesale trade as well as a company's purchases of services, resources, technology, manufactured parts and components, and capital equipment. The B2B also incorporates many types of financial transactions between companies, such as re-insurance, commercial credit and electronic networks for trading bonds, securities and other financial assets (Alsaad *et al.*, 2014; Guang *et al.*, 2015; Lucking, 2001; Ng, 2013)

The second type of e-commerce is Business-to-Consumer (B2C) e-commerce, or commerce between companies and consumers. It involves customers gathering information, purchasing physical goods (such as books or consumer products) or information goods (goods of electronic material or digitised content, such as software, or e-books), and, for information goods, receiving products over an electronic network (Andam, 2003). The following sections present more details regarding conducted empirical research related to B2C e-commerce.

The third type of e-commerce is Consumer-to-Consumer (C2C) e-commerce. It enables the on-line transaction of goods or services between consumers through a third party. A common example is the on-line auction, in which a consumer posts an item for sale and other consumers bid to buy it (Telus, 2005). The third party generally charges a flat fee, or a commission. The websites are only intermediaries to match sellers and buyers. They do not have to check the quality of the products being offered for sale (Telus, 2005). Most existing research studies on the C2C have been interested in explaining why and how buyers use the C2C auctions to buy, how off-line and on-line purchasing behaviour are compared and how managers design on-line auction websites to attract buyers and enhance loyalty. It is worth mentioning that few studies have focused on the C2C (Papaioannou *et al.*, 2013).

Finally, the Mobile Commerce (M-Commerce) refers to the buying and selling of goods and services through wireless handheld devices such as cellular phones and personal digital assistants, and it has become the latest trend to do business instead of e-commerce in developed countries (Cabanillas, *et al.*, 2014; Nassoura, 2013; Yee and Chong, 2013). M-commerce has become the latest trend instead of electronic commerce as it allows faster access, greater opportunities and more powerful applications for its users (Nassuora, 2013). It has been found that m-commerce applications had unique benefits due to the application-specific need of targeting a spectrum of different user needs (Hamed *et al.*, 2010). As previously defined, m-commerce is closely related to e-commerce since the service offered in both types are handled electronically by computer-mediated networks and accessible via telecommunication networks, the only difference is that in m-

commerce the telecommunication networks are accessed through mobile electronic devices. Accordingly, there are two different paradigms covering the relationship of m-commerce and e-commerce (Belanger *et al.*, 2011; Chen *et al.*, 2013). The first paradigm classifies m-commerce as an extension of e-commerce; the second paradigm regards m-commerce as an independent business field and consequently as an alternative mechanism to e-commerce (Chen *et al.*, 2013).

The above mentioned four types of e-commerce involve the buying and selling of information, products or services (Chang *et al.*, 2002; Cockburn and Wilson, 1996; Foley and Sutton, 1998; Gunasekaran *et al.*, 2002; Iglesias, 2013; Micheal, 2012; Ngai and Wat, 2002; Nath *et al.*, 1998; Phan, 2003; Poon, 1999; Vieyra and Claycomb, 2001). It incorporates all aspects of trading such as commercial market creation, ordering and the transfer of money (Gunasekaran *et al.*, 2002, Sharma, 2002). The e-commerce has increasingly become an important technological medium through which business owners serve their customers, expand their geographical outreach, respond to competitive pressure and reduce operational costs (Beck *et al.*, 2005; Micheal, 2012; Martin and Matlay, 2003; Wymer and Regan, 2005). Despite the tremendous amount of growth in e-commerce adoption around the globe, there is still a significant discrepancy between nations especially the developing and developed ones (Herrera *et al.*, 2014). After reviewing the literature, it was obvious that the majority of empirical investigations of e-commerce had focused on developed countries (Micheal, 2012; Yuan, 2012) compared to the amount of research that was conducted on developing countries (Almoussa, 2013; Bhowmik, 2012).

It is worth mentioning that the markets in most developing countries have not always been successful in adopting technologies (Sly, 2011). Hence studies to unveil the reasons for the lack of acceptance and adoption are highly needed nowadays. Researchers and practitioners, meanwhile, have agreed that there are still uncertainties in the significance of the e-commerce among consumers in the developing countries. Therefore, its benefits for these countries are not fully realised (Nathan, 2009). The following sections will present the e-commerce benefits and challenges.

2.3 Business-to-Consumer E-commerce Adoption Benefits

Since the e-commerce concept appeared in the 1970s (Laudon and Traver, 2012), there has been many empirical research and investigations that covered the mutual benefits of e-commerce to the buyers and sellers in terms of low transaction costs, reduced inventory, high efficiency, accessibility to more information, approaching more segments of buyers and sellers, minimised marketing costs and high percentages of sales. All these benefits been emphasised by various literature for so many years (Amit and Zott, 2001; Baron *et al.*, 2000; Barratt and Rosdahl, 2002; Bakos, 1991,1998; Johnston and Vitale, 1988; Laudon and Traver 2012; Malone *et al.*, 1987; Turban *et al.*, 2006; Tumolo, 2001; Wang *et al.* 2008).

The e-commerce benefits may differ according to the type of e-commerce as discussed in the previous section and whether the beneficiary is a consumer, a customer, a business or a community. But, this study focuses only on consumers in the B2C context. The following aspects summarise the key B2C benefits to consumers (Abou-Shouk *et al.*, 2013; Ash *et al.*, 2011; Engelstatter and Sarbu, 2013; Jahanshahi and Zhang, 2013; Raghunath, 2013):

[1]. There are no geographical or national boundaries in e-commerce as the customers can select from all potential suppliers regardless of their location;

[2] The consumers do not have to travel to a store or adjust their time in accordance with its working hours, so shopping on the Internet can save time;

[3] There is access to a wider range of information about the availability and pricing of any product;

[4] There is the opportunity to find specialty items that are not readily available in ordinary retail outlets;

[5] Consumers can access thousands of e-shopping websites to become informed about new products, and purchase everything from groceries to books to insurance policies without leaving their home or office;

[6] Payment for goods or services is made immediately;

[7] On-line customers can shop at stores inside or outside their country;

[8] Providing consumers with the opportunity for new products and services; and finally

[9] On-line customers are able to shop at any time during the day (Abou-Shouk *et al.*, 2013; Ash *et al.*, 2011; Engelstatter and Sarbu, 2013; Jahanshahi and Zhang, 2013; Raghunath, 2013).

The literature revealed other mutual B2C benefits to the organisations and society. For organisations, one of the most prominent benefits of e-commerce is that it expands the market from the scope of the local representative to the scope of the

international scale with a few costs (Maity, 2014). Accordingly, any company can find more consumers and adequate partners in a fast and easy way as it was found that the adoption of e-commerce systems would lead to a reduction in administrative costs of the procurement process by more than 85 per cent (Efraim, 2006). Furthermore, the e-commerce systems help all enterprises reduce inventory while following the manufacturing systems and modern distribution resource planning and needs. These systems also help business owners use the system specified timing (Mansour, 2002). In addition, the e-commerce helps venture owners dispense with intermediaries as there will be no need for their existence between the seller and the buyer in the Cyber-space (Akram, 2004). Thus, the e-commerce enables the re-structuring of business processes, and through this means, the productivity of vendors, staffs, and administrators will increase by more than 100 per cent (Ali, 2007). The e-commerce systems, meanwhile, help reduce communications costs through the use of the International Network for Communications [Internet] (Efrim, 2006). The adoption of e-commerce, moreover, helps reduce transportation costs, especially in the case of digital products that can be transferred across the network directly, as is the case in computer programs (Efrim, 2006). In addition, the e-commerce benefit organisations through improving their image and effectiveness of customer service, finding new trading partners, facilitating transactions, reducing the time frame of sending the products and services, increasing productivity, eliminating paperwork, and finally increasing flexibility in transactions (Ali, 2007).

Regarding its benefits to the society, the B2C enables the creation of new opportunities for self-employment through the launching of small or medium-

sized enterprises (SMEs) that are connected to global markets at the lowest possible cost (Al-Qeisi and Hegazy; Saied, 2003). Such ventures allow an individual to work at home, reduce the default time for shopping, which means less congestion in the streets, and consequently reducing the air pollution levels (Efrain, 2006). Moreover, it also allows the Third World consumers to buy the products and goods that are not available in their own countries (Al-Qeisi and Hegazy, 2015; Saied, 2003). In addition to the above mentioned benefits, the e-commerce provides public services via the Internet, such as high-quality education, healthcare, and social services at the lowest possible price (Efrain, 2003).

The previous section has presented e-commerce benefits, the literature revealed that the B2C holds mutual benefits to the buyer, seller, organisations and society. The following section will present an overview of the challenges that are related to B2C adoption.

2.4 Businesses-to-Consumer Adoption Challenges

Further to the above overview on the B2C benefits, there is an urgent need to give an overview on the major constructs related to adoption challenges and obstacles of e-commerce to identify the research gaps and establish the required background for achieving the second objective of this study, which is developing and designing a B2C adoption model for the Egyptian consumers.

Numerous studies (Abbasi *et al.*, 2011; Chang, 2013; Chen *et al.*, 2015; Kim *et al.*, 2011; Maity, 2014; Ponte *et al.*, 2015; Simonian *et al.*, 2012; Vos *et al.*, 2014) have been questing for understanding the intricate driving variables and

challenges underlying e-commerce adoption. Among these challenges are: intangibility, on-line security, on-line trust, on-line satisfaction, and on-line interactivity (Nepomuceno *et al.*, 2012; Nepomuceno *et al.*, 2014).

Intangibility is another challenge to B2C adoption for two major reasons. First, it increases the intangibility of physical products. Many Egyptian consumers are resistant to e-commerce because it does not provide them with physical cues about a given product (Mothersbaugh *et al.*, 2012). Second, the on-line setting is perceived as more intangible than traditional channels (Lin *et al.*, 2009). In addition, many previous studies highlighted those consumers, who are unable to physically examine an object when buying on-line, are more concerned that the item may not look, or function as expected (Simonian *et al.*, 2012).

In line with the previous argument, on-line security has been found to be one of the major challenges to a large scale of B2C adoption (Kim *et al.*, 2011; Stewart *et al.*, 2002) in addition to the absence of strong regulations and guidelines that ensure the on-line security for consumers (Evans and Sawyer, 2009; Shah *et al.*, 2014).

Some scholars have perceived on-line security as maintaining the security of financial information such as credit card information or on-line account passwords (Azizi and Javidani, 2010). Further, it is argued that an on-line transaction is secure if the information originated from the right party and reached the right entity without being observed, changed or destroyed during the transition process and storage (Chellappa and Pavlou 2002; Kim *et al.*, 2010) . Kurt and Hacıoglu (2010) argued that customers perceived on-line security as an ethical issue and

expected on-line vendors to guarantee the security of sensitive information, which they obtained.

Other research studies argued that the transaction safety and security are the most important risks that were faced during e-commerce adoption (Ratnasingam, 2006). The majority of previous research has been interested in providing a better understanding of customers' perceived on-line security concerns. Some of these risks include addressing information security and privacy concerns among the on-line consumers (Carter *et al.*, 2011; Forsythe and Shi, 2003; Ladhari, 2010; Miyazaki and Fernandez, 2001; Nepomucino, 2014; Runyan *et al.*, 2008), which if not properly addressed could hinder e-commerce growth.

Furthermore, few researchers have studied the influence of customers' perceptions of different security attributes such as safe shopping guarantee, security policy and protection mechanism, encryption, authentication, technical protection, and verification on their perceived on-line security (Chellappa and Pavlou, 2002). Furthermore, if consumers perceive that the website of the online seller has security attributes, they will deduce that the online seller's intention is to guarantee security during online purchasing (Chellappa and Pavlou, 2002). Other researchers have investigated the influence of the customers' perceptions of a security statement and websites technical protection on their overall perceived security (Kim *et al.*, 2010).

In addition, the perception by consumers that the online seller meets these security antecedents will increase the consumers' trust (Ku, 2012). In the general e-commerce context, there have been many studies in which a positive influence of perceived security on trust has been found (Flavian and Cuinaliu, 2006; Kim, D.

et al., 2008; Kim *et al.*, 2011). Yousafzai, Pallister, and Foxall (2003) confirmed the effect of perceived security on trust. Further, Kim *et al.* 2011, found a positive relationship between perceived security and perceived trust.

Establishing on-line consumer trust is at the centre of successful e-commerce adoption. Within the B2C e-commerce market, there is explicit evidence that suggests the importance of establishing trust in encouraging e-commerce adoption (McCole *et al.*, 2010).

Other related research papers on e-commerce assurance and adoption have highlighted the issue of on-line trust in e-commerce, concluding that the security of the Internet for financial transactions poses one of the biggest challenges to the success of e-commerce (Gehrt 2011; Gritzalis and Gritzalis, 2001; Hsieh *et al.*, 2013; Irwin *et al.* 2010; Ozkan, 2010). In this regard, some researchers have identified the obstacles to forge on-line trust, which include the following three major aspects (Barkat, 2002; Desai *et.*, 2012; Garbarino and Lee, 2003; Gritzalis and Gritzalis, 2001; Henari *et al.*, 2008; Ladhari, 2013; Lawson *et al.* ., 2003; Ogonowski *et al.*, 2014; Park, 2012; Pennanen *et al.*, 2007; Premazzi, 2010; Stewart *et al.*, 2002):

First, technical, which results in the development of inconsistent infrastructure of certification policies;

Second, legal, which emerges due to the availability of different or contradicting legislative frameworks that govern the adaption of e-commerce practices across countries; and

Third, the management process of on-line transactions (Barkat, 2002; Desai et al., 2012; Garbarino and Lee, 2003; Gritzalis and Gritzalis, 2001; Henari *et al.*, 2008; Ladhari, 2013; Lawson *et al.*, 2003; Ogonowski *et al.*, 2014; Park, 2012; Pennanen *et al.*, 2007; Premazzi, 2010; Stewart *et al.*, 2002).

Furthermore, trust has been investigated in some empirical studies as a moderator variable in relation to e-commerce adoption, especially with the independent variable perceived risk (Buttner and Gortiz, 2008). It has been argued that if the consumer trusts e-commerce, then the risk perceived will be lower and an influence is expected with e-commerce adoption especially in European countries (Delbufalo, 2012). Generally, moderator variables have been referred to as third type variable other than independent and dependent ones, and they specify the magnitude and intensity of the relationship between independent and dependent variables. In the presence of a moderating variable, the relationship between dependent and independent variables can be changed drastically (Hansen and Jensen, 2009; Hernandez *et al.*, 2011; Hwang, 2010).

Moreover, in relation to moderating variables, the literature has revealed that several variables have been integrated for moderation effect within the theme of e-commerce adoption such as experience, attitude towards technology, age, gender, income, education, culture, normative beliefs, shopping motivation and time pressure (Bertea and Zait, 2013).

Moreover, regarding other variables related to the concepts of on-line security and on-line trust in relation to e-commerce adoption, research studies have shown that both concepts play a key role in the establishment of on-line satisfaction

(Anderson and Srinivasan, 2003; Gummerus *et al.*, 2004; Reichheld and Schefer, 2000; Sirdeshmukh *et al.*, 2002; Pontevia, 2013; Toufaily, 2013).

In the meantime, satisfaction plays a particularly important role in competitive environments such as e-commerce because of its impact on the customer's loyalty (Auh and Johnson, 1998; Gounaris *et al.*, 2010; Shankar *et al.*, 2000; So derlund, 1998).

Extant research conceptualises that on-line customers' satisfaction as a cumulative construct that is affected by service expectations and performance perceptions at the present time, as well as in previous time periods. In this regard, many researchers have highlighted the problems related to how customer satisfaction has been measured (Payne and Holt, 2001). The basic two arguments, which cover e-satisfaction literature, are the explanations for the construct. One side argument covers the theoretical model (expectancy-disconfirmation), which specifies that an increase in satisfaction occurs if performance is higher than expectation, while a decrease in satisfaction results if performance fails to meet expectation (Binninger, 2008; Chang and Chin, 2011; Chung and Shin, 2010; Limbu, and Lunsford, 2011; Mittal, and Kumar, 2001; Spreng *et al.*, 2001; Sultan and Henrichs, 2000). The other argument says that instead of consumers using expectations as a basis for judging satisfaction, they may use their judgment of perceived value (Choi *et al.*, 2004; Cronin *et al.*, 2000; Trocchia and Janda, 2003). It is worth mentioning that no formal research has been conducted in Egypt regarding on-line satisfaction, yet.

A further concept, which is related to the latter argument in terms of customers' on-line satisfaction and their judgment of perceived value, tackles the idea of their on-line interactivity in relation to the adoption of B2C (Chang and Chin, 2011).

The on-line purchasing involves different forms of interactivity than the off-line because customers cannot inspect potential purchases. Therefore, they may perceive a high level of purchase risk stemming from the differences between expectations regarding perceived performance and reality (Kim *et al.*, 2009; Lee and Tan, 2003; Pitta *et al.*, 2006; Yen and Lu, 2008). The most recent B2C-related research themes and on-line interactivity, tackled the concept of co-creation of value processes (Huang and Rust, 2013). It reflects the premise that value is not only created exclusively by the firm, but through the on-line interactions between and the joint activities carried out by different actors, including customers, too. (Chen *et al.*, 2012; Finsterwalder and Kuppelwieser, 2011; Gronroos, 2012; Helkkula *et al.*, 2012; Huang and Rust, 2013; Hoyer *et al.*, 2010; Kumar *et al.*, 2010; Ramaswamy, 2011; Wu and Fang, 2010).

The e-commerce adoption has favoured the emergence of on-line platforms that include a variety of cues, which offer customers greater interaction possibilities (Breibach *et al.*, 2013; Fiore *et al.*, 2005; Malthouse and Hofacker, 2010; Varadarajan *et al.*, 2010; Wang *et al.*, 2007). Having reviewed the literature, it can be concluded that the contexts in which co-creation experiences have been acknowledged (Bolton and Saxena-Iyer, 2009) but the purchase context has not been fully addressed to date.

The previous section has presented some challenges underlying the e-commerce adoption. These challenges are related to the variables of intangibility, on-line security, on-line trust, on-line satisfaction, and on-line interactivity, which are all have challenged B2C adoption. The following section will present an overview about B2C adoption in the Arab world.

2.5 Business-to-Consumer Adoption in the Arab Countries

The Arab World comprises 22 countries and territories of the Arab League (AL). It is an area that stretches from the Atlantic Ocean in the west to the Arabian Sea in the east, and from the Mediterranean Sea in the north to the Horn of Africa and the Indian Ocean in the southeast (UNDP, Human Development Report, 2015). It has a combined population of around 422 million people, with over half of its population under 25 years of age. The Arab countries are Algeria, Bahrain, Comoros Islands, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, the Sultanate of Oman, Palestine, Qatar, Saudi Arabia, Somalia, The Sudan, Syria, Tunisia, the United Arab Emirates (UAE) and Yemen (Sly, 2011).

The main challenges that modern organisations are facing in developing countries nowadays with regards to implementing the e-commerce applications are the factors that affect the level of usability and security of B2C applications (Almoussa, 2013). Attracting on-line consumers to purchase on-line through e-commerce applications is not an easy task and many organisations in the developing countries are facing obstacles to get advantages from the adoption of e-commerce, and enhancing the trust of customers to increase on-line sales

through the development of the usability of e-commerce applications installed in their websites (Mee and Huei, 2015).

The Arab countries share various similarities including religion, customs and values, history, and language (Nathan, 2009). However, they differ mainly in terms of wealth, size and their adoption to information technologies (Dehkordi *et al.*, 2011). Empirical studies on the factors that affect adoption of e-commerce in some Arab countries have yielded different results (Omar, 2013). For example, results of a study that included 300 samples have revealed that knowledge is the most important factor that contributes to e-commerce adoption in Saudi Arabia, Qatar, Kuwait, United Arab Emirates and Yemen (Nathan, 2009). The results further revealed that knowledge mediates consumers' perception of risk and trust in contributing to their e-commerce adoption (Nathan, 2009).

Unlike the developed countries, where gender mediated the B2C adoption (Hwang, 2010; Hansen and Jensen, 2009; Chiu *et al.*, 2005), statistical analysis showed that there was no significant gender effect towards B2C among the Arab consumers in the Kingdom of Saudi Arabia, Qatar, Kuwait, United Arab Emirates and Yemen (Nathan, 2009).

A recent research conducted in Saudi Arabia, has shed light on the tangible barriers facing Saudi consumers when shopping on-line, and identified key tangible barriers and their relative importance for both e-commerce adapters and non-adapters facing the oil-rich country's consumers when shopping on-line. The study was conducted in two phases, a focus group phase and a survey phase that included among 273 respondents (Almoussa, 2013).

It was found that the major factors that have the most significant impact on the adoption of e-commerce in Saudi Arabia were security, trust, cyber-law, awareness, perceived usefulness, and effectiveness of postal services, government e-readiness, adequate electronic websites, warranty, trial and experience (Alqahtani *et al.*, 2012).

Results showed that the most serious barriers facing Saudi consumers when shopping on-line were weak or no after-sale support, followed by high international shipping cost, then fear of product un-arrival (Almousa, 2013). Further results of focus groups identified eight main obstacles, including: poor after-sale support, fear of product un-arrival, unavailability of international shipping in the vendors' website pages, website language, un-availability of house mailing address, no previous experience regarding on-line purchasing, payment system (including not having a credit card), and high shipping costs (Almousa, 2013).

The United Arab Emirates (UAE), the Kingdom of Saudi Arabia (KSA), Kuwait, and Egypt are the region's largest markets (PayFort Report, 2014). Within the last decade, the Arab World has witnessed an Internet revolution on a massive scale. In the beginning of 2004, the Internet was still a young technology to the region, with only 28 million people going on-line (Omar, 2013). But ten years later, the number increased by more than 400%. In 2014, there were more than 141 million Arabs people using the internet (PayFort Report, 2014).

Having presented an overview about B2C adoption in the Arab world, the following section offers a brief description regarding each country of the largest

B2C markets: the United Arab Emirates, the Kingdom of Saudi Arabia, Kuwait and Egypt.

The data presented in this section has been adopted from the most recent reports about B2C status: Payfort Report (2014) regarding the state of payments in the Arab World; PayPal Report (2013), which gives insights into e-commerce in the Middle East from 2012 till 2015; and Nielsen Report. (August 2014), which tackled e-commerce evolution around the world including the Middle East region.

2.5.1 B2C E-commerce in the United Arab Emirates

The Emirati on-line buyers under 31 years of age represent 73% of the overall on-line transactions and make up 64% of the population. This young population is helping to increase on-line purchases in sectors like e-commerce, event tickets, and digital goods, while older age groups are contributing to the highest transacting sectors such as airline tickets, hotels, and travel (PayPal, 2013). Most on-line buyers are located in Dubai, with 60% of the population transacting within the emirate. Westerners and expats from the Indian sub-continent represent the largest groups transacting on-line with 69.7% of the on-line buyers. The remaining nationalities transacting on-line in the UAE are Arabs, including UAE nationals (Payfort Report, 2014). The Abu Dhabi and Sharjah Emirates represent 27% of the on-line buying population, with the remaining emirates making up 13% of on-line transactions (Payfort Report, 2014). The UAE population has a 70% male to 30% female ratio, the highest in the Arab World. On the other hand, the ratio of male to female transacting on-line is 60% male to 40% female and is the most gender equal on-line transaction ratio in the Gulf region (Payfort Report, 2014).

The most popular on-line shopping categories in the UAE are airline tickets, hotel bookings, and electronics, forming a total 51% of UAE on-line transactions. Other popular categories in the UAE include fashion, books, and media downloads, which total up to 25% of all UAE On-line transactions (Nielsen Report, 2014).

As for the preferred payment method in UAE, the majority of consumers in the Oil-rich country still prefer to pay with cash-on-delivery versus using a credit card On-line. While only 22% of users pay with a credit card, this percentage represents an improvement from the cash vs. credit card split a few years ago. The cash-on-delivery rates are expected to decrease within the next few years with an increase in credit card penetration levels and alternative payment methods (Payfort Report, 2014; PayPal, 2013).

2.5.2 B2C E- commerce in the Kingdom of Saudi Arabia

The Kingdom of Saudi Arabia (KSA) is home to over 28 million people. With a median age of 26, just under half of the nation's population is 24 years or younger, while the majority of the people is aged 25 to 54 (Payfort Report, 2014). Despite its young population, the country has one of the lowest Internet penetration rates with only 54% of Saudi Arabia residents having access to the Internet. With approximately 15.6 million Internet users, only 3.9 million people are transacting on-line; however, with a larger credit card penetration rate and more affordable Internet packages, the oil rich Gulf country is expected to witness an increase in on-line transactions and become the highest average shopping cart size in the region (Payfort Report, 2014).

The Saudi Arabian population has a 57% male to 43% female ratio, one of the lowest among Arab countries (Nielsen Report, 2014). On the other hand, the ratio

of male to female transacting on-line is 85% male to 15% female and is the highest on-line male transaction ratio in the region (Payfort Report, 2014). The on-line buyers under 35 years of age represent 60% of overall on-line transactions and make up to 75% of the population (PayPal, 2013). While this young population is contributing to on-line transaction growth in the region, a low Internet penetration rate is preventing the country from taking off (Payfort Report, 2014; PayPal, 2013).

Expatriate workers in the country represent roughly 30% of the population and contribute up to 59% of all on-line transactions. Arab nationalities, including Saudi Arabian and Khalejiis (Gulf nationals) make up the other 41 % of the on-line transactions. The majority of on-line buyers is located in the two major cities of Riyadh and Jeddah, with 61% of the population transacting within the country's two largest cities (Payfort Report, 2014). The next three highest transacting locations are al-Dammam, Mecca, and Medinah, comprising 16% of the on-line transactions. The remaining cities make up four per cent, or less of the total transaction amounts (Payfort Report, 2014).

Airlines tickets, electronics, and hotel reservations are the most popular on-line shopping categories, which represent 56 % of the kingdom's on-line transactions. Fashion, the most popular female segment, makes up to 8% of on-line transactions, while books and media comprise up to 11% of the on-line transactions (Nielsen Report, 2014). As a founding member of the Gulf Cooperation Council (GCC), the KSA has the least reliance on cash-on-delivery with about 76% of on-line transactions. However, with the increase in credit card issuance, Saudi Arabia is expected to witness more on-line transactions from

credit cards within the next few years (Payfort Report, 2014; Nielsen Report, 2014).

2.5.3 B2C E-commerce in Kuwait

With a population of 3.3 million and the highest credit card penetration in the region, Kuwait has one of the biggest on-line transaction potential growth rates in the whole region. Kuwait has one of the highest Internet penetration rates in the Arab World with 79% of its population having access to the Internet (Payfort Report, 2014). Of those 2.7 million Internet users, 930,000 persons are transacting on-line, which translates to just under one third of the population buying products and services on-line. The reasons behind this high rate are attributed to an ease of access to credit cards and a young population transacting On-line (Payfort Report, 2014).

The Kuwaiti population has a 60% male to 40% female ratio, lower than the GCC average. The ratio of males to females transacting on-line is not far off from the population ratio with a 70% male to 30% female ratio. The on-line buyers in their thirties represent 65% of the overall on-line transactions and make up a little over half the population. Meanwhile, 33% of the overall on-line transactions are coming from those aged 40 years or older, who represent 46% of Kuwait's total population (Payfort Report, 2014).

Unlike other GCC countries, 78% of the nationalities transacting on-line in Kuwait are from Arab descent, including local Kuwaiti citizens. About 20% of the on-line transactions are coming from other nationalities, with the remaining 2% from Western countries. Furthermore, most of the on-line buyers are located in Kuwait City, the capital of Kuwait, with 67% of the population transacting within

the most populous city in the country. The remaining cities transacting on-line represent eight per cent or less each (Payfort Report, 2014).

The most popular on-line shopping categories in Kuwait are: airline tickets, electronics, and hotel reservations, which represent a total of 54% of on-line transactions (Nielsen Report, 2014). Other popular categories in Kuwait include fashion, books, media, and household products, which total 25% of all on-line purchases. On-line credit card usage in Kuwait is the second highest in the Arab World after Saudi Arabia, with 21% of on-line buyers choosing to buy with credit cards on-line. This is largely brought on from the high credit card penetration in the country (Nielsen Report, 2014; Payfort Report, 2014).

2.5.4 B2C E-commerce in Egypt

Unlike Saudi Arabia and United Arab Emirates and Kuwait, Egypt is the most populous Arab country. About 10% of the population belong to the 55 years or higher age group while 67% belongs to the 35 years or younger age group (Payfort Report, 2014).

Egypt's population reached 85.55 million at the beginning of 2014 (Egypt Human Development Report, 2015). The proportion of Internet users in Egypt is 30 million (The Future of the Internet Economy in Egypt, 2014). The country has the most gender equal population in the Arab World with a 51% male to 49% female ratio. However, the male to female ratio transacting on-line is almost double the population ratio with a 70% male to 30% female ratio (Payfort Report, 2014). Furthermore, the on-line users are in their 30s or younger. They represent 75% of the overall on-line transactions, and make up over 65% of the population (Payfort Report, 2014). Egyptians at this age group are frequent customers in airline

bookings, travel, e-commerce, and digital goods, which represent 40% of overall on-line transactions (Payfort Report, 2014).

With Egypt being a non-expat heavy weight regional country, 99% of the on-line transactions are made by the Egyptians and the remainder is foreigners living in the country (Payfort Report, 2014). The majority of on-line buyers in Egypt is located in Cairo with more than half of total on-line transactions. The Nile Delta, Upper Egypt, and Alexandria regions comprise around 43% of the on-line buying population, with the remainder of the on-line buyers is located in The Sinai Peninsula (Payfort Report, 2014). The most popular on-line shopping categories in Egypt are: electronics, airline tickets, and fashion. They constitute a total 40% of Egypt's on-line transactions; unlike other countries, hotel reservations only make up to 6% of the total of on-line transactions, while books are higher than the regional average with 8% of the total on-line transactions (Payfort Report, 2014). With only 7% of the population being banked and only eight million credit and debit cards issued, the Egyptian users are challenged when it comes to on-line payments with over 65% relying on alternative payment methods such as pre-paid cards and bill presentment services and a 80% cash-on-delivery to 20% on-line credit card ratio (Payfort Report, 2014).

2.5.5 Critical Reflections on B2C E-commerce in the United Arab Emirates, Kingdom of Saudi Arabia, Kuwait and Egypt

A closer look at the on-line transactions by gender reflects that males adopt B2C more than females in the four Arab countries (Payfort Report, 2014). The preferred payment method in the four countries is cash-on-delivery, with a varied

low rates of on-line buyers choosing to buy with credit cards on-line, which leads to have 20% of on-line transactions made with credit cards, and 80% are still made through cash-on-delivery method although cash based transactions constitute convenient payment options for those without any other alternative (Nielsen Report, 2014; Payfort Report, 2014).

Table (2.1) shows a summary of the differences between the four major largest markets in the Arab world:

Table (2.1): Summary of the major differences between UAE, KSA, Kuwait and Egypt				
	UAE	KSA	Kuwait	Egypt
Preferred Payment Method	Cash on Delivery	Cash on Delivery	Cash on Delivery	Cash on Delivery
Credit Card Usage	22%	24%	20%	21%
Male to Female Transactions Ratio	Males (60%) Females (40%)	Males (85%) Females (15%)	Males (70%) Females (30%)	Males (70%) Females (30%)
What do they buy online	Air tickets Electronics	Air tickets Electronics	Air tickets Electronics	Electronics Air tickets
Age Group Transacting online	18-25 (38%) 26-30 (35%) 31-35 (14%) 36-40 (6%) 41-50 (5%) 51+ (2%)	18-25 (30%) 26-30 (15%) 31-35 (15%) 36-40 (9%) 41-50 (7%) 51+ (24%)	18-25 (25%) 26-30 (22%) 31-35 (20%) 36-40 (18%) 41-50 (10%) 51+ (5%)	18-25 (40%) 26-30 (30%) 31-35 (16%) 36-40 (7%) 41-50 (6%) 51+ (2%)

It is obvious from Table (2.1) above that the cash-on-delivery method has heavily impacted the e-commerce ecosystem (Anbari, 2013) because the merchants deal with this method as their main payment option. Costs can range from \$10 to \$30 per shipment due to high product returns, re-stocking and re-shelving of undelivered products, cash-handling costs, thefts, and customers abandoning payments on delivery (Anbari, 2013). Furthermore, merchants may wait weeks before they are able to settle their cash-on-delivery funds into their bank accounts (MENAP e-commerce overview, 2012).

Electronics and airline tickets were the most purchased on-line products in the four countries, which is in line with the global average for on-line buying intentions. In 2014, studies indicated that electronic equipment and airline tickets and reservations have the highest on-line buying rates among other product categories with a percentage of 48% of on-line buying is for air tickets and 34% for electronics (MENAP e-commerce overview, 2012).

The Arab countries share various similarities including religion, customs and values, history, and language (Nathan, 2009). However, they differ mainly in terms of wealth, size and their adoption to information technologies (Dehkordi *et al.*, 2011). As Table (2.2) shows, empirical studies on the factors that affect adoption of e-commerce in some Arab countries have yielded different results (Omar, 2013).

Table (2.2): Summary of the major empirical findings related to B2C adoption in Middle Eastern Arab Countries¹			
Country	Methodology	Source	Challenges
Saudi Arabia	<ul style="list-style-type: none"> ▪ Quantitative (Focus Group) <ul style="list-style-type: none"> - 2 focus groups ▪ Qualitative (Survey) <ul style="list-style-type: none"> - 270 respondents 	(Almoussa, 2013)	<ul style="list-style-type: none"> ▪ Fear of product un-arrival; ▪ Web site language; ▪ Poor or no after-sale support; ▪ Un-availability of house mailing address; ▪ High international shipping cost; ▪ No previous experience regarding online purchasing; ▪ Payment system.
Libya	<ul style="list-style-type: none"> ▪ Quantitative (Interviews) ▪ Qualitative (Survey) 	(Omar, 2013)	<ul style="list-style-type: none"> ▪ Technical Problems ▪ Lack of trust
Saudi Arabia Qatar, Kuwait United Arab Emirates ▪ Yemen	--	(Nathan, 2009)	<ul style="list-style-type: none"> ▪ Knowledge ▪ Perceived Risk ▪ Trust

As the e-commerce industry continues to grow significantly across the world, the importance of understanding the similarities and differences among the consumers in diverse regions of the world is vital for businesses to stay relevant and sustain in the competitive market (MacGregor and Vrazalic, 2005). According to a recent research in non-Arab countries, for example, barriers to e-commerce success include Internet access, shipping costs, high taxes and problematic delivery logistics. Asia is the farthest down the e-commerce maturity curve (Nielsen Report, 2014).

¹ Table (2.1) is developed by the researcher after gathering information from (Almoussa, 2013; Nathan, 2009; Omar, 2013).

Like Arab countries, privacy and security are worries for these global respondents who are wary of giving their credit card information online (Ma'aruf and Abdulkadir, 2012; Slade *et al.*, 2015). To help alleviate concerns, on-line marketers should assure shoppers that their information will be kept confidential by including security notifications at checkout. Shipping costs and confusing websites are other barriers for these skeptical shoppers. Free shipping is important too, as is clarity of website presentation (Nielsen Report, 2014).

In non-Arab countries, some countries boast the largest percentages of respondents using a computer to shop online; for example, North America (84%), Latin America (82%) and Asia-Pacific (81%) exceeding the global average of 80%. European respondents come up just below the global figure at 78%. Survey respondents in the Middle East/Africa reported the lowest computer usage at 60% (Nielsen Report, 2014).

Moreover, global online purchase intention rates in 2014 have doubled since 2011 for event tickets (41%), electronic books (34%), sporting goods (31%), toys/dolls (29%), videos/DVDs/games (28%), music (27%), pet supplies (21%)*, flowers (18%), cars/accessories (17%) and alcoholic drinks (17%). And rates have tripled in these three years for computer software (27%) and nearly tripled for baby supplies (20%) (Nielsen Report, 2014).

General recommendations for non- Arab countries integrate increasing digital engagement, then, retailers must deliver on multiple shopper needs for lower prices, quality choices and peace of mind. Easy-to-navigate websites that offer a wide selection of well-described, unique products with plenty of images and have proper security protocols are a must (Nielsen Report, 2014).

2.6 Chapter Summary

This chapter was divided into four sections: the first section presents e-commerce types, Business-to-Consumer (B2C) adoption benefits, Business-to-Consumer (B2C) adoption challenges, B2C in the Arab World with a special focus on the United Arab Emirates (UAE), the Kingdom of Saudi Arabia (KSA), Kuwait and Egypt which are considered the region's largest markets. In addition, the chapter has also presented a critical reflection on these four countries.

The critical review to the literature has revealed that there are many existing research gaps that will be addressed by the next chapter. Bridging these gaps is the major catalyst in developing the hypotheses of this study. However, it is of paramount importance to have a closer look at the Egyptian milieu before developing the hypotheses. Accordingly, the following section will present a closer overview of the Egyptian context.

Because the scope of this study focuses on B2C in Egypt, the following chapter will cover an overview of Egypt's profile, strategic implementations and current situation of e-commerce in Egypt, the Egyptian cultural context and some critical reflections on the B2C status in Egypt in addition to identifying research gaps.

CHAPTER THREE

E-COMMERCE: THE EGYPTIAN CONTEXT

3.1 Introduction

This chapter is considered a continuation of Chapter Two because it covers the current e-commerce situation in Egypt and presents an overview of the Egyptian context. It has been presented in Chapter Two that Egypt is one of the Arab region's largest markets (PayFort Report, 2014). This chapter provides a country profile about Egypt as a developing country and the current status of B2C in terms of strategic implementations adopted by the Egyptian government. Picking up from Chapter One, which defined the research problem, this chapter further provides important statistics and data that reflect the status of B2C e-commerce in Egypt. The chapter concludes by identifying the research gaps based on the reviewed literature and the analysed Egyptian context.

3.2 Egypt Profile

The Arab Republic of Egypt¹ is located in the North-Eastern and South-Western corners of Africa and Asia respectively. It is bounded to the North by the Mediterranean Sea, from the east by Palestine and Israel, from the South by The Sudan, and from the West by Libya. Egypt's borders run about 1,085 km from the North to the South and about 1,255 km from the East to the West encompassing an almost square-shaped total area of about one million square kilometres. The

¹ Please refer to *Appendix No. I* for Egypt's maps.

average Altitude is 50 ft below sea level; the highest point is Mount St. Catherine at a high of 8,668 ft and the lowest point is the Qattara Depression at 436 ft below sea level. As Figure (3.1) reflects, the Nile Delta is the only delta in Egypt. It is 161 km long, 250 km wide and triangular in shape. There are five major oases in Egypt: Farafra, Bahria, Dakhla, Khargah and Siwa (UNDP, 2015). According to (UNDP, 2015: 1)

“Egypt is divided into four major zones: The Nile Valley and The Delta, which extend from the north of the valley to the Mediterranean Sea. They are divided into Upper Egypt and Lower Egypt, which extend from Wadi Halfa to the south of Cairo and from the North of Cairo to the Mediterranean Sea. The River Nile in the North is divided into two branches, Dumiat (Damietta) and Rashid (Rosetta), which embrace the highly fertile agricultural lands of the Delta. The River Nile is one of the longest rivers in the world, stretching for around 6,738 km. The Egyptians depend primarily on the Nile as the main source for water to drink and irrigate their crops. The Western Desert extends from the Nile Valley in the East to the Libyan borders in the West, and from the Mediterranean in the North to Egypt's Southern borders. It is divided into: The Northern Section, which includes the Coastal Plain, the Northern Plateau, the Great Depression, Natroun Valley and Baharia Oasis. The Southern Section includes Farafra, Kharga, Dakhla, and el-Owainat in the far south. The Eastern Desert extends from the Nile Valley in the West to the Red Sea, the Gulf of Suez, and the Suez Canal in the East, and from Lake Manzala on the Mediterranean in the North to Egypt's border with The Sudan in the South. The Eastern Desert is marked with the Eastern Mountains that extend along the Red Sea with peaks that rise to about 3000 feet above sea level. This desert is rich with Egyptian natural resources, which include various ores such as gold, coal, and oil. The Sinai Peninsula is almost triangular in shape, with its base at the Mediterranean to the North and its tip southward at Ras Mohammed. The Gulf of Aqaba lies to the East and the Gulf of Suez and the Suez Canal to the West.” (UNDP, 2015:1).

The sheer size of population has transformed Egypt into a consumer market of significant importance as witnessed by the arrival of many global consumer brands and the sharp expansion of retail sales. The fact that 56.5 per cent of the

Egyptian population is between the age group of 15 and 60 years old has also impacted investment trends. According to the latest census up to the date of writing this thesis, which was conducted by the Egyptian Central Agency for Public Mobilisation and Statistics (CAPMAS, 2014), the total number of females in Egypt is 42,994,853, and the total number of males is 42,555,147 in 2014 (CAPMAS, 2014).



Figure 3.1: Egypt's Map (Adopted from acc.teachmideast.org)

The strategic geographical location of Egypt allows it to enjoy a high proximity to markets in Europe, the Arab world, Africa, and the Indian Sub-continent. These markets are all readily accessible from Egypt, a matter that played a role in

increasing Egypt's trade and off-line commerce with other countries, and consequently, the Egyptian economic level (Hasheesh, On-line, 2012: 1).

After the January 25th 2011 Revolution, there were many expectations of changes to the Egyptian economic, political and social levels. However, because it is still very early at the time being to track prospect changes, or even to evaluate their effects, there is an urgent need to shed light on the overall Egyptian economic status that has led to the current lagging on the diffusion and adaption of e-commerce in this North African country. Thus, the following section presents an overview of Egypt.

In 2004, the government of Prime Minister Ahmed Nazif pursued a set of economic reforms. More than four decades ago, Egypt began its path towards democratisation and a liberal market economy with late president Anwar al-Sadat's 1975 "*infitah*," or the open-door policy (Bertelmann, 2012:3). The Egyptian economy was affected by the global economic downturn, but later it started to show signs of improvement in privatisation, liberalisation and furthering the rule of law. According to a statement issued by the International Monetary Fund (IMF) on February 16, 2010, the Egyptian economy was resilient to the crisis because of "limited direct exposure to structured products and low levels of financial integration with world financial markets" (Bertelmann, 2012: 3). For example, Egypt has been a member of the Greater Arab Free Trade Area (GAFTA) and the Common Market for Eastern and Southern Africa (COMESA) since 1998. In addition, it is one of the four signatory states of the Agadir Agreement that was approved in 2004 to establish a free trade zone between the

Arab Mediterranean countries, which include Morocco, Tunisia, and Jordan. In 2005, Egypt signed a free trade agreement with Turkey (El Gawdy, 2005), but it was cancelled after January 25th 2011 revolution (Egypt Human Development Report, 2015).

Additionally, Egypt is a member of the southern group of the European Neighborhood Policy (ENP), which was founded in 2004, and the Union for the Mediterranean, which was established in 2008. In 2008, Egypt signed a memorandum of understanding (MoU) with the European Union (EU) on energy co-operation. Egypt is also opening up increasingly to international markets, with, for example, negotiations over a free trade agreement with the Southern Cone Common Market [Mercosur] countries (El Gawdy, 2005).

Regarding the socio-economic status, over-population, poverty and illiteracy are the most important socio-economic obstacles impeding Egypt's transformation (Egypt Human Development Report, 2015). Egypt is the most populous Arab country with an estimated population of 85.55 million with around 18.5 per cent of Egypt's population living below poverty line (The Future of the Internet Economy in Egypt, 2014). Meanwhile, population growth stands at 1.8 per cent, leading to a youth bulge with related problems such as providing education, jobs, and healthcare services. According to the 2015 Egypt Human Development Report, nearly 20 million Egyptians are between the 18 and 29 years old age groups (Egypt Human Development Report, 2015).

3.3 Strategic Implementations and Current Situation

It has been reported that the Egyptian regime lacks the political commitment and the institutional capacity to design and carry out comprehensive political, economic and social reform programmes (Bertelsmann, 2011).

Since the January 25th 2011 Revolution, Egypt has gone through many changes; a revolution which brought the people's demands of “bread, freedom and social justice” to world attention. Egypt's ex-president Mohammad Morsi, who hailed from the Muslim Brotherhood (MB), was ousted by a popular revolt in 2013 because his political performance was the worst ever in the country's modern history (State Information Service, 2015). Throughout his one-year tenure: The Egyptians were pitted against one another; the MB fast-tracked its empowerment scheme; the presidency antagonised all state institutions including the judiciary, the army, the police and the media (State Information Service, 2015).

On June 30, 2013, the Egyptians rose in their millions calling for the ousting of Morsi and calling for early presidential elections. Abdel Fattah El Sisi, the former defense chief, was then elected in June 2014 (State Information Service, 2015). It is worth mentioning that since January 2011 till June 2014, the situation in Egypt can be characterised as a tense with poor economic performance and deteriorating security. Accordingly, the major strategic priorities for the newly elected government should include the following eight points (Bertelmann, 2012):

[1] “Placing the accreditation of political parties and the supervision of elections back under the auspices of the independent judiciary or an independent commission”;

- [2] “Taking public and opposition demands for political, economic and social reforms more seriously and make reforms a shared agenda”;
- [3] “Working against widening social gaps, and increase the allocation of resources to education for a fast-growing young population in both urban and rural areas”;
- [4] “Paying attention to internal politics and internal developments in Egypt”;
- [5] “Supporting free elections”;
- [6] “Improving communications and strengthen democratic opposition parties and civil society”;
- [7] “Fostering a free press”; and
- [8] “Targeting aid and increasing development aid that targets the poor, the younger generations and Egyptian women in particular”. (Bertelmann, 2012: 36).

Although it is still very early to evaluate the performance of the newly elected government, it is clear that promising initiatives have been activated in terms of drafting a new investment law to encourage foreign investors. However, it is obvious that e-commerce law and practices need more attention from the present Cairo government, especially for the previously issued e-commerce law.

In October 1997, the Internet Society of Egypt: E-commerce Committee (ISE/E2C) was established to catalyse and spread awareness of e-commerce in the country (The Future of the Internet Economy in Egypt, 2014). Yet, one can argue that the effect and role of (ISE/E2C) is nearly absent considering the very low adoption of e-commerce by Egyptian consumers because only two per cent of Internet users buy products and services on-line (The Future of the Internet Economy in Egypt, 2014), which means that only 600,000 Egyptians shop on-line out of 85.55 million; a fact which gives a clear indication of the low rate of on-line shopping users compared to the total number of population.

E-commerce holds many benefits for the Egyptian economy as a medium for foreign trade. It is arguable that the e-commerce can be a catalyst for boosting the Egyptian exports and balance of trade, which will subsequently have a positive impact on the national economy (Al-Qeisi and Hegazy, 2015). It will also help reduce domestic debt and inflation rates, and increase the gross national product (GNP) (Aly *et al.*, 2010). Moreover, not only will the e-commerce have an indirect effect on the local economy, it will enable Egypt to experience a more open economy and increase its competitive advantages worldwide as well (Aly *et al.*, 2010).

The e-commerce also bears strong socio-economic implications for the Egyptians (Aly *et al.*, 2010). At the micro-economic level, the Egyptians, who have access to the technology, will be able to conduct business transactions worldwide, trade products across national borders, and elevate their own standard of living and quality of life (Al-Qeisi and Hegazy, 2015; El Gawady, 2005). As a result, the e-commerce will help create many well-paid jobs and launch new businesses ventures. For example, an Egyptian entrepreneur will have the opportunity to establish a small, medium or even micro-sized enterprise with a fast access to global markets (Bianchi *et al.*, 2012).

Generally speaking, the diffusion and comprehensive usage of the e-commerce is directly related to the growth of Internet and ICT technologies, and the growth of the Internet depends on the following three factors (Bianchi *et al.*, 2012):

The first factor is the state of development and spread of the tele-communications infrastructure over which the Internet operates. Generally, in countries with well-developed tele-communications infrastructures, the Internet tends to be growing

quickly (Bianchi *et al.*, 2012). The second factor is the skill level of the population and the ability to deal with (IT) applications. The third factor, perhaps the most important one, is the demand for applications, such as e-commerce, which is conducted via the Internet. Such demand can be met only if there is a legal and commercial framework that facilitates the development of such applications. It is apparent that the e-commerce in Egypt does not yet enjoy the same conditions in terms of consumer protection, privacy and security (Bianchi *et al.*, 2012).

Currently, it is arguable that Egypt has the basic IT infrastructure to start boosting the e-commerce applications among the Internet users. There is an increase in the number of companies working in the information and communications technologies in Egypt, a matter which can lay the foundation and support the infrastructure for the e-commerce in the country (ICT Indicators Report, 2015). Still, the former aspects related to the skill level of population and the demand for e-commerce needs to be integrated into a strategic national plan to ensure a comprehensive diffusion of the e-commerce applications. For more elaboration, there are currently only 30 million Internet users out of 85.55 million making around 35.08% of the overall Egyptian population (The Future of the Internet Economy in Egypt, 2014).

Moreover, after reviewing the literature, it is arguable that Egypt has five initiatives that can support a large-scale comprehensive adoption of the e-commerce on the long run: First, the government has taken several initiatives for promoting e-commerce (ICT Indicators Report, 2014). For illustration, the government has issued a draft bill for the e-commerce. Furthermore, according to Ministry of Information and Communications Technology's Information Centre

(2012), the number of companies working in the information and communications technologies in Egypt is increasing as Figure (3.2) reflects an increase in the number of Internet use in Egypt.

Second, in Egypt there is more than one entity that is specialised in measuring the information society at the local level among which are the Central Agency for Public Mobilisation and Statistics (CAPMAS), the National Tele-communications Regularity Authority (NTRA), and the Information Technology Industry Development Agency (ITIDA) (ICT Indicators Report, 2014). Moreover, the Ministry of Communications and Information Technology (MCIT) conducts an annual survey to measure the different patterns of ICT usage in Egyptian households, identify major characteristics of ICT users, and identify the major obstacles that impede ICT diffusion across Egypt (2012).

Third, eighteen Arab countries approved a programme for establishing the Arab Free Trade Area (AFTA), which came into effect in January 1998 and led to the progressive elimination of all import duties and barriers by 2008. This initiative, coupled with innovative trading practices, has been taken to increase regional trade (Zarrouk and Zallio, 2000).

Fourth, in an initiative to promote the IT usage in Egypt, the government has established the Information and Decision Support Centres (IDSCs) in each one of the country's 27 governorates. The aim behind this move was to diffuse the use of IT to administrators outside the two major cities of Cairo and Alexandria (Bernd Carsten *et al.*, 2010).

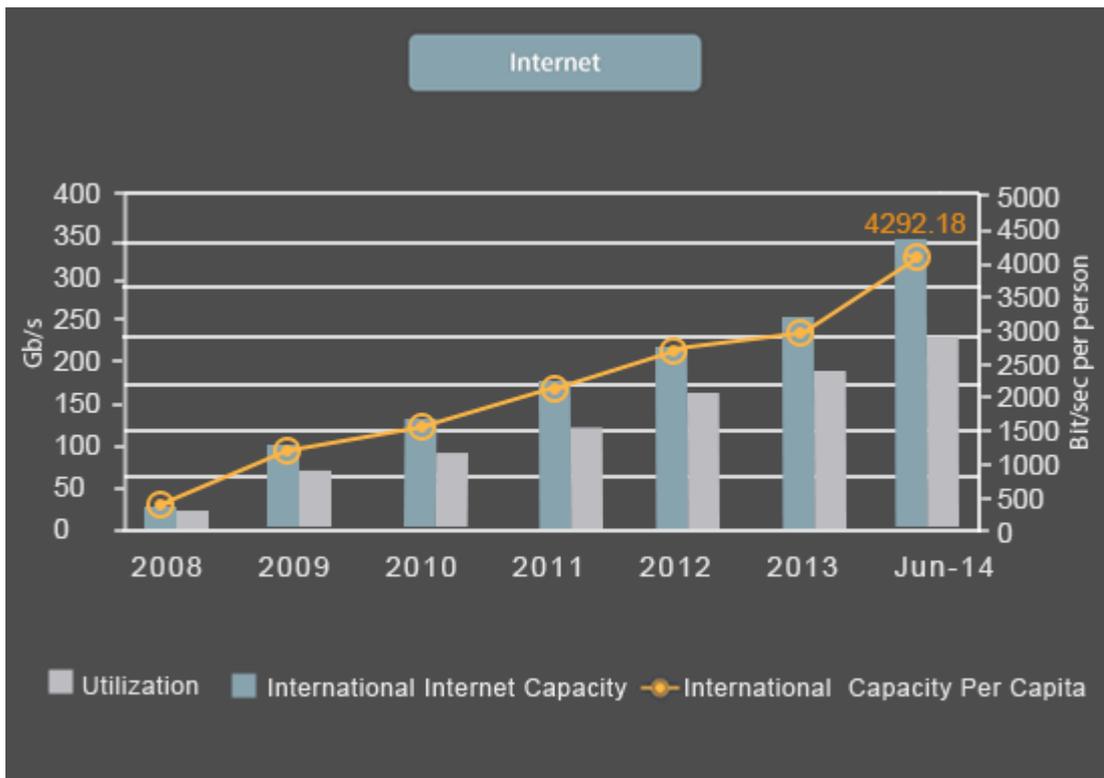


Figure 3.2: Internet Utilisation in Egypt from 2008 - 2014

Adopted from (Ministry of Communications and Information Technology website, Egypt, 2015) ².

However, it is worth mentioning that the lack of empowering ICT structure among citizens at the macro-level is reflected at the organisational level. For example, according to Bernd Carsten *et al.* (2010) the Egyptian education system faces serious problems because the level of illiteracy among the Egyptian population is close to 30 per cent. Literacy is a concept that is hard to define. But, literacy as a condition of participation in an information-based society is “a multi-faceted competence that requires intensive educational effort, and it will be an unrealistic

² Source: Ministry of Information and Communications Technology. Online. Available on: www.mcit.gov.eg

assumption that the mere provision of technology will solve the problem of illiteracy” (Carsten *et al.*, 2010: 96).

Fifth, Egypt has adopted a strict strategy to protect digital identity for organisations and individuals to enable the e-business, e-government and e-commerce activities (Yearbook, 2012). In 2009, Egypt launched the Root Certificate Authority Trust (Root CA) Centre at the Information Technology Industry Development Agency (Yearbook, 2012). The Root CA centre is considered as the "trust anchor for all relying parties within that domain. Furthermore, it is the legal and national base upon which all the IT applications, e-commerce and e-business transactions are made. It also provides cross recognition across Egypt and to other Root CAs in different nations" (ITIDA, On-line, 2012).

A critical analysis to the former five aspects can consider them as significant steps towards having an adequate infrastructure that can enable a macro-adoption of the e-commerce applications in Egypt. However, long-term strategies have been ignored by both the private and public sectors. In September 2011, the Ministry of Communications and Information Technology launched the ‘IT House Initiative’ to serve the technology path projects that aim at offering comprehensive services including training courses, e-government services, and SMEs service (ITIDA, Online, 2012). Nine IT houses were founded in the North Sinai Governorate at the first phase of the project and now the number of these IT houses has reached seven so far. Meanwhile, the number of IT clubs reached 2,163 (ICT Indicators, 2015). It is worth mentioning that the number of IT clubs connected to the Internet has reached 1,955 (ICT Indicators, 2015). Currently, it is hard to find concrete results regarding the outcome of these

projects, or long-term plans for sustainability, which further reflect the lack of strategic vision towards the adoption of B2C e-commerce in Egypt.

On October 26, 2011, the United Nations Conference on Trade and Development (UNCTAD) and the Ministry of Communications and Information Technology, held a key conference at the Geneva-based UN Headquarters (Yearbook of the Ministry of Communication and Information Technology, 2011). The participants of the conference discussed the recommendations relating to the “ICT Policy Review of Egypt through a study of the ICT policies” that were adopted by the then Cairo government, as well as Egypt's main ICT achievements and challenges (Yearbook of the Ministry of Communication and Information Technology, 2011:25). The participants praised Egypt's accomplishments in terms of creating a vibrant ICT sector and adopting policies that were related to the liberalisation of the ICT sector.

The following Table (3.1) reflects Internet penetration position of Egypt in a global setting, the table covers three large regions represented in Europe, Asia Pacific, Middle East/Africa, Latin America and North America. The data was obtained from Nielsen Global Survey³ of e-commerce, which was conducted between February 17th and March 7th 2014 (Nielsen Report, 2014). The following Table (3.1) shows that Internet penetration rates vary by country.

³ The Nielsen Global Survey of E-commerce polled more than 30,000 consumers in 60 countries throughout Asia-Pacific, Europe, Latin America, the Middle East, Africa and North America. The sample has quotas based on age and sex for each country based on its Internet users and is weighted to be representative of Internet consumers. It has a margin of error of ± 0.6 percent. This Nielsen survey is based only on the behavior of respondents with online access. Internet penetration rates vary by country. For more information, visit www.nielsen.com.

Table (3.1): Internet Penetration Position of Egypt in a Global Setting	
Market	Internet Penetration %
United Kingdom (Europe)	84%
Sweden (Europe)	93%
Norway (Europe)	97%
Germany (Europe)	83%
Italy (Europe)	58%
Japan (Asia-Pacific)	80%
Taiwan (Asia-Pacific)	75%
Hong Kong (Asia-Pacific)	75%
South Korea (Asia-Pacific)	83%
China (Asia-Pacific)	40%
Australia (Asia-Pacific)	89%
Brazil (Latin America)	46%
Argentina (Latin America)	66%
Venezuela (Latin America)	41%
Chile (Latin America)	59%
Egypt (Middle East/Africa)	36%
Saudi Arabia (Middle East/Africa)	49%
United Arab Emirates (Middle East/Africa)	71%
Pakistan (Middle East/Africa)	15%
Canada (North America)	83%
United States (North America)	78%

Table (3.1) reflects that the highest global Internet penetration rate was recorded in Norway with 97% penetration rate. The least penetration rate is in Pakistan, which reached 15% penetration rate. Egypt recorded 36% penetration rate (Nielsen Report, 2014).

Accordingly, recommendations by the Egyptian Ministry of Communication and Information Technology related to the ICT sector concluded that Egypt needed to take the following ten steps:

- [1] Make policies more demand-driven;
- [2] Make ICT policies more inclusive;
- [3] Work in greater partnership with the private sector;
- [4] Move towards exports of higher value-added services;
- [5] Leverage foreign skills and expertise;

- [6] Strengthen coordination among government entities;
- [7] Make use of the latest technology;
- [8] Set quantifiable targets and continue to monitor progress;
- [9] Establish a long term vision; and
- [10] Support the role of small and medium-sized enterprises (SMEs) in future strategies and plans (Yearbook of the Ministry of Communication and Information Technology, 2011: 6).

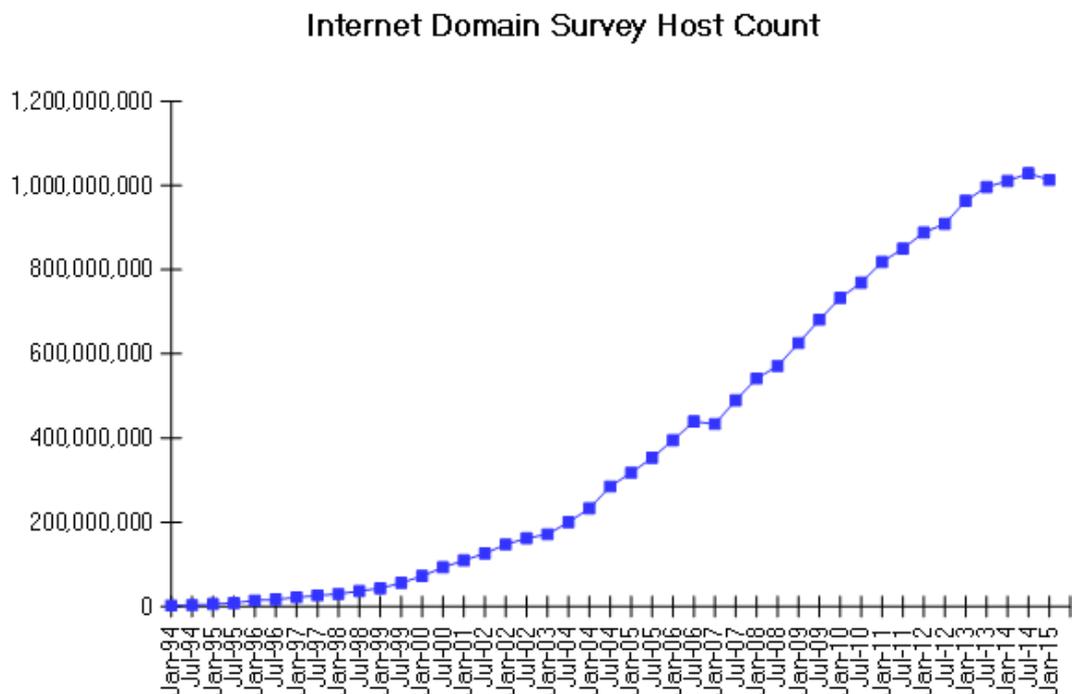
It is worth mentioning that data related to the integration and application of the conference's recommendations could not be found, a matter that further supports the presented argument and further reflects the lack of an Egyptian long-term strategic plan towards the adoption of e-commerce.

3.4 E-commerce and Egyptian Consumer Behaviour

As a developing nation with an economy in transition, Egypt has invested in building its information technology infrastructure (ICT Indicators Report, 2014). In 1994, the Internet became a priority for the public and private sectors as a tool for business and socio-economic development, which included the base for the practice of e-commerce (Journal of the American Chamber of Commerce in Egypt, 2012: 26). According to a recent report by the Internet Systems Consortium⁴, which usually surveys Internet users around the world, there is a rapid increase in Internet usage in Egypt. In January 2015, Egypt reached 2,972,493 domain hosts with an increase in the number of Internet hosts around

⁴ Internet Systems Consortium, Inc. (ISC) is a non-profit public benefit corporation dedicated to supporting the infrastructure of the universal connected self-organizing Internet—and the autonomy of its participants—by developing and maintaining core production quality software, protocols, and operations. It is available on <http://www.isc.org>.

the world which reached 1,012,706,608 domain hosts in January 2015 (Internet Systems Consortium, On-line, 2015). The increase in domain hosts in Egypt indicates a diffusion of using the Internet as domain hosts increased in one year from January 2014 until January 2015 to reach 1,108,505 hosts (Internet Systems Consortium, On-line, 2015).



Source: Internet Systems Consortium (www.isc.org)

**Figure 3.3 reflects an increase in the number of Internet hosts around the world
(Adopted from <http://www.isc.org>, 2015)**

According to the Egyptian Ministry of Communications and Information Technology, Egypt's Internet bandwidth capacity has increased by 71 per cent over the past years, a matter which led to a faster and more reliable Internet access and usage (Journal of the American Chamber of Commerce in Egypt, 2012: 26).

In addition, according to the Ministry's figures, "mobile subscriptions increase 7.6% per cent as it reached 101.76 million subscribers in May 2014 to reach almost 119.69% per cent penetration (ICT Report, 2014: 2). In addition, Egypt was one of the first African countries to launch the third generation (3G) mobile services, a fact that further supports that infrastructure required for the adaptation of the B2C e-commerce in Egypt (Journal of the American Chamber of Commerce in Egypt, 2012: 27).

Recently, the availability of fast Internet access and 3G mobile services has helped diffuse the use of social media access and utilisation (PayFort Report, 2014). Recently, the rise of social media has allowed people's content to reach a larger audience than ever before, at a faster rate than any other medium. The Egyptians now have the ability to interact with anyone on-line, allowing consumers to influence each others purchasing decisions (PayFort Report, 2014). The Facebook and Twitter are becoming a strong social phenomenon and a vital means of communications among the Egyptians and have led to the flourishing of some forms of what Al-Sahouly (2012) calls 'haphazard e-purchasing practices'. In social media web pages, the Egyptians can conduct many socialisation activities: they can chat, contact friends, notify each other with updates, share photos, events, search for lost friends, and other means of communication to the extent that it has been argued that the Facebook was a vital medium that strengthened the Egyptians' political engagement and played a key role in setting the stage for the January 25th revolution in 2011. In addition, people can buy products, advertise and even sell some goods via the Facebook (Al Sahouly, 2012).

Furthermore, it has been observed that social networks are considered an existing medium for marketing and advertising (Al-Sahouly, 2012; Guo, 2011). It can be clearly observed that there are many selling and buying activities that are carried out via the Facebook, which can be considered an informal form of B2C e-commerce adaption. An individual can announce on a Facebook page the possibility of ordering certain products from abroad, or can state that there are certain products or services for sale. Through sharing means of contacts, which in most cases are conducted via phone, the supplier can contact the seller i.e. the individual and order a specific product or service. According to Al-Sahouly (2012), the latter conduct is what is called 'haphazard e-purchasing practices', which can be operationally defined as the availability of personal entity that advertises for its goods or services on a social medium. These personal entities should not necessarily be identified as specialised sellers, but rather as a person, who can ensure the availability of a specific product or service to the prospect consumers (Al-Sahouly, 2012).

In Egypt, the B2C e-commerce adoption is related to the level of ICT acquisition or adoption. Therefore, a thorough investigation should be conducted to identify the factors affecting ICT (Information Engineering and Electronic Business, 2012). Generally speaking, organisations adopting B2C e-commerce in developing nations face many problems such as the lack of tele-communications infrastructure, the lack of qualified staff to develop and support e-commerce sites, the lack of skills among consumers that are needed to use the Internet, the lack of timely and reliable systems for the delivery of physical goods, low bank account

and credit card penetration, low income, and low computer and Internet penetration (Kapurubandara, 2009).

A 13-year-old research concluded that the main factors barring the use of e-commerce in the Arab countries, including Egypt, are the lack of awareness and education, the market size, e-commerce infrastructure, tele-communications infrastructure, legal system, government issues, affordability/cost structure and social and psychological elements (El-Nawawy, 1999). Recently, and based on the above literature, it can be argued that there are still many governmental initiatives to adopt ICT at all levels in Egypt. Although thirteen years have passed since the introduction of El-Nawawy's analysis in 1999, the reality is still far behind. There is a lot that needs to be done by the public and private sectors to gain the required benefits because many of the highlighted factors are still barring large scale adoption of the e-commerce in Egypt.

Part of the reason for this situation is the fact that Egypt does not have real credit card system that reaches out to the majority of the Egyptians either because the commercial banks offer this kind of service only to elite customers, or due to the high level of illiteracy among Egyptians (ICT Indicators, 2015). Egypt as well does not have an effective centralised settlement system and the inherent attitude of the Egyptians is to pay cash for what they buy (El-Said *et al.*, 2009). The Egyptians are also reluctant to get involved in the Internet banking to a great extent if it is available at all, where most of the local banks are still in the process of introducing this service, and even the uptake of the service for the banks that

offer it is by all means does not match the investments and the expectations (Paypal Report, 2015; Pones *et al.*, 2003).

According to the 2014 Report issued by the Payfort's Middle East State of Payment, only 7% of the Egyptian population being banked and only eight million credit and debit cards issued. The Egyptian users are challenged when it comes to the on-line payments with over 65% relying on alternative payment methods such as pre-paid cards and bill presentment services and a 80% cash-on-delivery to 20% on-line credit card ratio (Payfort's Report, 2014).

In Egypt, where the people are inclined to trust their locality because of the personal touch of providing the service and the social bonds that can come out of this type of transaction (El-Nawawy, 1999; El-Said *et al.*, 2009). In addition, the habit of paying cash for what they buy explains why smart card as an instrument for buying things is not readily popular among the Egyptians because their majority comes from lower and middle classes, whose members have less access and usage of these cards. In addition, the Egyptian upper class people use them to pay for their shopping as a way of showing their social status (El-Said *et al.*, 2009). Trust makes consumers comfortable in sharing personal information, making purchases, and acting on web vendor advice, all of which are essential behaviours to spread the e-commerce adoption (Harris and Goode, 2010; Liao and Keng, 2013). Many researchers, investigating trust models, argue that there may be a relationship between trust and culture, which needs to be further investigated (Geffen, 2000; Lee and Turban, 2001; Shankar *et al.*, 2002).

As for the Egyptian consumers, El-Said *et al.*, (2009) argued that the role of trust, uncertainty avoidance, on-line store familiarity and reputation are the main silent factors affecting the perception of Egyptian consumers towards e-commerce. El-Said *et al.*, (2009) further highlighted "the significant role of the on-line store's perceived familiarity and reputation as the main antecedents of on-line trust" (El-Said, 2009: 34); the relationship between trust and its two antecedents is found to be culturally sensitive. The high uncertainty avoidance of the consumer is found to be associated with a stronger effect of the store's reputation on trust, and a stronger effect of the store's familiarity on trust (el-Said, 2009).

In Egypt, the majority of the e-commerce transactions have only adopted basic applications. It widely adopted the most common e-commerce technologies (e-mail and the Internet) as additional marketing tools to display the company's products and services information, rather than an e-commerce platform to enable on-line transactions (Paypal Report, 2015; Pones *et al.*, 2003). The majority of on-line buyers in Egypt are located in Cairo with more than 50% of the total on-line transactions (Payfort's Middle East State of Payment Report, 2014). The Nile Delta (20%), Upper Egypt (13%), and Alexandria (10%) regions comprise around 43% of the on-line buying population, with the remainder of on-line buyers is located in Sinai (Payfort's Middle East State of Payment Report, 2014).

The major 12 barriers that hinder the e-commerce adoption in Egypt from the perspective of the local consumers are as follows:

[1] Lack of consumer's awareness; companies working in the e-commerce domain are still laying the foundation for it; [2] the number of Internet users is

not comprehensively spread across the country; [3] the non-existence of an appropriate and secure e-commerce-enabled environment is a discouragement to attempting the e-commerce; [4] lack of secure electronic compliance; [5] lack of national strategic telecommunication planning; [6] lack of financial services and infrastructure, [7] lack of trust; [8] resistance to change; cultural factor that plays a role in resisting new technological applications; [9] improper legislation, policies and business ethics; [10] language barriers; [11] lack of a wide spread credit system usage among the Egyptians; and [12] unavailability of on-line financial information (Rashid and Al Sahouly, 2012).

These twelve factors represent the Egyptian consumers' perspectives towards what they perceive as obstacles that hinder the adoption of e-commerce in Egypt (Rashid and Al-Sahouly, 2012).

Regarding the current forms of B2C adoptions in Egypt, they can be classified into two major types: First, click-and-mortars who respond to consumer demand through the off-line and on-line stores; second, catalogue firms that present their printed catalogues on the web (Rashid and Al Sahouly, 2012). The payment is either conducted on-line via credit cards prior to receiving the product or in cash when the customers get the product that is delivered at their home. For most cases, those sellers advertise for brand products and designers whose products and styles are not yet available in Egypt (Rashid and Al Sahouly, 2012).

Furthermore, among the famous websites in Egypt that are engaged in the e-selling are *Otlobmall.com*; *nfsak.com*; *souq.com*; *styletreasure.com*; *mazika2day.com*. The most famous entity is *souq.com*, which was established in

2005 to become the largest e-commerce site in the Arab world covering Saudi Arabia, the United Arab Emirates (UAE), Jordan and Egypt (Souq.com, 2012). Souq.com is the channel where thousands of regional buyers and sellers meet on a daily basis to sell and buy products over a trusted platform that offers both various local payment options and integrated delivery methods catered to the markets that they serve (Souq.com, 2012).

Another on-line retailer in Egypt is otlobmall.com, which allows users to shop on-line for a variety of products in different categories, including electronics, household appliances, mobile phones, cosmetics, sports gear, jewelry, apparel, books and magazines, and gifts. All products purchased through otlobmall.com are delivered directly to the purchaser's home or designated delivery address and can be paid for either on-line or in cash on delivery (Otlobmall, 2010).

Precise figures for the e-commerce in Egypt are elusive, but according to the Future of the Internet Economy in Egypt Report only 600,000 are buying on-line (2014). Mr. Omar Soudodi, the General Manager of Souq.com Egypt, has said that the biggest advantage of the B2C e-commerce in Egypt is "the decentralisation" that is possible with the e-commerce because it allows companies to reach customers outside of Cairo and Alexandria (Mahmoud, 2012: 40). Recent research results concluded that only two per cent of Egyptian Internet users buy on-line, and pay their bills via the Internet (The Future of the Internet Economy in Egypt, 2014). The literature has revealed that the most purchased product category over the Internet is electronic gadgets (Arab Advisors, 2012) followed by airline tickets and cosmetics, which constitute together the most

popular on-line shopping categories in the country with a total of 40% of Egyptian on-line transactions (Payfort's Middle East State of Payment report, 2014). On the other hand, hotel reservations only make up 6% of total on-line transactions in Egypt, while purchasing books on-line is higher than the regional average with 8% of Egypt's total on-line transactions (The Future of the Internet Economy in Egypt, 2014).

According to the 2014 ICT Indicators Report that was published by the Ministry of Communications and Information Technology, the annual Internet penetration growth rate in Egypt is 6.53% (ICT Indicators, 2014). The report also indicated a monthly increase in the penetration rate. In fact, the latter point can benefit the diffusion of B2C e-commerce adoption in Egypt if supported with strategic plans (The Future of the Internet Economy in Egypt, 2014).

Ghada Refaat el Said *et al.*, (2009) said that in spite of the significant growth in the usage of the Internet and the value added services, there were still several challenges that the Internet community was facing. These challenges, many of which are common among Arab, African, and developing countries, include:

[1] Maintaining the balance between preserving the culture and traditions of the local community and empowering it to interact effectively with the rest of the world;

[2] Increasing Internet accessibility for the community at an affordable price;

[3] Securing sufficient financial resources both from the public and the private sectors to ensure the sustainability of developments;

[4] Updating the legislations to work in line with internet service;

[5] Arabising and providing adequate Arabic information content on the Internet in key sectors including education, business, and trade services. This will increase the societal Internet penetration drastically;

[6] Internet security and protecting the individual privacy; and

[7] Providing adequate training and technical assistance to enable users especially professionals to make the best use of the Internet technologies in their line of work (el-Said *et al.*, 2009).

3.5 The Egyptian Legal Context

Furthermore, the E-Signature Law, which was issued in 2004 to establish the Information Technology Industry Development Agency (ITIDA), supports the Egyptian e-commerce industry by securing the Internet as a legally viable medium for on-line financial activities. This means that a buyer does not need to physically sign a document when entering into a transaction on-line. On September 28, 2009, the then Prime Minister, Ahmed Nazif, attended the launching of the e-signature services for the public and private sectors and the inauguration of the Egyptian Root-CA Trust Centre, marking the e-signature authorisation by the Information Technology Industry Development Agency (ITIDA). As a supervisory body for electronic signature, the ITIDA operates the Egyptian Root CA and the E-Signature CA Licensing Unit. (ITIDA, On-line, 2012).

However, among the barriers of the e-commerce adoption in Egypt is the pending of a comprehensive approval of e-signatures due to lack of trust. In 2001, Egypt was the first Arab country to accept the European Union's 1999 initiative regarding the use of the e-signature. But a comprehensive activation and adaption of e-signature regarding marriage contract and large national contracts is a matter that is still needed to further strengthen the distrust issue among the Egyptians towards e-signatures (el-Hayat Digital Newspaper, September 2012). The deactivated legal laws is considered a major obstacle that impedes the progress of the diffusion of the B2C e-commerce in Egypt.

Table (3.2) reflects an overall perspective from 2007 till 2013, and the statistics for both 2012 and 2013 regarding economic growth, economic policy, balance of payment and key ratios for balance of payments, external solvency and external liquidity (Egypt Country Report, 2013). Table (3.2) shows an increase in IT applications, and the prerequisite and infrastructure that are required for the B2C e-commerce adoption in Egypt.

Table (3.2): Egypt Economic Profile ⁵

EGYPT							
Key country risk indicators							
GDP (% real change pa)	7.1	7.2	4.7	5.1	1.8	1.6	5.2
Consumers' prices (average % change pa)	9.5	18.3	11.8	11.1	10.2	11.0	9.6
Economic growth							
GDP (% real change pa)	7.1	7.2	4.7	5.1	1.8	1.6	5.2
Gross fixed investment (% real change pa)	23.7	14.8	-10.2	7.7	-5.6	1.4	10.8
Private consumption (% real change pa)	8.8	5.7	5.7	4.1	4.5	4.3	5.2
Economic policy							
Budget balance (% of GDP)	-7.3	-6.8	-6.6	-8.1	-10.0	-10.5	-11.0
Public debt (% of GDP)	102	86	84	81	83	81	82
Money market interest rate (%)	6.9	11.6	9.8	9.3	12.5	13.0	11.8
Balance of payments (mln USD)							
Current account balance	194	-1331	-3195	-4939	-7424	-8720	-7720
Trade balance	-20801	-26774	-22475	-27016	-27815	-29990	-33210
Export value of goods	24455	29849	23089	25024	28105	31790	35210
Import value of goods	45256	56623	45564	52041	55920	61780	68420
Services balance	11195	14312	13242	15482	11959	13010	15010
External position (mln USD)							
Total foreign debt	33998	33365	33308	34844	34187	40900	43080
Short-term debt	2236	2843	2561	3149	4611	4030	4550
Total debt service due, incl. short-term debt	4243	4983	5755	5537	7945	7810	8580
Key ratios for balance of payments, external solvency and external liquidity							
Trade balance (% of GDP)	-15.7	-16.2	-12.0	-12.6	-12.0	-11.3	-10.9
Current account balance (% of GDP)	0.1	-0.8	-1.7	-2.3	-3.2	-3.3	-2.5
Inward FDI (% of GDP)	8.8	5.8	3.6	3.0	0.2	1.1	1.5
Foreign debt (% of GDP)	26	20	18	16	15	15	14

(Adopted from Rabobank. Economic Report. (2013)⁶.)

⁵ Source: Country Report Egypt. 2013. Rabobank. Economic Research Department

⁶ Available on: <https://economics.rabobank.com/>

3.6 The Egyptian Cultural Context

The previous section demonstrated that Egypt lacked the strategic planning and vision towards B2C e-commerce. The following section will critically evaluate the Egyptian cultural context in relation to B2C adoption.

In Egypt, consumers have a preference to buy products either in the form of goods or services from the stores more than on-line as they prefer face-to-face interaction instead of screen-to-face interaction (Ramzy and Ogden, 2011). The reason behind this point is due to the sensitivity of the Egyptian consumer towards the feel of risk and uncertainty avoidance (Hofstede *et al.*, 2010) towards on-line buying. In fact, the latter point reflects one challenge facing the diffusion of the e-commerce in Egypt; and further reflects the importance of perceived behavioural control (Ajzen 1991) as critical component of the B2C e-commerce. Moreover, store shopping is part of Egyptians' socialisation process, which is characterised by collectivism rather than individualism (Ramzy and Ogden, 2011).

Hofstede's uncertainty avoidance relates to the degree of anxiety the society members feel in uncertain or unknown situations; high uncertainty avoidance scoring nations try to avoid ambiguous situations whenever possible. On the other hand, low uncertainty avoidance nations enjoy free thinking and values differences (Hofstede, 2001). According to Hofstede's model, Egypt ranks high in uncertainty avoidance, which means that the Egyptians try to avoid uncertain or ambiguous situations (Hofstede, 2001).

Frost, Goode and Hart (2010) explored whether collectivistic and individualistic users exhibit different e-commerce loyalty and purchase intentions. Results have shown that on-line shoppers are more individualistic than those, who have not shopped on-line, while individualism and collectivism do not influence on-line loyalty. One can argue that Frost's *et al* (2010) results provided new evidence that off-line shoppers are more collectivistic than on-line shoppers are. This is a matter that may have a further implication if one will relate it to social media that evoked a new form of social collective interactivity worldwide. For example, technology such as weblogs (Ko *et al.*, 2008; Keng and Ting, 2009), wikis such as Wikipedia (Shao, 2009) and micro-blogging tools such as Twitter (Honey and Herring, 2009), and Facebook have played a key role in the January 25th 2011 Revolution in Egypt.

Previous research showed that cultural values influence the typical ways in which communications artifacts and other technologies are used within a society (Adler, 2001; Cole and O'Keefe, 2000; Fischer, 1992; Gao, 2001; Honold, 1999a; 1999b; Marcus, 2001; Sifianou, 1989). Individualism/collectivism as defined by Hofstede (1980; 1983; 1994) is the degree to which people in a country have learned to act as individuals rather than as members of cohesive groups: from collectivist to individualist. The individualism dimension refers to the extent to which individual self-interest is prioritised over the concerns of the group (McCoy *et al.*, 2005). It anticipates fundamental issues about an individual's motivation by contrast collectivist cultures are characterised by trust and loyalty as evidenced by the appearance of strong/close groups. The two extremes of

individualism versus collectivism can be highlighted in the contrast between the “me” versus the “we” societies (Hofstede, 2001).

In Hofstede’s classification, the Arab countries scored 38 out of a possible score of 100. They were rated to have a more collective than individualistic culture. In such countries, the people are more dependent on groups as well as on power figures than on individuals while making their decisions including the purchasing decisions (Hofstede, 1994), which can be argued as a factors that directly or indirectly influence on-line purchasing. Empirically testing the influence of cultural attributes on the B2C adoption does not fit within the scope of this study. However, the researcher has voiced a need to present a brief overview on the Egyptian cultural context to further link it with the discussion chapter of this study.

Having presented the literature in this chapter and the previous one of this study, the following section will identify the major research gaps.

3.7 Critical Reflections from Literature Review: Identifying Research Gaps

Having reviewed the literature in Chapters Two on the e-commerce adoption in relation to on-line trust and on-line security, it has been found that concerns still exist for these issues. Moreover, no previous empirical research has been conducted on Egypt as a developing country in relation to Egyptian consumers’ shopping on-line. In addition, critical reviewing of the existing literature reveals that the lack of on-line trust was a major barrier towards the adoption of B2C (Eastlick *et al.*, 2011; Henari *et al.*, 2008; Pennanen *et al.*, 2007; Siyal, 2000;).

The limited evidence available from cultural research on on-line trust suggests that it is a major concern that affects on-line shopping behaviour across cultures. While there is some evidence of cross-cultural differences in relation to the effect of trust on B2C adoption. However, some researchers argue that the variable of trust cannot be generalised to establish a cross-cultural variables (Siala *et al.*, 2004; Simon, 2001). Previous studies, which investigated the trust variable, have reached mixed results (O’Keefe, 2004). Accordingly, there is a need to research the construct of on-line trust within the context of Egypt in particular.

Some recent research papers on on-line trust and e-security evaluated the level of awareness and usage rates of B2C e-commerce in certain Middle Eastern countries. For example, Tara Fryad Henari and Roohi Mahboob (2008) evaluated the level of awareness and usage rates of B2C in certain Middle Eastern countries such as the oil-rich Gulf Kingdom of Bahrain. In addition, they conducted quantitative surveys in different Bahraini universities. Their research results showed that the participation in e-commerce was very low due to the feelings of insecurity in regulations and privacy-related issues when it came to providing personal information on-line. However, no formal empirical research has been conducted on Egypt.

Further, as for the on-line satisfaction, it is worth mentioning that no empirical research has been conducted on Egyptian consumers’ on-line satisfaction towards the adoption of the B2C e-commerce. Moreover, having reviewed the literature, it can be concluded that the majority of contexts that have addressed on-line interactivity relates to the experiences of consumers (Bolton and Saxena-Iyer,

2009). But the on-line purchase context has not been fully addressed. Accordingly, this research will contribute to the existing literature through empirically investigating these constructs.

To conclude, the former four constructs: on-line trust, on-line security, on-line interactivity and on-line satisfaction will be integrated to the thesis' conceptual model as a proposed extension to be empirically tested.

Furthermore, after reviewing the literature, it was obvious that the majority of recommendations presented at the conducted empirical investigations are directly related to the specific contexts of specified countries, with no formal coverage to the Egyptian e-commerce context. In other words, these recommendations cannot be generalised to Egypt due to the different patterns of B2C e-commerce adoption.

Having identified the major research gaps in the literature, which played a key role in developing the hypotheses of this study, the following section will further elaborate on the identified gaps within the Egyptian context scope of research.

3.7.1 Critical Reflections on Egypt: Identifying Research Gaps

Having introduced an overview regarding Egypt in relation to the adoption of e-commerce application, the general overview is that Egypt lacks the consistent formal structure to comprehensively deploy the e-commerce applications.

There is no doubt that Egypt has some basic pre-requisites in terms of specialised entities in measuring the information society such as the National Telecommunications Regularity Authority (NTRA) and the Information

Technology Industry Development Agency (ITIDA) (ICT Indicators Report, 2011). Despite the existence of draft laws for e-commerce and e-signature, it can be argued that Egypt is still within the developing stages of the e-commerce adaption now that the current laws are at their very introductory phases because the comprehensive approval of an e-signature law in Egypt is still pending (El Hayat Digital Newspaper, September 2012). Furthermore, the lack of empowering regarding the adaption of the e-commerce applications is obvious among males and females. Although Egypt has the most gender equal population in the Arab World, the male to female ratio transacting on-line is almost double the population ratio with a 70% male to 30% female ratio (Payfort's Middle East State of Payment report, 2014).

The Ministry of Communications and Information Technology (MCIT) was established in 1999 to develop the national ICT sector in Egypt and to enable the development of a knowledge-based society and a strong digital economy. After sixteen years of its establishment, it is obvious that the ICT impact on e-commerce adoption as well as boosting on-line economy is still very weak because the MICT's four initiatives during the past sixteen years have been very shallow and lacked the real influence on the e-commerce adoption rates⁷ (Egypt's ICT 2020 Strategy, 2015).

⁷ The Ministry of Communications and Information Technology (MCIT) was established in 1999 to develop the national ICT sector and till 2015, it has initiated four projects only, which includes the release of the National Communications Plan in 2000, the Strategy for Building the Information Society in 2003, the IT Industry National Development Strategy in 2006 and the National Strategy for Communications and Information Technology in 2007 (Egypt's ICT 2020 Strategy, 2015). Available on: http://www.mcit.gov.eg/ICT_Strategy.

Within an Egyptian context, it will be beneficial to offer a benchmark country in the Arab nations. But before introducing this country, it is important to highlight what is meant by benchmarking. Benchmarking is an important methodology for establishing suitable performance standards to guide companies in developing strategies and systems for the successful implementation of the e-commerce (Deros *et al.*, 2011).

Having reviewed the literature, it is observed that United Arab Emirates (UAE) is the most developed Arab country in relation to IT adoption (Al-Maghrabi *et al.*, 2011) with 46 per cent of B2C e-commerce penetration, which refers to percentage of Internet user transacting on-line, followed by Kuwait (35%) and Saudi Arabia (25%) (Payfort's Middle East State of Payment report, 2014). The UAE is one of the fastest growing countries and the most booming economy in the region. It is home to the most diverse population in the Arab World with more 200 nationalities. It is also one of the youngest nations in the region with 24.2% of its 9.3 million population being 24 years or younger. Its young population will likely contribute to its high Internet penetration rate of 85%, making it the third highest in the region (Payfort's Middle East State of Payment report, 2014). Of these 7.9 million Internet users, 3.6 million of them are transacting on-line, which means that a little more than a third of the country is purchasing on-line. This high on-line transaction ratio is due to the presence of a large expatriate community, whose members are likely more familiar with on-line payments, and a high credit card penetration with over five million on-line enabled cards (Payfort's Middle East State of Payment report, 2014). In the UAE, the most popular on-line shopping categories are airline tickets, hotel reservations, and electronics, which

constitute 51% of the total on-line transactions (Payfort's Middle East State of Payment report, 2014). Other popular categories in the UAE are fashion, books, and media downloads, which total 25% of all the on-line transactions (Payfort's Middle East State of Payment report, 2014). These categories are similar to the on-line shopping categories in Egypt, where the most popular on-line shopping items are electronics, airline tickets and fashion that account for a total of 40% of on-line transactions in Egypt.

In 2002, Sheikh Mohammed bin Zayed established the Dubai Technology, Electronic Commerce and Media Free Zone, which is popularly known as the 'Dubai Internet City' (Blythe, 2007). It is conceptually similar to the 'Cyberport' of Hong Kong. The idea is to place many IT firms in close proximity to help them achieve synergy (Blythe, 2007). By 2005, the Dubai Internet City became home to 650 high-tech firms employing more than 14,000 workers. In addition, Sheikh Khalifa bin Zayed Al Nahyan, the then UAE President, issued Federal Law No. 1/2006 that governs Electronic Commerce and Transactions, which enacted as an add on statute to the one that created the Dubai Internet City (Blythe, 2007).

It was surprising to find that the key challenges identified for Egypt are similar to the challenges and obstacles that had been identified for the UAE as the most advanced Arab country in IT adoption and spread, and the Middle Eastern Commercial Centre (Ahmed *et al.*, 2006; Al Maghrabi, 2011; Shalhoub, 2006). For example, the lack of trust in on-line transactions and continued reliance on the face-to-face contact during shopping are two of the main reasons for the relatively low electronic commerce adoption in Dubai (Ahmed *et al.*, 2011; Shalhoub, 2006). In addition, the preferred method of payment is similar to Egypt as the

majority of people in the UAE still prefer to pay with cash-on-delivery versus using a credit card on-line. While only 22% of users pay with a credit card, this percentage represents an improvement from the cash vs. credit card split a few years ago. However, the cash-on-delivery rates are expected to decrease within the coming few years with an increase in credit card penetration levels and alternative payment methods (Payfort's Middle East State of Payment report, 2014).

In Egypt, the same payment methods are adopted only by 7% of the population, who are being banked, while only eight million credit and debit cards are issued. The Egyptian users are challenged when it comes to on-line payments with over 65% relying on alternative payment methods such as pre-paid cards and bill presentment services and a 80% cash-on-delivery to 20% on-line credit card ratio.

Accordingly, it can be concluded from the above literature that the majority of Arab countries faces problems regarding the e-commerce adoption. Although the UAE can be a benchmark in relation to its integration of high-tech firms and high percentage of e-commerce (46 %) in addition to its introduction of the 'Dubai Internet City' as a strong infrastructure for the adoption of B2C e-commerce, and is considered as the Middle East commercial centre; the consumers' adoption of B2C is still lagging behind (Al-Maghrabi *et al.*, 2011; Al Qeisi and Hegazy, 2015; Baker *et al.*, 2007; Dennis *et al.*, 2011; Madichie *et al.* 2011; Shalhoub, 2006).

Thus, one can argue that in Egypt's current situation of fragmented and short-term initiatives, there is a strong need to investigate the major factors that affect the B2C adoption in Egypt.

It is obvious from the above discussion that research questions have to be addressed through empirical investigation as very little research has been conducted on the B2C adoption in Egypt. Accordingly, it is of paramount importance to highlight that both Chapters Two and Three have helped identify the research gaps, and re-frame research questions and objectives.

The following chapter presents the theoretical framework of this study. The major well-known adoption models and theories will be presented to identify gaps in literature; thus enabling the researcher to develop a conceptual model for testing and identifying the major factors affecting the intention to adopt B2C in Egypt. In addition, it blends the critical reflections presented at both Chapters Two and Three of this study, which have helped develop the research hypotheses of this thesis.

3.8 Chapter Summary

This chapter is a continuation of Chapter Two because it covers the current B2C e-commerce situation in Egypt and an overview of the Egyptian context. It provides a country profile about Egypt's profile as a developing country and the current status of B2C in terms of strategic implementations adopted by the Egyptian government. Picking up from Chapter One that defined the research problem, this chapter further provides important statistics and data that reflect the status of B2C e-commerce in Egypt. More importantly, the chapter concludes by identifying the research gaps that are based on the reviewed literature and the analysed Egyptian context.

CHAPTER FOUR

THEORITICAL MODELS UNDERPINNING THE RESEARCH

4.1 Introduction

The information technology (IT) has generated competing models, each of which has a different set of adoption and acceptance determinants (Venkatesh *et al.*, 2003). This chapter includes an overview of the theories of predicting, explaining and understanding the human behaviour. The purpose of giving an overview of the major theories is one of the objectives of the current study, which is to develop a model that can be used to identify the factors affecting B2C adoption.

This chapter presents the adoption theories and models that have been used to analyse e-commerce adoption in the past. In general, the IT acceptance/adoption research has yielded many competing models, each with different sets of acceptance determinants (Venkatesh *et al.*, 2003). The overview of the theories involved in adopting the new technology includes the Theory of Reasoned Action (Davis *et al.*, 1989), the Technology Acceptance Model (Venkatesh and Davis 2000), the Motivational Model (Davis *et al.*, 1992; Vallerand, 1997; Venkatesh and Speier 1999) and the Theory of Planned Behaviour (Ajzen, 1991; Harrison *et al.*, 1997; Mathieson 1991; Taylor and Todd 1995b). They also include a model that combines the Technology Acceptance Model and the Theory of Planned Behaviour (Taylor and Todd 1995a), the Model of PC Utilisation (Thompson *et al.*, 1991; Triandis', 1977), the Innovation Diffusion

Theory (Agarwal and Prasad 1997, 1998; Karahanna *et al.*, 1999; Plouffe *et al.*, 2001) and the Social Cognitive Theory (Bandura 1986). Furthermore, this chapter concludes that the extended Unified Theory of Acceptance and Use Technology (UTAUT2) is the theoretical framework of this study. In addition, Table (4.1) shows the major constructs of each one of the discussed models/theories and presents a time line for each:

Table (4.1) : Models and Theories of Individual Acceptance	
Models and Theories	Core Constructs
Innovation Diffusion Theory (IDT) by Rogers (1962) is adapted to information systems innovations by Moore and Benbasat (1991). Five attributes from Rogers' model and two additional constructs are identified	Relative advantage, ease of use, image, visibility, compatibility, results demonstrability, voluntariness of use,
Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1975) derives from psychology to measure behavioral intention and performance.	Attitude towards behaviour, subjective norm
Technology Acceptance Model (TAM) by Davis (1989) develops new scale with two specific variables to determine user acceptance of technology. Technology Acceptance Model 2 (TAM2) by Venkatesh and Davis (2000) is adapted from TAM and includes more variables.	Perceived usefulness, perceived ease of use, subjective norm
Model of PC Utilization (MPCU) by Thompson et al. (1991) is adjusted from the theory of attitudes and behavior by Triandis (1980) to predict PC usage behavior.	Job-fit, complexity, long-term consequences, affect towards use, social factors, facilitating conditions

Table (4.1) : Models and Theories of Individual Acceptance (Continued)	
Models and Theories	Core Constructs
Theory of Planned Behavior (TPB) by Ajzen (1991) extends TRA by including one more variable to determine intention and behavior.	Attitude towards behaviour, subjective Norm, perceived behavioral control
Motivational Model (MM) also stems from psychology to explain behavior. Davis et al. (1992) applies this model to the technology adoption and use.	Extrinsic motivation, intrinsic motivation
Combined TAM and TPB (C-TAM-TPB) by Taylor and Todd (1995).	Attitude Toward Behavior, Subjective norm, Perceived behavioural control, Perceived usefulness
Social Cognitive Theory (SCT) by Bandura (1986) is applied to information systems by Compeau and Higgins (1995) to determine the usage.	Outcome Expectations— Performance, outcome expectations— personal, self-efficacy, affect, anxiety
Unified Theory of Acceptance and Use of Technology Model (UTAUT) by Venkatesh et al. (2003) integrates above theories and models to measure user intention and usage on technology	Performance expectancy, effort expectancy, social influence, and facilitating conditions constructs.
Extended Unified Theory of Acceptance and Use Technology (UTAUT2) (2012)	Performance expectancy, effort expectancy, social influence, and facilitating conditions constructs. hedonic motivation, price value, and habit.

Adopted from (Venkatesh *et al.*, 2003)

4.2 Adoption Models/Theories

There are different theories and models of behaviour that can help us understand, explain and predict the behaviour of an individual, whether to accept or reject adoption of new ICT including the following eight acceptance and adoption models/theories: [1] Theory of Reasoned Action (TRA), [2] Theory of Planned Behaviour (TPB) and [3] the Technology Acceptance Model (TAM and TAM 2), [4] Motivational Model (MM), [5] Combined TAM and TPB (C-TAM-TPB), [6] Model of PC Utilisation (MPCU), [7] Innovation Diffusion Theory (IDT), and [8] Social Cognitive Theory (SCT). Table (4.2) gives the meanings of key terms used in these theories:

Key Terms	Meaning
Behaviour	An action that is carried out described in terms of the action itself, its target the context and time.
Attitude	A psychological tendency that is expressed by evaluating a particular behaviour, with some degree of favour or disfavour.
Control Beliefs	Beliefs about the likelihood that one possesses the resources and opportunities thought necessary to execute the behaviour.
Behavioural Beliefs	Perceived consequences of an action.
Intention	A person's conscious motivation to exert the effort to carry out such behaviour.
Norms	<ul style="list-style-type: none"> ▪ Descriptive perceptions – what is important to what people actually do; ▪ Injunctive perceptions – importance of what people think a person should do; ▪ Subjective perceptions – social pressure to perform behaviour.
Normative Beliefs	Perceptions of significant others' preferences about whether one should perform a behaviour.

Table (4.2) Meaning of Key Terms: Adoption Models/Theories (Continued)	
Key Term	Meaning
Outcome Evaluation	Evaluation of the perceived consequences of an action.
Perceived Behavioural	Perceptions about how easy or difficult it is to perform the suggested behaviour.
Self-efficacy	The conviction that one can successfully execute a given behaviour.

Adopted from (Venkatesh *et al.*, 2003)

4.2.1 Innovation Diffusion Theory (IDT) [1962]

This theory is grounded in sociology. It has been used extensively to study a variety of innovations (Moore and Benbasat, 1991). It adopted the characteristics of innovations in (Rogers 1995) and refined a set of constructs that could be used within information systems to study individual technology acceptance.

According to Rogers (2003), the adoption process passes through several phases from gaining initial knowledge of an innovation, to eventually forming an attitude towards it, and making a decision to adopt or reject it. Rogers (2003) considers the diffusion process as one, which involves the spread of a new idea from its source of invention or creation to its ultimate users or adopters. He differentiates the adoption process from the diffusion process in that it occurs within society and is a group process, whereas the adoption process pertains to an individual. He also referred to the adoption process as the mental process through which an individual passes from first hearing about an innovation to final adoption (Rogers, 2003).

As shown in Figure (4.1), the innovation-decision process model consists of five stages, or categories. They are (Rogers, 2003):

[1] Knowledge: It occurs when an individual (or other decision-making unit) is exposed to an innovation's existence and gains an understanding of how it functions;

[2] Persuasion: It occurs when an individual (or other decision-making unit) forms a favourable, or unfavourable attitude towards the innovation;

[3] Decision: It takes place when an individual (or other decision-making unit) engages in activities that lead to a choice in adopting or rejecting the innovation;

[4] Implementation: It occurs when an individual (or other decision-making unit) puts a new idea into use; and

[5] Confirmation: It takes place when an individual seeks reinforcement of an innovation-decision already made, but they may reverse this previous decision if exposed to conflicting messages about the innovation (Rogers, 2003).

In the information systems field, Moore and Benbasat (1991) expand this attributes set to study information technology acceptance. The set includes: [1] Relative Advantage, which is "the degree to which an innovation is perceived as being better than its precursor" (Moore and Benbasat, 1991: 195); [2] Ease of use, which is "the degree to which an innovation is perceived as being difficult to use" (Moore and Benbasat, 1991: 195), [3] Image, which is "The degree to which use of an innovation is perceived to enhance one's image or status in one's social system" (Moore and Benbasat,

1991: 195); [4] Results Demonstrability, which is “the tangibility of the results of using the innovation, including their observability and communicability” (Moore and Benbasat, 1991: 195), [5] Compatibility, which is “the degree to which an innovation is perceived as being consistent with the existing values, needs, and past experiences of potential adopters” (Moore and Benbasat, 1991: 195); [6] Visibility, which is “the degree to which one can see others using the system in the organisation” (Moore and Benbasat, 1991: 195); and [7] Voluntariness of Use, which is “the degree to which use of the innovation is perceived as being voluntary, or of free will” (Moore and Benbasat, 1991: 195).

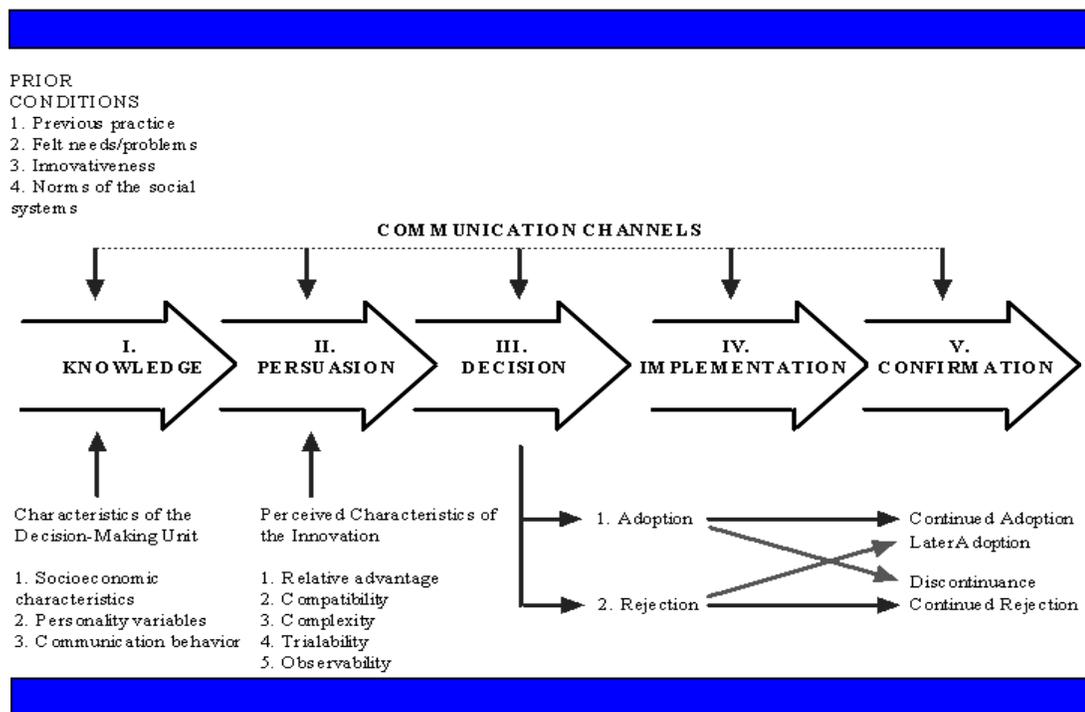


Figure 4.1: The Innovation-Decision Process. (Adopted from Rogers, 2003)

Critical evaluation to the Innovation diffusion research regards individuals' perceptions about these characteristics of an information technology as important factors in influencing an individual's acceptance behaviour (Agarwal and Prasad, 1997, 1998; Karahanna *et al.*, 1999; Plouffe *et al.*, 2001).

4.2.2 Theory of Reasoned Action (TRA) [1975]

Most of attitude theories are extensions to the Theory of Reasoned Action (TRA) that were developed by Fishbein and Ajzen (1975). The TRA suggests that a person's behaviour is determined by his/her intention to perform the behaviour and that this intention is, in turn, a function of his/her attitude towards the behaviour and his/her subjective norm (Ajzen, 1985). "The best predictor of behaviour is intention, which is the cognitive representation of a person's readiness to perform a given behaviour, and it is considered to be the immediate antecedent of behaviour. As Figure (4.2) reflects, this intention is determined by three things (Ajzen, 2002: 666):

[1] Their attitude towards the specific behaviour;

[2] Their subjective norms; and

[3] Their perceived behavioural control (Ajzen, 2002: 666).

The relative importance of attitudinal and normative components will vary according to the intention under consideration and from one person to another (Ajzen and Fishbein, 1980). However, research suggests that most behaviour is controlled mainly by attitude than by social influence (Cooper and Donald, 2001). The introduction of

the Theory of Reasoned Action (TRA) led to the development of the theory of Planned Behaviour (Venkatesh *et al.*, 2003).

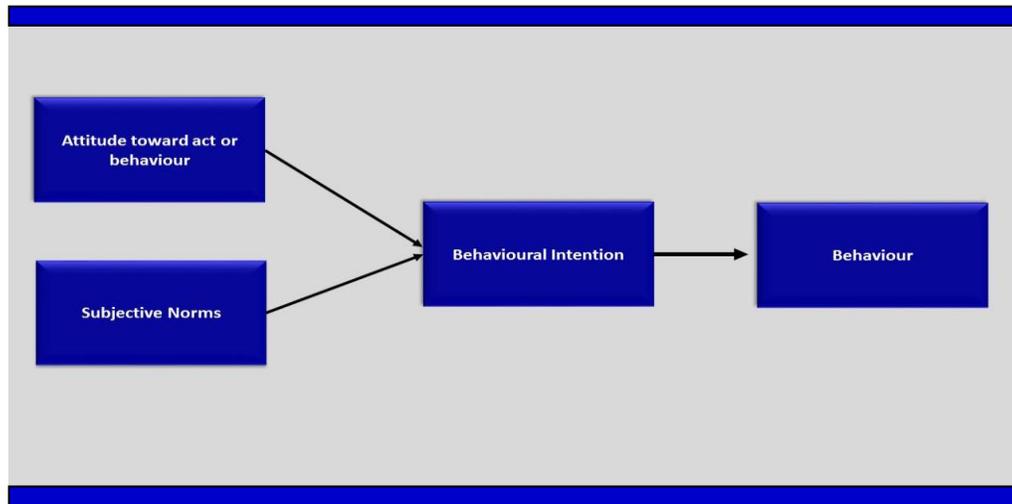


Figure 4.2: Theory of Reasoned Action (TRA)
Adopted from Ajzen and Fishbein (1980: 27)

According to the theory of Reasoned Action the individual behavior is motivated by behavioral objectives and these are a function of an individual's attitude toward the behavior and subjective norms surrounding the performance of the behavior (Surendran, 2012). Critical evaluation to the Theory of Reasoned Action (TRA) stresses that it is one of the most fundamental and influential theories of human behavior and has been used to predict a wide range of behaviors. TRA is a tool used to gain deeper insight into how attitudes and beliefs are correlated with individual intentions to perform; that intention is determined by two factors: attitude towards behavior and subjective norm (Yucel and Gulbahar, 2013).

4.2.3 Technology Acceptance Model (TAM) [1989]

The Technology Acceptance Model (TAM), which was developed by Davis in 1989, identifies the factors that facilitate the integration of technologies into an organisation and discover why users accept or reject a technology (Lindsay *et al.*, 2011).

As Figure (4.3) shows, the TAM states that technology usage depends on perceived usefulness and perceived ease of use. Time and usefulness factors, such as convenience and time saving, are given as the reason to shop on-line (Chen *et al.*, 2002; Madlberger, 2006; Torkzadeh and Dhillon, 2002; Zeithaml and Gilly, 1987). Accordingly, a number of factors influence the consumers' decisions about how and when they will use new technology. In this regard, there are two behavioural beliefs are fundamental factors for predicting user acceptance (Adams *et al.*, 1992; Davis, 1989; Davis *et al.*, 1989; Mathieson, 1991). They are:

[1] Perceived Usefulness (PU); and the

[2] Perceived Ease of Use (PEOU) (Davis, 1989).

Furthermore, Davis (1989) stated that the PU is whether the technology will enhance the user's job performance, and PEOU relates to whether using the system will be free from effort (Davis, 1989).

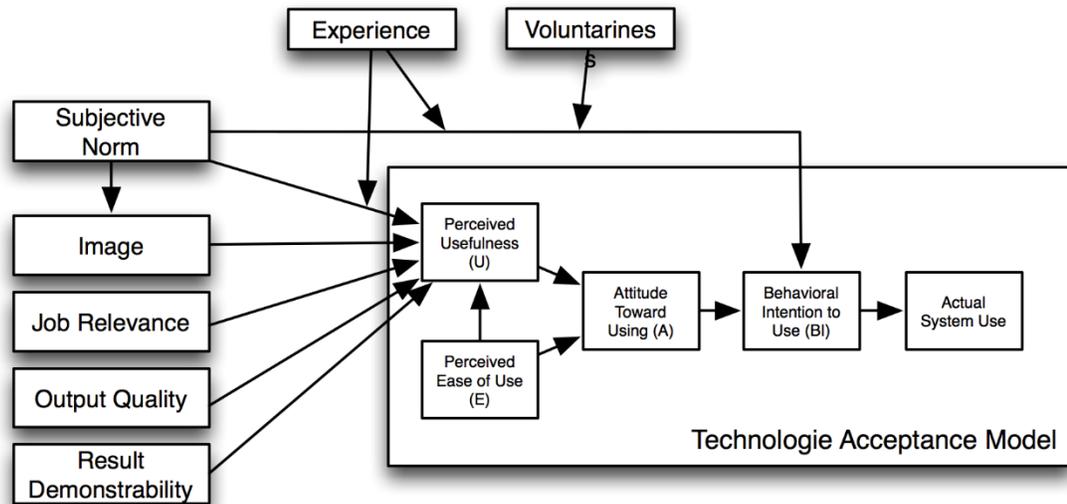


Figure 4.3: Technology Acceptance Model. (Adopted from Davis, 1989).

After reviewing the literature, the researcher concluded that the majority of papers were interested in studying the motivations that led to the adoption of on-line shopping compared with the off-line market (Chen *et al.*, 2002; Klopping and McKinney, 2004). It is very important to highlight that the TAM model has witnessed many developmental stages. Venkatesh and Davis (2000) extended the original TAM to include additional key determinants of TAM's perceived usefulness constructs, incorporating social influences and cognitive instrumental processes in what is called the TAM2 model. According to Venkatesh and Davis (2000), additional elements to the TAM within the social influence category include subjective norm, voluntariness, image and experience. In fact, the TAM2 model has been criticised of being limited

to the exploration of the basics of the PU component and ignores it and the PEOU construct. The TAM2 provides a less-holistic view of factors that can be addressed to maximise usage (Venkatesh and Davis, 2000).

Recently, researchers have included new concepts, either as antecedents of PEOU and PU or as intermediaries between these two variables and the final concept [intention or intensity of use] (Davis, 1989). The PU has been referred to as the degree to which a potential user believes the use of a specific tool will improve his/her performance, and the operational definition for the PEOU is the perception that using a specific technology will not require additional effort (Davis, 1989).

Factors such as self-efficacy or attitude, which are internal motivations (Bruner and Kumar, 2005; Chen *et al.*, 2002) have been integrated as new concepts. The perceived self-efficacy (PSE) is defined as the belief that one has the capability to behave in a certain way (Lee *et al.*, 2003). In the case of e-commerce, to be able to carry out an efficient action, the individual must feel capable of handling and controlling the IT during the purchase (Chau and Hu, 2001). Self-efficacy exerts a significant effect on other perceptions such as ease of use and usefulness, thus indirectly determining the final behaviour (Wu *et al.*, 2007; Yi *et al.*, 2006).

Moreover, in 2008, Venkatesh and Bala combined the TAM2 and the model of determinants of perceived ease of use (MDPEOU) to explain the PEOU; in addition to the PU determinants, as per the TAM2. The additional factors have been integrated to evoke the TAM2. Factors are taken from the MDPEOU and anchors [that is

general beliefs about technologies] such as "computer self-efficacy", the "perception of external control", the "computer anxiety" and the "computer playfulness" are all included. The "perceived enjoyment" and the "objective usability" determinants are referred to as the "adjustments", whereby beliefs are shaped at the level of experience with a system (Venkatesh, 2000b: 351).

According to Venkatesh, the "computer self-efficacy" relates to the level of an individual's belief to perform a task; the "perception of external control" determines whether an individual believes the organisational and technical support is suitable; the "computer anxiety" encompasses the level of fear associated with using a new system, and the "computer playfulness" represents the intrinsic motivation for using a new technology; and the "perceived enjoyment" is defined as "the extent to which the activity of using a system is perceived to be satisfying in its own right" (Venkatesh, 2000b: 351); and is expected to increase with experience whilst computer playfulness will decrease over time. The "objective usability" involves an individual making a comparison of the actual level of effort required to complete specific tasks (Venkatesh, 2000: 351).

Critics of the TAM2 model argue that although it is more comprehensive because it provides interventions to boost the PEOU as well as the PU. They say that these are focused on the individual and not in the wider implementation context. In this sense, wider organisational issues such as the influence of supervision and level of involvement in the decision-making process may also play a key role in determining the acceptance of a new technology (Venkatesh, 2000).

The integration of the original TAM is demonstrated through empirical research, which extends it to different settings. It has been reflected in various empirical investigations. For example, Hernandez *et al.*, (2011) conducted a research in Spain to investigate whether the individual's socio-economic characteristics in terms of age, gender and income influence on-line shopping behaviour. The chosen sample covered experienced on-line shoppers. The research results showed that the socio-economic variables moderate neither the influence of previous uses of the Internet nor the perceptions of e-commerce. In this regard, the technology acceptance model was broadening "to include previous use of the Internet and perceived self-efficacy. The perceptions and behaviour of e-shoppers are based on their own experiences" (Hernandez *et al.*, 2011: 113).

Giovanis *et al.*, (2012) integrated the TAM to explore customers' perceived risk with the aim of examining the factors affecting Greek customers' intentions to adopt the Internet banking services. Furthermore, they examined several individual differences with respect to their impact on the formation of customers' attitude about the pros and cons of the new technology. The results showed that "service compatibility" is the key factor, which mostly shapes the customers' behavioral intentions towards adopting Internet banking, followed by TAM constructs and perceived risk elements (Giovanis *et al.*, 2012: 24). Moreover, the TAM and perceived security and privacy risk constructs partially mediate the relationships between compatibility and customers' behavioural intentions, while the perceived usefulness (PU) partially

mediates the relationship between perceived ease of use and customers' intentions (Giovanis *et al.*, 2012).

Lee *et al.*, (2011) examined the factors that affect the consumers' intentions to purchase products and services on-line through using the TAM as a framework.

In addition, Romero *et al.*, (2011), who examined the factors affecting the acceptance of social networking sites (SNS), analysed the users' practices and behaviour in these environments, and assessed the degree of acceptance of SNS in The Netherlands. Accordingly, the TAM was used to analyse the factors influencing the level of SNS acceptance and usage. Results showed that the only exception was the hypothesis on the relationship between the perceived risk and the perceived usefulness.

Camarero (2012) assessed the application of on-line discussion forums as a support tool for lecturing in marketing. He sought to pinpoint which factors determined the students' use of on-line forums on the basis of the TAM and provided empirical evidence concerning their impact on e-learning performance. Camarero's findings showed that perceived usefulness determines a positive attitude towards forum, which in turn influences forum use and perceived learning. In fact, adopting a new learning system may be seen as a "gradual process in which students became involved as they developed a positive attitude towards the system" (2012:2).

Celik examined the role of the subjective norm (SN), the on-line "shopping anxiety" (ANX) and the perceived playfulness (PPL) in predicting the consumer's adoption of on-line shopping. He investigated the relationships between these variables and the

variables of the TAM, which is associated with customers' on-line shopping intentions in Turkey (2011: 390).

Yang *et al.*, (2012) integrated the Theory of Planned Behaviour (TPB) and the Technology Acceptance Model (TAM) to predict young Chinese consumers' mobile viral attitudes, intents and behaviour. Results showed that "subjective norm, perceived cost and pleasure were significant predictors of their viral attitudes. Their viral attitudes, perceived utility and subjective norm predicted their intent to pass along entertaining electronic messages.

The young Chinese consumers' intent to forward useful electronic messages was determined by their viral attitudes, perceived utility and market mavenism. "Their viral attitudes, intents and market mavenism predicted their mobile viral behaviour" (2012: 59).

Abbasi *et al.*, (2011) argued that behavioural models of technology acceptance did not serve equally across cultures. Consequently, the study aimed to extend the technology acceptance model (TAM) to suit in a developing country context. The model attempts to identify the relationship between social norms, management support and moderating factors voluntariness and experience. Results have shown that expecting acceptance behaviour from individuals on the basis of only TAM's constructs is not enough for introducing new IT methods. The study has shown that an individual's perceptions are "formed/changed through attitudinal and social beliefs, along with management support and usage experience". (Abbasi *et al.*, 2011: 30).

Kesharwani and Bisht (2012) extended the TAM in the context of Internet banking adoption in India under security and privacy threat. Results showed that a perceived risk has a negative impact on behavioural intention of Internet banking adoption, and trust has a negative impact on perceived risk (Kesharwani and Bisht , 2012). A “well-designed website” was also found to be helpful in facilitating easier use and also minimising perceived risk concerns about the Internet banking usage (Kesharwani and Bisht , 2012: 4).

In this perspective, it can be argued that TAM provides a useful framework for exploring the motivational issues affecting the adoption of a technology due to its high explanatory power in technological behaviour and e-commerce as well as its adoption as an efficient model and framework for understanding acceptance of e-commerce (Ahn *et al.*, 2004; Al-Maghrabi, T. *et al.*, 2011; Cheng *et al.*, 2012; Hajli, 2012; Shang *et al.*, 2005; Shih, 2004).

4.2.4 Model of PC Utilisation (MPCU) [1991]

This model, which has been derived largely from the theory of Human Behaviour (Triandis 1977), presents a competing perspective to the one proposed by TRA and TPB (Venkatesh *et al.*, 2003). The nature of the model makes it particularly suitable for predicting individual’s acceptance and use of a range of information technologies. The PC Utilisation model was adopted by Higgins Thompson *et al.*, (1991) to predict the PC utilisation. In this model, the constructs that predict usage are job-fit, complexity, long-term consequences, affect towards use, social factors, and

facilitating conditions. The job-fit refers to “the extent to which an individual believes that using a technology can enhance his/her job performance of his or her job” (Thompson *et al.*, 1991: 129). Complexity refers to “the degree to which an innovation is perceived as relatively difficult to understand and use” (Thompson *et al.*, 1991: 128). Long-term consequences refers to “the outcomes that have a pay-off in the future” (Thompson *et al.*, 1991: 129). Affect towards use referred to “the feelings of joy, elation, or pleasure, or depression, disgust, displeasure or hate that is associated by an individual with a particular act” (Thompson *et al.*, 1991: 127). Social factors refers to “the individual’s internalisation of the reference group’s subjective culture, and specific interpersonal agreements that the individual has made with others in specific social situations” (Thompson *et al.*, 1991: 126). Facilitating conditions refers to “the objective factors in the environment that observers agree make an act easy to accomplish” (Thompson *et al.*, 1991: 129). Critical evaluation to this model reflects that it is particularly suitable for predicting individual’s acceptance and use of a range of information technologies because it has integrated the social factors along with factors related to the utilization of PC technologfactors related to the utilization of PC technolog.

4.2.5 Theory of Planned Behaviour (TPB) [1991]

The Theory of Planned Behaviour (TPB) (Ajzen, 1975, 1991), which was developed by Ajzen, is an extension to the TRA. Both theories postulate that behaviour is a

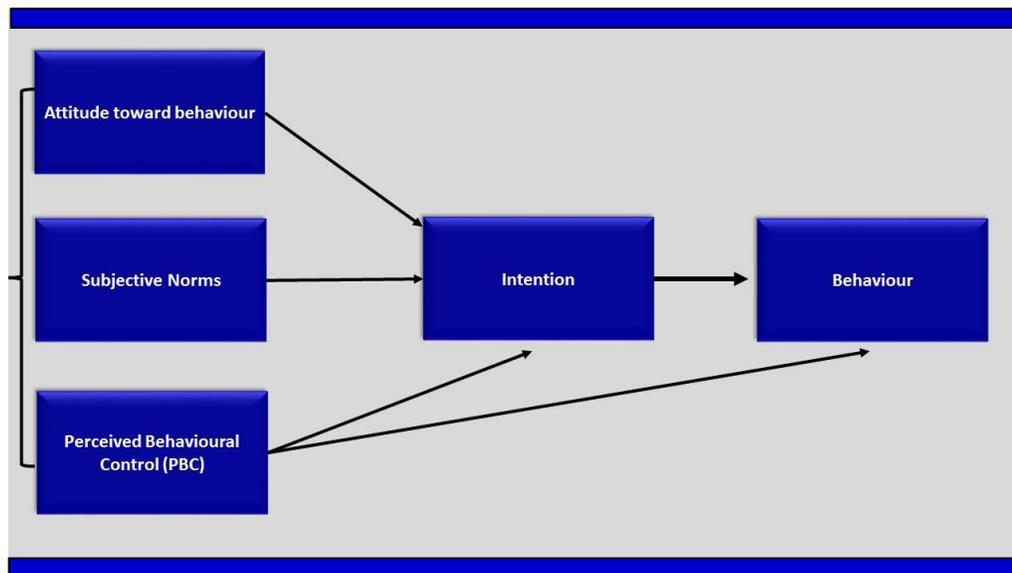
direct function of behavioural intention and they agree that behavioural intention is a function of attitude and subjective norm.

Figure (4.4) presents that attitude towards a behaviour, subjective norm, and perceived behavioral control constitutes important factors for determining the intention to perform a behavior. According to Fishbein and Ajzen (1975), attitude towards a behaviour is referred as an individual's positive or negative evaluation of a relevant behaviour and is composed of an individual's beliefs regarding the perceived consequences of performing behaviour.

Subjective norm is a function of normative beliefs, which represents an individual's perception of whether significant others approve or disapprove a behaviour (Fishbein and Ajzen, 1975).

"The Theory of Planned Behaviour holds that only specific attitudes towards the behaviour in question can be expected to predict that behavior; in addition to measuring attitudes towards the behavior. Therefore, there is a need to measure people's subjective norms – their beliefs about how people they care to have a view about the behaviour in question" (Ajzen, 2002: 666). To predict someone's intentions, knowing these beliefs can be as important as knowing the person's attitudes because perceived behavioural control influences intentions. Perceived behavioural control refers to the people's perceptions of their ability to adopt a given behavior (Ajzen, 2002). These predictors lead to intention; a general rule, the more favourable the attitude and the subjective norm and the greater the perceived control, the stronger the person's intention to perform the behaviour in question (Ajzen, 2002).

"The perceived behavioural control accounts for an individual's non-volitional aspects of behaviour. This explains an individual's perception of ease or difficulty by evaluating whether he/she possesses the requisite resources and opportunities that are necessary to perform a behavior" (Doll and Ajzen, 1992: 757). Several empirical findings supported the addition of the perceived behavioural control to the traditional attitude-behaviour model to be more plausible (Doll and Ajzen, 1992). The TPB was applied to explain the factors affecting consumer behaviour in e-commerce specifically in the context of B2C (George, 2004). It was also used to explain the factors affecting Internet adoption (Jaruwachirathanakul and Fink, 2005).



**Figure 4.4: Theory of Planned Behaviour
Adopted from Ajzen (1991: 182)**

Critical evaluation of the theory shows that although the formation of attitude and subjective norms are identical to that of the theory of reasoned action (TRA), perceived behavior control construct added new dimension as both theories suppose behavioural intentions to be the important factors to usage behaviour.

4.2.6 Motivational Model (MM) [1992]

The Motivational Model was introduced by Vallerand and Pelletier's (1985; Vallerand *et al.*, 1987). Davis *et al.*, (1992) applied the motivational theory to study IT adoption and use. The Motivation Model suggests that individuals' behaviour is based on extrinsic and intrinsic motivations. Extrinsic motivation is defined as the perception that users want to perform an activity "because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself", such as improved job performance, higher pay, or promotions (Davis *et al.*, 1992: 1112). Perceived usefulness, perceived ease of use, and subjective norm are examples of extrinsic motivation.

Intrinsic motivation relates to perceptions of pleasure and satisfaction from performing the behaviour (Vallerand, 1997). Users want to perform an activity "for no apparent reinforcement other than the process of performing the activity per se" (Davis *et al.*, 1992: 1112). Computer playfulness and enjoyment are examples of intrinsic motivation (Davis *et al.*, 1992; Venkatesh, 2000).

Meanwhile, Deci and Ryan, (1980, 1985) proposed a multi-dimensional perspective of extrinsic motivation, where they differentiated self-determined from non-self-determined types of extrinsic motivation. Extrinsic motives can either be imposed and coercive, or they can be fully endorsed by the individual. Self-determined types of motivation refer to behaviours, which are coherent with one's value system (Deci and Ryan, 2000). When experiencing the self-determined extrinsic motivation, one

volitionally decides to engage in the activity because it is important and concordant with one's values (Sheldon and Elliot, 1999).

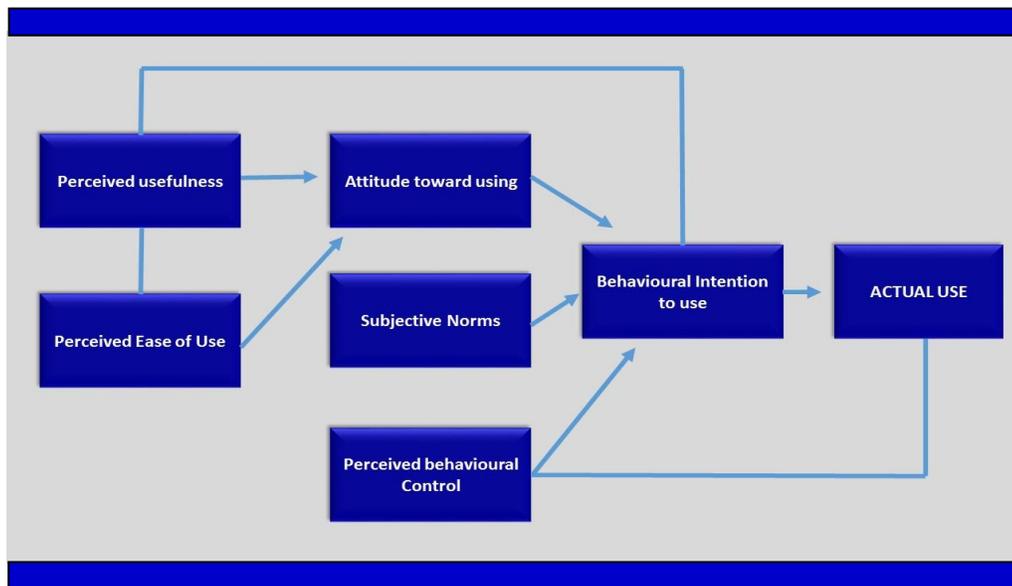
Non-self-determined types of motivation refer to behaviours that are imposed on the self by others, the situation, or by one's sense of obligation. When non-self-determined, one feels pressured to engage in the activity because the underlying reasons for participation have not been integrated into one's value system and sense of one's self (Deci and Ryan, 2000).

The core constructs at the Motivational model are extrinsic motivation and intrinsic motivation, the major criticism to the Motivational model is that motivation should be expanded far from the two constructs; for example, through using the concept of participative management, effective interventions can be developed by creating conditions to help satisfy these needs thus enhancing motivation, which is crucial for any IT implementation project based on the reconceptualisation of motivation (Howard *et al.*, 2010).

4.2.7 Combined TAM and TPB (C-TAM-TPB) [1995]

Perceived ease of use and perceived usefulness are the two specific beliefs in the TAM, which determine one's behavioural intention to use a technology and are linked to subsequent behaviour (Taylor and Todd, 1995a; Sheppard *et al.*, 1988). According to Taylor and Todd (1995b), developing a better understanding of the relationships between the belief structures and the precursors of intention requires decomposition of attitudinal beliefs. The decomposed model of the TPB has better

explanatory power than the pure TPB and TRA models (Taylor and Todd, 1995a). As a result, Taylor and Todd (1995b) integrated TAM and TPB to include subjective norm and perceived behavioural control into technology acceptance models and proposed the C-TAM-TPB with an empirical study that was made on the use of computing resources centre by students. As Figure (4.5) reflects, the empirical results by Taylor and Todd (1995b) showed that C-TAM-TPB had high fitness in explaining users' behaviours of using new technology. From an analysis of grouping users based on experience, the C-TAM-TPB shows quite good fitness on both experienced and inexperienced users.



**Figure 4.5: Combined TAM and TPB (C-TAM-TPB).
(Adopted from Taylor and Todd (1995b)).**

Both the theories of reasoned action and planned behaviour fall within the realm of cognitive theories, one of the major criticism to the two theories is that their strong cognitive orientation tends to preclude the affective nature of humans, which also plays a role in decision-making processes. Another criticism is based on the focus of

the theory of reasoned action on the individual as opposed to the group of which they are a member (Dutta-Bergman, 2005). Dutta-Bergman (2005) suggests that although proponents of the theory of reasoned action might argue that a subjective norm explains the role of the collective in an individual's decision-making, it is still driven by an individual motive orientation, thus keeping the locus of decision-making with the individual.

4.2.8 Social Cognitive Theory (SCT) [1995]

The Social Cognitive Theory (SCT) explains how people acquire and maintain certain behavioural patterns. The theory also provided the basis for intervention strategies (Compeau and Higgins, 1995). As Figure (4.6) reflects, the SCT highlights that evaluating behavioural change depends on key factors such as environment, people and behaviour. Environment refers to the factors that can affect a person's behaviour and there are social and physical environments. The social environment includes family members, friends and colleagues. The physical environment includes such characteristics as the size of a room, the ambient temperature, or the availability of certain foods. The environment and situation provide the framework for understanding behaviour (Parraga, 1991). These three factors, environment, people and behaviour, are constantly influencing each other.

Thus, behaviour is not simply the result of the environment and the person, just as the environment is not simply the result of the person and behaviour engagement (Parraga, 1991). The environment provides models for behaviour and 'observational learning'

that occur when a person watches the actions of another person and the reinforcements that the person receives (Bandura, 1997).

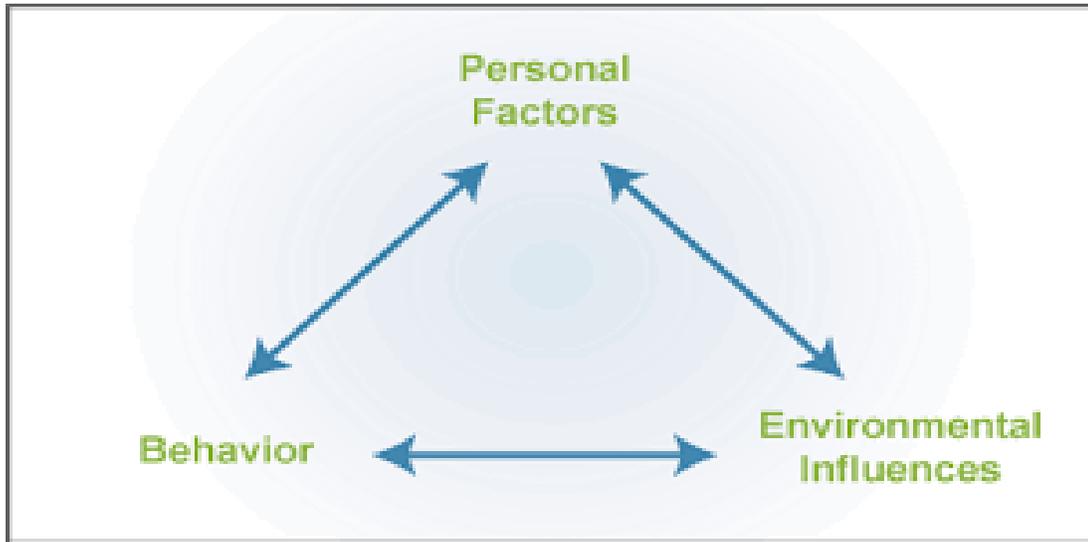


Figure 4.6: Overview of Social Cognitive Theory (Adopted from Pajares, 2001)

Critical evaluation to the Social Cognitive Theory revealed that the theory overlooked the impact that individuality has when it comes to people's ability to learn new processes; the theory did not thoroughly consider personal issues or barriers; in addition it missed the connection between observational learning and self-efficacy (McAlister, 2008)

To conclude, the Theory of Planned Behaviour (TPB) and the Technology Acceptance Model (TAM), the Innovation Diffusion Theory assume that there are only unidirectional causal relationships among the major variables in their models, the Social Cognitive Theory (Bandura, 1986) suggests that environmental factors,

personal factors (in the form of cognitive factors, affective factors etc.), and behaviours are determined reciprocally. The following section will present the development of the extended Unified Theory of Acceptance and Use of Technology (UTAUT2).

4.2.9 The Extended Unified Theory of Acceptance and Use of Technology [2012]

Before the introduction of the Extended Unified Theory of Acceptance and Use of Technology (UTAUT2), the Unified Theory of Acceptance and Use of Technology (UTAUT) was firstly introduced.

Based on the most significant constructs from the above eight theories and models, Venkatesh *et al.*, (2003) formulated a new model called the Unified Theory of Acceptance and Use of Technology (UTAUT), which integrated the fragmented theory and research on individual acceptance of information technology into a unified theoretical model that linked the essential elements of the eight previously established models (Venkatesh, *et al.*, 2003).

Venkatesh *et al.*, (2003) identified and discussed the eight specific models of the determinants of intention and usage of information technology. Then, they empirically compared the eight models using longitudinal data from four organisations. In addition, they used conceptual and empirical similarities across the eight models to formulate the UTAUT, which was further empirically tested using original data from the four organisations and then cross validated using new data

from an additional two organisations. The results provided strong empirical support for UTAUT, which introduces four determinants of intention to use: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI) and Facilitating Conditions (FC). In addition, moderating influences of experience, voluntariness, gender and age were confirmed as part of the UTAUT (Venkatesh, *et al.*, 2003).

In this regard, as Figure (4.7) presents, the UTAUT suggests that four constructs are the main determinants of the intention to use an information technology; the four constructs are Performance Expectancy, Effort Expectancy, Facilitating Conditions and Social Influence (Venkatesh *et al.*, 2003). All of them comprise of the most influential constructs of the eight models or theories discussed above. These three constructs are defined as follows:

[1] Performance Expectancy (PE) is defined as “the degree to which the user expects that using the system will help him or her attain gains in job performance”; (Venkatesh *et al.*, 2003: 447). This new construct has five root constructs: perceived usefulness from TAM/TAM2, Combined TAM and TPB, extrinsic motivation from the Motivational Model, relative advantage from the Innovation Diffusion Theory, and outcome expectations from the Social Cognitive Theory (Martins *et al.*, 2014);

[2] Effort Expectancy (EE), which is “the degree of ease associated with the use of the system” (Venkatesh *et al.*, 2003: 450);

[3] Social Influence (SI), which is “the degree to which an individual perceives that important others believe that he or she should use the new system”(Venkatesh *et al.*, 2003: 451); and

[4] Facilitating conditions (FC), which can be defined as “the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system” (2003: 453). Venkatesh *et al.*, (2003) also found that the influence of facilitating conditions on usage is moderated by age and experience of the individual.

Venkatesh, *et al.*, (2003) concluded that performance expectancy (PE) appeared to be a determinant of intention in most situations: the strength of the relationship varied with gender and age such that it was more significant for men and younger workers. It is worth mentioning that gender and age differences widely exist in technology adoption contexts as moderating factors also (Venkatesh and Morris 2000). On the other hand, the effort expectancy (EE) effect on intention is further moderated by experience in addition to gender and age in such a way that it is more significant for women and older workers, and those effects decrease with experience. Experience as a variable is operationalised as the passage of time from the initial use of a technology by an individual (Venkatesh *et al.*, 2012).

The effect of social influence (SI) on intention, which is contingent on all four moderators, was found to be non-significant when the data were analysed without the inclusion of moderators. Finally, the effect of facilitating conditions (FC) on usage was only significant when it had been examined in conjunction with the moderating effects of age and experience. In other words, they only matter for older workers in later stages of experience (Venkatesh *et al.*, 2012).

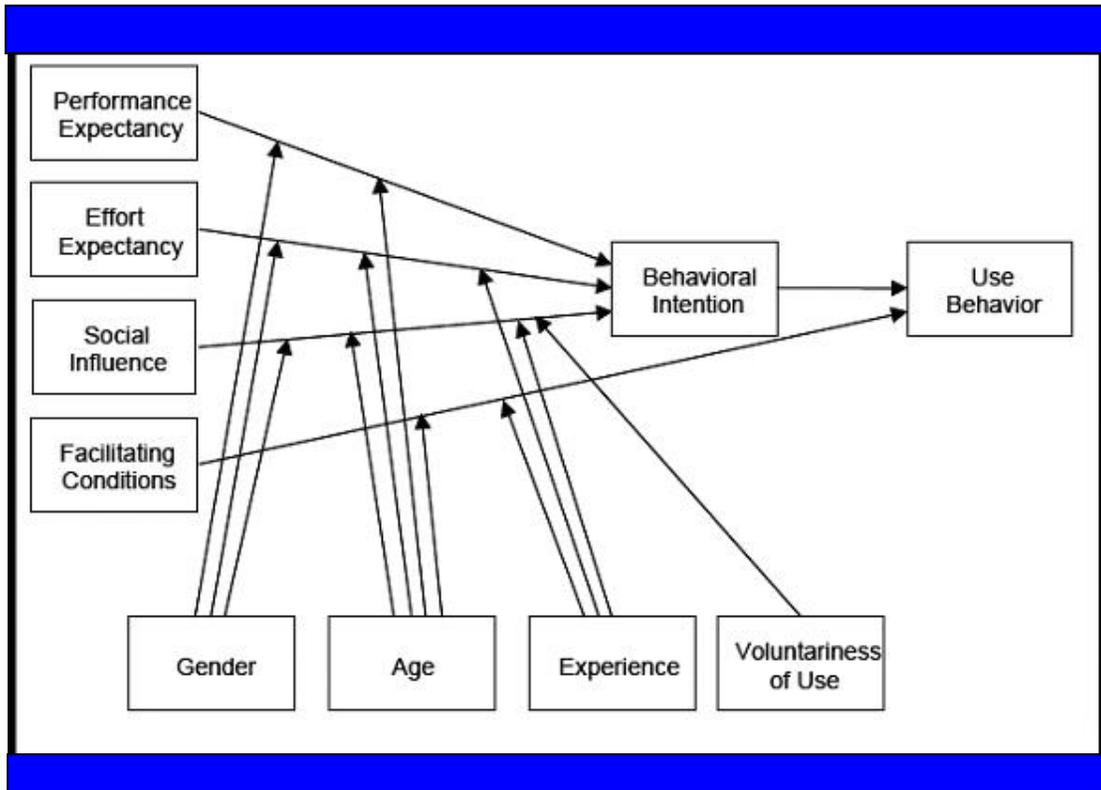


Figure 4.7: UTAUT Model (Adopted from Venkatesh *et al.* 2003: 447)

The UTAUT has provided a substantial improvement over the original eight models and their extensions in usage intention research. Moreover, it was successful in integrating key elements from 32 main effects and four moderators as determinants of intention and behaviour that were collectively posited by eight alternate models into a model that incorporated four main effects and four moderators (Venkatesh *et al.*, 2012).

Venkatesh *et al.*, (2012) further extended the UTAUT to study acceptance and use of technology in a consumer context. The new UTAUT2 integrates three constructs into

the UTAUT: hedonic motivation, price value, and habit. Individual difference, which incorporates age, gender, and experience, is hypothesised to moderate the effects of these constructs on behavioural intention and technology use. In fact, the objective of the UTAUT2 is paying particular attention to the consumer use context. In the case of UTAUT, which was originally developed to explain the employees' technology acceptance and use, it will be critical to examine how it can be extended to other contexts, such as consumer technologies (Stofega and Liamas 2009).

Prior to the development of the UTAUT2, Venkatesh, *et al.*, (2012) reviewed more than 500 articles from journals and academic proceedings. They found that many of these articles cited the original UTAUT source presented in 2003 as a general reference to the body of work on adoption and neither did they apply nor extend the UTAUT. The authors' review confirmed that most of the published studies have only examined a sub-set of the UTAUT constructs. They agreed that the adding of constructs has been on an ad hoc basis without careful theoretical considerations. Accordingly, the latter point can be considered as a research gap, which this study will try to fill.

The definitions for the UTAUT2 constructs were associated with consumers' use of technology. According to Venkatesh *et al.*, (2012) performance expectancy (PE) is defined as the degree to which using technology will provide benefits to consumers in performing certain activities. It is worth mentioning that the effort expectancy (EE) is the degree of ease that is associated with consumers' use of technology. In the meantime, social influence (SI) is the extent to which consumers perceive that

important others (e.g., family and friends) believe they should use a particular technology. Meanwhile, facilitating conditions (FC) refer to consumers' perceptions of the resources and support available to perform a behaviour (2012). According to the UTAUT2, performance expectancy, effort expectancy, and social influence are theorised to influence behavioural intention to use a technology, whereas behavioural intention and facilitating conditions determine technology use. Also, individual difference variables, namely age, gender, and experience, are theorised to moderate various UTAUT2 relationships with an exclusion to the voluntariness, which was part of the original UTAUT (Brown and Venkatesh, 2005).

As a moderating variable, voluntarism has been dropped to make it applicable to the context of consumer use as most consumer behaviours are completely voluntary, resulting in no variance in the voluntariness construct (Venkatesh, 2012).

Furthermore, the new constructs proposed by the UTAUT2 are hedonic motivation, price value, experience and habit (Venkatesh, 2012). Hedonic motivation, which is the fun or pleasure derived from using a technology, has been added to the new model as a predictor of consumers' behavioural intention to use a technology (Venkatesh, 2012). Price value refers to consumers' cognitive tradeoff between the perceived benefits of the product or service and the cost for using it. Venkatesh *et al.* (2012) argues that an important difference between a consumer use setting represented in the UTAUT2 and the organisational use setting presented at the first UTAUT model, where the UTAUT says that consumers usually bear the monetary cost of such use,

whereas employees do not. The cost and pricing structure might have a significant impact on consumers' technology use.

Furthermore, the third new construct that has been introduced to the UTAUT2 is habit, which is defined as the extent to which people tend to behave automatically because of previous learning experiences (Venkatesh *et al.*, 2012) and prior behaviour (Kim and Malhotra 2005). Moreover, experience was introduced as a new moderating variable. Experience reflects an opportunity to use a target technology and is typically operationalised as the passage of time from the initial use of a technology by an individual (Kim and Malhotra 2005; Venkatesh *et al.*, 2003). Figure (4.8) shows the variables of UTAUT2 model, where new relationships are shown in darker lines.

Whereas the previous sections presented many technology acceptance theories and models, which have been developed or used to study technology acceptance, the following section aims at presenting the most suitable theoretical framework of this study and to justify its selection.

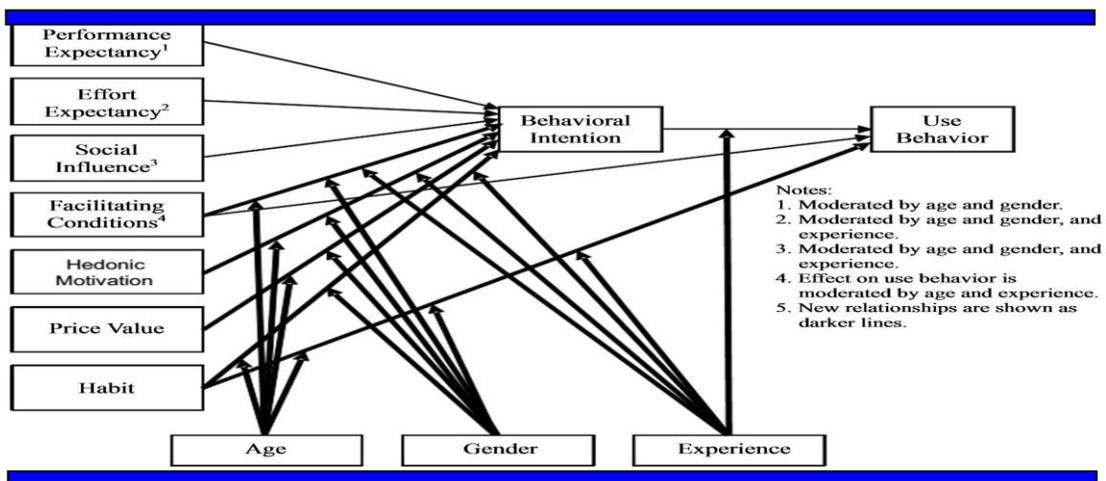


Figure 4.8: UTAUT 2 Model (Adopted from Venkatesh *et al.* 2012:160)

4.3 The Theoretical Framework of the Study

The previous section has given an overview about the different theories and models of behaviour that helped us understand and predict the behaviour of an individual, whether to accept or reject the adoption of a new ICT including the major acceptance and adoption models/theories: The Theory of Reasoned Action (Fishbein *et al.*, 1975), the Theory of Planned Behaviour (Ajzen, 1991), the Technology Acceptance Model (Davis, 1989) and extended TAM (Venkatesh and Davis, 2000), the Motivational Model (Davis, *et al.*, 1992), the model combining TAM and the Theory of Planned Behaviour (Taylor and Todd, 1995), the Model of PC Utilisation (Thompson, *et al.*, 1991), the Innovation Diffusion Theory (Rogers, 1995), the Social Cognitive Theory (Bandura, 1986), the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh *et al.*, 2003).

Although researchers have widely used the TAM to study the adoption of various technologies, it has arguably become the most influential theory in the information systems field (Lee *et al.*, 2003). However, this research will adopt the Extended Unified Theory of Acceptance and Use of technology (UTAUT2).

Although the TAM has become one of the most referenced models for examining the technology adoption process, it is less robust while investigating e-commerce usage because the e-commerce technology contains unique dimensions that cannot be explicitly explained by TAM as it has neglected some dimensions such as security and the perceived level of threat for example (Guo, 2010).

Thus, the UTAUT2 fits the scope of this thesis due to the following two inter-related factors: First, after reviewing the literature presented in Chapter Two, it has been concluded that limited studies have been conducted on the perceptions related to the adoption process of B2C e-commerce in Egypt. But, no previous empirical research has been conducted on Egyptian consumers in particular as a research sample. Accordingly, a comprehensive theoretical framework that incorporates the eight acceptance and adoption models/theories is needed for this study. In the meantime, a special attention should be given to the most influential variables from earlier studies – performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh, *et al.*, 2012).

Second, as the following section develops, the objective of the UTAUT2 fits well within the scope of this study because it has paid a particular attention to the consumer's use context (Venkatesh, *et al.*, 2012). Unlike the UTAUT, which was originally developed to explain employee technology acceptance and use, it will be important to critically examine how it can be extended to other contexts, such as the context of consumer technologies (Stofega and Liamas, 2009).

Thus, it can be concluded that the factors that have been found in the existing literature, which affect the adoption of B2C e-commerce, were identified through highlighting the most important studies and theories in this regard. From the perspective of the researcher, each one of these models has its advantages and disadvantages. Some of these models are suitable for application in some research areas more than others, according to the needs of the research. However, the

UTAUT2, which includes all the elements of these models, is one of the most comprehensive models that can be used in applications of information systems because it contains many factors which the experiments proved their ability to predict, and explain the phenomena under studies to reach reliable results (Venkatesh, *et al.*, 2012).

It is worth mentioning that this study is not interested in the price of using the technology to buy on-line, nor on the price of the product or service bought through an on-line process. It was noted that the niche segment of on-line buyers in Egypt belongs to the same socio-economic class (Journal of the American Chamber, 2012). Thus, the variable of price will make no variance (The Future of the Internet Economy in Egypt, 2014). Consequently, the price value construct has been dropped as a relevant construct to make it further applicable to the context of B2C adoption in Egypt. Furthermore, in the context of on-line shopping behavior, the variable price value is not integrated to this study because it has been argued that the use of e-commerce itself does not imply a clear, specific cost; in other words, people consider e-commerce a free consequence of having Internet access—Internet users need not pay any extra charge to be able to buy on-line (Miguel *et al.*, 2015; Yu, 2012).

4.4 Theoretical Foundations and Previous Research

The literature on B2C adoption research has revealed the integration of many well established theories. Accordingly, in order to explore the B2C adoption, this section investigates the literature from the theoretical stream and the results of some empirical investigations that fit within this study's theoretical framework.

Although the previous section presented the study's theoretical framework and a justification for its selection, there is a need to give a brief overview regarding the major adoption theories based on their integration to the previous literature. Previous literature has revealed that the most popular theories that scholars and practitioners have integrated to understand e-commerce adoption are the TAM and UTAUT (Guo, 2010; Salisbury *et al.*, 2001; Suh and Han, 2003).

Furthermore, since the most published studies have only studied a subset of the UTAUT constructs, and that the addition of UTAUT constructs has been made on an ad hoc basis without careful theoretical considerations (Venkatesh *et al.*, 2012). This study will fill the research gap by developing research hypotheses that empirically test the UTAUT2 model and empirically evaluate its proposed extended constructs based on the observed gaps in the literature review.

Since its original publication, the UTAUT has served as a baseline model and has been applied in studying a variety of technologies in both organisational and non-organisational settings. There have been many applications and replications of the entire model or part of the model in organisational settings that have contributed to fortifying its generalisability (Neufeld *et al.*, 2007). However, it was originally developed to explain the employee technology acceptance and use within an organisational context. Accordingly, this study will adopt the UTAUT2 as it fits its scope well and pays particular attention to the consumer use context (Venkatesh, *et al.*, 2012).

Having reviewed the literature, it has been observed that little research has integrated the UTAUT2 within the scope of e-commerce since its introduction in 2012. The following paragraphs will present some of the major findings of some empirical research that have adopted the UTAUT2 in relation to e-commerce adoption.

An empirical investigation, which was conducted by Tomás Escobar-Rodríguez and Elena Carvajal-Trujillo (2013), examined the different drivers of on-line airline ticket purchasing behaviour within the framework of UTAUT2. Their research includes seven explanatory variables. They are: performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price saving, and habit. Their research has adopted a quantitative research method by using a survey instrument, research sample that included 1,360 respondents from Spain. The results of their work revealed that the main predictors of on-line purchase intention are: habit, price saving, performance expectancy, and facilitating conditions. But there was no significant impact of effort expectancy on the on-line purchase intention, social influence from referents; and hedonic motivation to use the website, and their research did not extend the UTAUT2 (Rodríguez and Trujillo, 2013).

However, the results of Tomás Escobar-Rodríguez and Elena Carvajal-Trujillo (2013) research contradicts with another 2015 empirical study that has been also conducted by Miguel in Spain and examined (UTAUT2) within the theme of B2C research. It investigated gender differences in the on-line purchasing behaviour of consumers; the research model added perceived risk and trust as the two new variables to be empirically tested (Miguel *et al.*, 2015).

Its results have revealed that gender differences are significant in relationships between effort expectancy and social influence on purchase intention; product type affects the relationship between perceived risk and purchase intention in digital goods, where the influence is significantly higher for women. Significant gender differences do not appear for purchase intention in non-digital goods (Miguel *et al.*, 2015). The product type significantly influences the relationship between performance expectancy and purchase intention, and between facilitating conditions and purchase intention. Product type significantly influences the relationship between perceived risk and purchase intention for women but not for men (Miguel *et al.*, 2015).

4.5 Chapter Summary

This chapter has provided an overview of the theories of predicting, explaining and understanding the human behaviour. The main purpose of giving an overview of the major theories is identifying the theoretical framework of this study, which aims to identify the major factors that affect the intention to adopt B2C e-commerce in Egypt, and to develop and design a model that can be used to measure and investigate the factors affecting the B2C adoption in this country.

Consequently, the extended Unified Theory of Acceptance and Use Technology (UTAUT2) is the most suitable theoretical framework of this study, which has incorporated the eight acceptance and adoption models/theories. Moreover, this chapter presented the rationale and justification for selecting the UTAUT2 model.

Furthermore, since the most published studies have only studied a subset of the UTAUT constructs, and that the addition of UTAUT constructs has been made on an ad hoc basis without careful theoretical considerations (Venkatesh *et al.*, 2012). This study will fill the research gap by developing research hypotheses that empirically test the UTAUT2 model and empirically evaluate its proposed extended constructs based on the observed gaps in the literature review. Accordingly, the following chapter will present the conceptual development of research hypotheses, and will show the proposed research model based on the development of UTAUT2.

CHAPTER FIVE

HYPOTHESES DEVELOPMENT AND CONCEPTUAL MODEL

5.1 Introduction

Based on the major findings concluded from Chapter Two: E-Commerce and the Arabian Context; Chapter Three E-Commerce: The Egyptian Context; and Chapter Four: Theoretical Models Underpinning the Research, the research's sixteen hypotheses are developed to propose one dependent variable, which is the Egyptian consumers' intention to adopt B2C. In this regard, the adopted operational definition for the intention to adopt B2C is the intention to buy on-line as a result of the consumer's prior experience in on-line buying (Karahanna, 1999; Yahya, 2012).

The following section highlights the research hypotheses with the identification of interrelated moderating variables, which are age, gender and experience; in addition to presenting the research conceptual model.

5.2 Research Hypotheses

Hypothesis One has been formulated to verify the effect of on-line satisfaction on Egyptian consumers' intention to adopt B2C. The operational definition for on-line satisfaction is the interior state of the customer's feelings about past purchases and experiences of e-shopping (Grace, 2009). Satisfaction plays a particularly important

role in e-commerce because of its impact on the customer's loyalty (Auh and Johnson, 1998; Shankar *et al.*, 2000; So derlund, 1998). Prior studies have provided empirical support for the effect of satisfaction on on-line shopping, and identified the significance of customer satisfaction (Bukhari *et al.*, 2013; Gounaris *et al.*, 2010; Liu *et al.*, 2008). By increasing customers' satisfaction, firms achieve higher retention rate, positive word of mouth and increased profits (Zeithaml, 2000).

It has been argued that an increase in satisfaction occurs if performance is higher than expectation, while a decrease in satisfaction results if performance fails to meet expectation (Binninger, 2008; Chang and Chin, 2011; Chung and Shin, 2010; Limbu, and Lunsford, 2011; Mittal, and Kumar, 2001; Spreng *et al.*, 2001; Sultan and Henrichs, 2000). It is worth mentioning that no formal research has been conducted in Egypt regarding on-line satisfaction, yet. Consequently, the following hypothesis is formulated:

H1: On-line satisfaction affects Egyptian consumer's intention to adopt B2C e-commerce.

Hypothesis Two proposes that the on-line interactivity affects the consumers' intention to adopt B2C e-commerce. On-line interactivity refers to how well the intended users can interact with a technology to carry out the assigned activity (Chou and Hsiao, 2007; Zimmerman and Muraski, 1995). The adoption of the e-commerce process by consumers crystallises around the following two major aspects:

[1] Getting information about the product; and

[2] Purchasing the product from an on-line vendor (Pavlou, 2006).

Thus, providing sufficient information by vendor and comments on the same purchased product, or through the availability of information on the on-line store during the purchasing process in terms of full descriptions, virtual images, prices in addition to all the relevant data are all correlated with accepting the on-line purchasing process. It has been argued that interactivity affects different types of on-line involvement (Jiang *et al.*, 2010). Among the major factors that affect interactivity during the B2C process is the extent to which customers can interact with on-line vendor to obtain answers to their queries (Yoo *et al.*, 2015). Because it has been observed that the Egyptian consumers have the tendency to interact either with the vendor or the product itself during off-line shopping (Journal of the American Chamber, 2012), the following hypothesis is formulated to test the effect of on-line interactivity on Egyptians' adoption to B2C e-commerce:

H2: On-line interactivity affects Egyptian consumer's intention to adopt B2C e-commerce.

Hypothesis Three, meanwhile, investigates the effect of the on-line trust factor on the intention to adopt B2C e-commerce. The operational definition for on-line trust as adopted in this study is an expectancy that the promise of another can be relied upon (Lemuria Carter 2008, Mayer *et al.*, 1995; Zucker, 1986). Trust has to be maintained in the on-line shopping because it is an important factor of customer retention (Liao and Keng, 2013).

According to Hofstede's model, Egypt ranks high in uncertainty avoidance, which means that Egyptians try to avoid uncertain, or ambiguous situations (Hofstede,

2001). According to Zhang (2011), uncertainty occurs when there are many implications to a decision. For elaboration, unlike the traditional shopping, on-line purchasing makes consumers more sensitive. In traditional shopping, consumers physically experience the commodities. Thus, they develop trust and reduce their level of uncertainty before making a purchase decision by visiting the shop, touching the commodity, or seeking advice from the shop assistant. Accordingly, physical interaction with the product prior to buying a specific product can play a role in customers' trust and purchase decisions (Zhang, 2011). According to Rashid (2003), trust can lead to the development of relationship marketing, which on the long run can create satisfied and loyal consumers. In fact, the latter aspect is very important because it helps in the diffusion of the e-purchasing process.

It is noted that the consumers' perceived uncertainty comes from both endogenous and exogenous uncertainty. According to Littler and Melanthiou (2006), the endogenous uncertainty is generally caused by consumers' personal reasons such as the lack of knowledge and lack of experience, or the inability to determine the attributes of commodities. On the other hand, exogenous uncertainty is caused by consumers' perception of external factors. It has two major forms: a perceived commodity uncertainty, and an uncertainty of behaviour (Chevalier and Mayzlin, 2006). The major cause for the perceived commodity uncertainty is the type of uncertainty that has been witnessed due to the lack of information about the attributes of a given commodity such as its quality, style, or cost. The other type of exogenous uncertainty is the uncertainty of behaviour, which is the outcome of the consumers'

inability to determine the credibility and truth of the information provided by the seller (Chevalier and Mayzlin, 2006). It can be argued that many Egyptian consumers are resistant to e-commerce because they try to avoid uncertain and untrusted situations (Hofstede, 2001). Consequently, the following hypothesis is formulated to investigate if the on-line trust affects the Egyptians' adoption to B2C e-commerce:

H3: On-line trust affects Egyptian consumer's intention to adopt B2C e-commerce.

Hypothesis Four proposes that the on-line security affects Egyptian consumer's intention to adopt B2C e-commerce. On-line security refers to individuals' right to protect their access to information and control their personal information with respect to its collection, use and transfer over the Internet (Alharbi *et al*, 2013). The security measures that consumers perceived security in the seller's websites during B2C transactions constitutes one of the key factors to which consumers attach most importance for on-line purchasing (Kim *et al.*, 2011). Prior research on the customers' perceptions and evaluations of the on-line security protection have been categorised into the following two streams: objective and subjective security judgments by consumers (Chellappa and Pavlou, 2002; Kim *et al.*, 2010; Linck *et al.*, 2006; Peikari, 2010). From the objective perspective, security refers to the extent of which the security measures and technologies of a website function properly. This perspective utilises a technical and engineering approach. The subjective perspective on the other hand states that what matters is the perceptions of customers towards the security measures and solutions of the website, which might be different from each

another. In other words, the subjective perspective maintains that no matter how well the security solutions of a website work properly as what matters is how the customers perceive such technologies (Shaha, 2014). Accordingly, in line with the adopted on-line security definition in this study, the consumers' objective perspective, which refers to adequate security measures and technologies of the on-line vendor, is the indicator that fits the scope of this thesis. Thus, the following hypothesis is formulated to test how on-line security affects Egyptian consumers' adoption of B2C:

H4: On-line security affects Egyptian consumer's intention to adopt B2C e-commerce.

Furthermore, Hypotheses One, Two, Three, and Four are the proposed extensions (i.e. development) to the UTAUT2 model as suggested in this study, and that the interrelated moderating variables represented in age, gender and experience do not moderate the investigated relationship between the adoption of B2C as the research dependent variable and the four independent variables: On-line satisfaction, On-line interactivity, On-line trust and On-line security.

Unlike the previous four constructs, which represent an extension to the UTAUT2 model, the following twelve hypotheses are directly related to the original UTAUT2 constructs and moderating variables.

Hypothesis Five states that performance expectancy (PE) affects consumers' intention to adopt B2C e-commerce. In this regard, the Performance expectancy (PE) refers to the degree to which an individual believes that on-line purchasing will be more useful rather than the traditional purchasing process (Cagla Ozen Seneler, 2009;

Yahya *et al.*, 2012). According to Bhatta Cherjee (2001), when users believe that a system is useful to them, they feel satisfied and want to continue using it. The PE construct has been the strongest predictor of intention to use (Venkatesh *et al.*, 2003), and prior studies have acknowledged that PE is a strong predictor of behavioural intention towards technologies (Im *et al.*, 2011; Lallmahomed *et al.*, 2013; Martins *et al.*, 2014; Rodríguez and Trujillo; 2013; Weerakkody *et al.*, 2013). Thus, the PE's effect on on-line shopping within the Egyptian context needs to be investigated. Consequently, the following hypothesis is formulated:

H5: Performance expectancy (PE) affects Egyptian consumer's intention to adopt B2C e-commerce.

Hypothesis Six proposes that Effort Expectancy (EE) affects Egyptian consumer's intention to adopt (B2C) e-commerce. The EE refers to the degree of ease that is associated with the use of the system (Venkatesh *et al.*, 2003). Consequently, when customers use a website to search for information and to make a purchase transaction, the amount of effort they have to exert, affects their intention to adopt the on-line shopping method (Rodríguez and Trujillo; 2014; Shen and Chiou, 2010). Previous studies have reported that when users perceive a system is easy and effortless to use, they have a positive attitude towards accepting the system (Martins, 2014; Morris and Venkatesh, 2000; Venkatesh *et al.*, 2003; Weerakkody, 2013). The relationship between EE and Egyptians adoption of on-line shopping needs to be explored. Therefore, it is hypothesised that:

H6: Effort expectancy (EE) affects Egyptian consumers' intention to adopt B2C e-commerce.

Hypothesis Seven proposes that Social Influence (SI) affects the Egyptian consumer's intention to adopt B2C e-commerce. SI refers to the influence of others on purchase intentions (Charles Dennis, 2007; Rohm and Swaminathan, 2004). The relationship between SI and adoption has been widely investigated in the information systems field (Martins, 2014; Venkatesh and Brown, 2001). Many scholars in information systems have proposed the impacts that SI represented by friends, family, colleagues and peers have on behaviour adoption at the individual level (Irani, Dwivedi, and Williams, 2009; Lee *et al.*, 2011; Tan and Teo, 2000). Further, a study by Venkatesh and Brown (2001) found that the SI of friends and families is a strong factor that affects the adoption of technologies. In addition, it is worth mentioning that Egypt was rated among the Arab countries to have a more collective than individualistic culture and the Egyptians are more dependent on groups (Hofstede, 2001). Given this context, the following hypothesis is proposed:

H7: Social influence (SI) affects Egyptian consumer's intention to adopt B2C e-commerce.

Hypothesis Eight proposes that Hedonic Motivation (HM) affects Egyptian consumer's intention to adopt B2C e-commerce. HM refers to the fun or pleasure derived from using a technology, and it has been shown that it plays an important role in determining technology acceptance and use (Brown and Venkatesh 2005; Venkatesh *et al.*, 2012). The perceived potential for fun is a factor that affects and encourages the use of new technologies in general (Bonera, 2011; Bruner and Kumar, 2005; Lee *et al.*, 2005; Liu and Forsythe, 2011). Thong *et al.*, (2006) suggested that

enjoyment has a significant effect on e-shopping. The following hypothesis is developed to investigate HM during on-line shopping as a factor influencing the adoption of B2C e-commerce among Egyptians.

H8: Hedonic motivation affects Egyptian consumer's intention to adopt B2C e-commerce.

Hypothesis Nine proposes that Facilitating Conditions (FC) affect consumer's intention to adopt (B2C) e-commerce. FC refers to consumers' perceptions of the available resources and support to perform a certain behaviour (Brown and Venkatesh, 2005; Venkatesh *et al.* 2003). Additionally, the ability to carry out an action efficiently, the individual must feel capable of handling and controlling the aspects of information technology (IT) during the purchase (Chau and Hu, 2001). Therefore, FC can be a determinant to consumers' intention towards using a technology (Weerakkody, 2013).

Previous research indicated that technology usage is always hindered by the issues of digital divide (Pick and Nishida, 2015; Tsikalas, Lee, and Newkirk, 2007; Vigdor and Ladd, 2010; Zhang; 2014). The digital divide refers to unequal access to computers and the Internet, which creates a gap between the "haves" and "have-nots" (Zhang 2014: 206). Egypt has increased Internet penetration to minimise the difficulties that hinder consumers from using the Internet; thus allow increasing B2C adoption. According to the 2014 ICT Indicators Report that was published by the Ministry of Communications and Information Technology, the annual Internet penetration growth rate in Egypt is 6.53% (ICT Indicators, 2014); the report also

indicated that a monthly increase in the penetration rate. In fact, the latter point can benefit the diffusion of e-commerce adoption in Egypt if it is supported with strategic plans (The Future of the Internet Economy in Egypt, 2014). Consequently, the following hypothesis is developed to test consumers' perceptions of the available Internet resources and support in Egypt in relation to B2C adoption:

H9: Facilitating conditions affect the Egyptian consumer's intention to adopt B2C e-commerce.

Hypothesis Ten proposes that habit (HT) influences consumer's intention to adopt B2C e-commerce. HT refers to the extent to which people tend to perform a certain set of behaviours automatically because of learning due to prior experience (Venkatesh *et al.*, 2012). Consequently, within the context of the on-line shopping, HT refers to a repetitive purchase intention (Chiu *et al.*, 2012). The link between HT and repetitive purchase intention can be categorised according to the two perspectives. The first perspective asserts that HT exerts a direct effect on the repeated purchase intention, while the second perspective asserts that HT moderates the relationship between a repeated purchase intention and the antecedents of a repeated purchase intention (Khalifa and Liu, 2007; Hsu *et al.*, 2015). The focus of this study is examining the HT effect on B2C adoption. Thus, the following hypothesis is developed:

H10: Habit affects Egyptian consumers' intention to adopt B2C e-commerce.

Furthermore, the moderating variables adopted in this study's model are age, gender and experience. The inclusion of each moderating variable depends on the investigated construct. For elaboration, the influence of Performance Expectancy (PE) on intention to adopt B2C is moderated by age and gender only, while the influence of Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), Facilitating Conditions (FC) and Habit (HT) are moderated by age, gender and experience.

Prior studies have clearly confirmed the role of gender difference in the IT acceptance (Akman *et al.*, 2005; Dwivedi *et al.*, 2006; Garbarino and Strahilevitz, 2004; Lian and Yen, 2014; Martins and Popovic, 2014; Riedl and Kenning, 2010; Taipale, 2013; Van Slyke and Belanger, 2002; Wu, 2003). Gender is an essential segmentation variable for commercial research. Literature on e-commerce reports that men purchase on-line more than the women do (Dittmar and Meek, 2004; Hasan, 2010; Miguel *et al.*, 2015).

It has been noted that men hold more favourable perceptions towards on-line shopping than females despite the fact that women usually have much more positive attitudes towards shopping in general and towards both store and catalogue shopping in particular, women were found to perceive higher risk in on-line shopping than men do (Garbarino and Strahilevitz, 2004; Gong *et al.*, 2013; Van Slyke *et al.*, 2002). Consequently, there is still a need to investigate the moderating effect of gender within the Egyptian context.

Furthermore, previous research also found that experience helps the on-line consumers overcome the risk that is associated with on-line purchase for different categories of products (Lennon *et al.*, 2007; Park and Stoel, 2005). Other studies found no effect of experience as a moderating variable on e-commerce adoption (Crespo and Del Bosque, 2010).

Although some authors have found that age has no significant relationship with the use of IT, assuming that young people already know about the Internet and that older people were resistant, which has been found to be an incorrect assumption (Joines *et al.*, 2003; Roussos, 2007; Smith and Comstock, 1995; Swinyard and Smith, 2003; Zhang, 2005). Others, however, have found that the age variable moderates the adoption of the on-line shopping (Bhatnagar *et al.*, 2000; Donthu and Garcia, 1999; Doolin *et al.*, 2005; Liebermann and Stashevsky, 2009; Liu and Forsythe, 2011). Other studies have revealed no effect (Li *et al.*, 1999; Rohm and Swaminathan, 2004). Thus, there is a need to investigate the moderating effect of age in relation to B2C adoption within the Egyptian context.

Consequently, the below hypotheses investigate the moderating effect of age, gender and experience between Performance Expectancy (PE), Effort Expectancy (EE), Social influence (SI), Hedonic Motivation (HM), Facilitating Conditions (FC), Habit (HT) and the behavioural intention to adopt B2C. (*Please refer to Table (5.1) for mapping the research objectives, hypothesis and operational definitions*).

H11: The effect of Performance Expectancy (PE) on intention to adopt B2C is moderated by age and gender.

H12: The effect of Effort Expectancy (EE) on intention to adopt B2C is moderated by age, gender and experience.

H13: The effect of Social Influence (SI) on intention to adopt B2C is moderated by age, gender and experience.

H14: The effect of Hedonic Motivation (HM) on intention to adopt B2C is moderated by age, gender and experience.

H15: The effect of Facilitating Conditions (FC) on intention to adopt B2C is moderated by age, gender and experience.

H16: The effect of Habit (HT) on intention to adopt B2C is moderated by age, gender and experience.

Having introduced the research hypotheses, the following Table (5.1) presents the categorisation of research hypotheses in line with study's objectives. In addition, it further presents the research constructs and their operational definitions as being adopted in this study.

Table (5.1): Overall Constructs Table

AIM: to investigate the major factors that affect the intention to adopt B2C e-commerce in Egypt through developing a model, which can be used to identify the factors affecting the adoption of B2C in Egypt.

Objective	Hypothesis	Construct	Operational Definition	Source
Objective 1: Assessing the major factors that affect the intention for Egyptians to adopt B2C e-commerce.	H1: On-line satisfaction affects Egyptian consumer's intention to adopt B2C e-commerce.	On-line Satisfaction (OS)	Interior state of the customer's feelings about past purchases and experiences of e-shopping.	(Grace, 2009).
	H2: On-line interactivity affects Egyptian consumer's intention to adopt B2C e-commerce.	On-line Interactivity (OI)	How well the intended users can interact with a technology to carry out the assigned activity.	(Zimmerman and Muraski, 1995; Chou and Hsiao, 2007)
	H3: On-line trust affects Egyptian consumer's intention to adopt B2C e-commerce.	On-line Trust (OT)	An expectancy that the promise of another can be relied upon.	(Lemuria Carter 2008, Mayer <i>et al.</i> , 1995; Zucker, 1986).
	H4: On-line security affects Egyptian consumer's intention to adopt B2C e-commerce.	On-line Security (OSY)	Individual's right to protect their access and control their personal information with respect to its collection, use and transfer over the Internet.	(Alharbi <i>et al.</i> , 2013).

Table (5.1): Overall Constructs Table (Continued)

AIM: to investigate the major factors that affect the intention to adopt B2C e-commerce in Egypt through developing a model, which can be used to identify the factors affecting the adoption of B2C in Egypt.

Objective	Hypothesis	Construct	Operational Definition	Source
Objective 2: Developing an e-commerce adoption model for Egyptian consumers by investigating the factors affecting the adoption of B2C in Egypt.	H5: Performance expectancy (PE) affects Egyptian consumer's intention to adopt B2C e-commerce	Performance Expectancy (PE)	"The degree to which an individual believes that on-line purchasing will help to be more useful rather than the traditional purchase"	(Cagla Ozen Seneler, 2009; Yahya <i>et al.</i> , 2012)
	H6: Effort expectancy (EE) affects Egyptian consumer's intention to adopt B2C e-commerce.	Effort Expectancy (EE)	"The degree of ease associated with the use of the system.	(Venkatesh <i>et al.</i> , 2003)
	H7: Social influence (SI) affects Egyptian consumer's intention to adopt B2C e-commerce.	Social Influence (SI)	"The influences of others on purchase intentions"	(Charles Dennis, 2007; Rohm and Swaminathan, 2004)
	H8: Hedonic motivation affects Egyptian consumer's intention to adopt B2C e-commerce.	Hedonic Motivation (HM)	"the fun or pleasure derived from using a technology, and it has been shown to play an important role in determining technology acceptance and use"	(Brown and Venkatesh 2005; Venkatesh <i>et al.</i> , 2012)
	H9: Facilitating conditions affect Egyptian consumer's intention to adopt B2C e-commerce.	Facilitating Conditions (FC)	Consumers' perceptions of the resources and support available to perform a behaviour	(Brown and Venkatesh 2005; Venkatesh <i>et al.</i> , 2003)

Table (5.1): Overall Constructs Table (Continued)

AIM: to investigate the major factors that affect the intention to adopt B2C e-commerce in Egypt through developing a model, which can be used to identify the factors affecting the adoption of B2C in Egypt.

Objective	Hypothesis	Construct	Operational Definition	Source
<p>Objective 2: (Continued) Developing an e-commerce adoption model for Egyptian consumers by investigating the factors affecting the adoption of B2C in Egypt.</p>	<p>H10: Habit affects Egyptian consumer's intention to adopt B2C e-commerce.</p>	<p>Habit (HT)</p>	<p>The extent to which people tend to perform behaviours automatically because of learning due to prior behaviour</p>	<p>(Venkatesh <i>et al.</i>, 2012)</p>
<p>Objective 3: Investigating the moderating effect of age, gender and experience between performance expectancy (PE), effort expectancy (EE), social influence (SI), hedonic motivation (HM), facilitating conditions (FC), habit (HT) and the behavioural intention to adopt B2C.</p>	<p>H11: The effect of performance expectancy (PE) on intention to adopt B2C is moderated by age and gender H12: The effect of effort expectancy (EE) on intention to adopt B2C is moderated by age, gender and experience. H13: The effect of Social influence (SI) on intention to adopt B2C is moderated by age, gender and experience. H14: The effect of hedonic motivation (HM) on intention to adopt B2C is moderated by age, gender and experience.</p>	<p>PE, EE, SI, HM,</p>	<p>PE, EE, SI and HM were operationally defined above</p>	<p>(Brown and Venkatesh 2005) (Venkatesh <i>et al.</i>, 2003) (Venkatesh <i>et al.</i>, 2012) (Charles Dennis, 2007; Rohm and Swaminathan, 2004)</p>

Table (5.1): Overall Constructs Table (continued)

AIM: to investigate the major factors that affect the intention to adopt B2C e-commerce in Egypt through developing a model, which can be used to identify the factors affecting the adoption of B2C in Egypt.

Dependent Variable	Hypotheses	Construct	Operational Definition	Source
<p>Objective 3: Investigating the moderating effect of age, gender and experience between performance expectancy (PE), effort expectancy (EE), social influence (SI), hedonic motivation (HM), facilitating conditions (FC), habit (HT) and the behavioural intention to adopt B2C.</p>	<p>H15: The effect of facilitating conditions (FC) on intention to adopt B2C is moderated by age, gender and experience.</p> <p>H16: The effect of habit (HT) on intention to adopt B2C is moderated by age, gender and experience.</p>	<p>FC and HT</p>	<p>FC and HT were operationally defined above</p>	<p>(Cagla Ozen Seneler. 2009)</p> <p>(Yahya <i>et al.</i>, 2012)</p>
Dependent Variable	Hypotheses	Construct	Operational Definition	Source
<p>Intention to adopt B2C</p>	<p>H1: H2: H3: H4: H5: H6: H7: H8: H9: H10: H11: H12: H13: H14: H15: H16</p>	<p>Intention to adopt (IA)</p>	<p>“the intention to buy on-line as a result of consumer’s prior experience in on-line buying”</p> <p>“The re-purchase decisions by those who have carried out at least one purchase”</p>	<p>(Yahya <i>et al.</i>, 2012; Karahanna <i>et al.</i>, 1999; Vijayasathy, 2004).</p>

5.3 Development of the Research Conceptual Model

Since its introduction in 2012, The UTAUT2 is one of the most predominant and comprehensive models that exists in the literature to date (Lian, 2015; Miguel *et al.*, 2015). Having introduced the research hypotheses, the Conceptual Model of this study covers the inter-related relationship between the thesis' dependent, independent and moderating variables.

Venkatesh *et al.*, (2012) extended UTAUT and proposed the UTAUA2 model within a consumer context. The major difference between UTAUT and UTAUT2 is that the latter model adds three context-specific variables (Hedonic Motivation, Price Value, and Habit) in order to apply the UTAUT in a consumer context (Lian, 2015). Since this clarifies the importance of variables that are specific to the research context, the researcher proposes his own context variables for this study as will be elaborated in the following paragraphs.

In this research, the constructs that are being used in the extended UTAUT2 model are: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), Habit (HI) and Facilitating Conditions (FC). Age, gender and experience will moderate the relationship between the six independent variables and the dependent variable except for the performance expectancy (PE) construct as recommended by Venkatesh *et al.*, (2003, 2012), who suggested that PE is only moderated by age and gender.

It is worth mentioning that the researcher voices no need to integrate experience as a moderating variable to the original UTAUT2 model to test the relationship between PE

and B2C adoption in Egypt. The rationale behind this decision is that because B2C is still in its introductory stage in Egypt, the Egyptian consumers are not yet experienced with on-line shopping (Journal of the American Chamber of Commerce in Egypt, 2014).

On a further note, as elaborated in Chapter Four, this study has omitted the price value construct as a UTAUT2 construct to make it further applicable to the context of B2C adoption in Egypt. It was noted that the niche segment of the on-line buyers in Egypt belongs to the same socio-economic class (Journal of the American Chamber, 2012). Therefore, the variable of price will make no variance (The Future of the Internet Economy in Egypt, 2014). Further, within the context of the on-line shopping behaviour, the variable price value is not integrated into this study because it has been argued that the use of B2C e-commerce itself does not imply a clear, specific cost. In other words, people consider B2C e-commerce a free consequence of having Internet access because the Internet users do not need to pay any extra charge to buy on-line (Miguel *et al.*, 2015; Yu, 2012).

According to the review of literature presented in Chapters Two and Three, the proposed additional constructs for this model are the On-line satisfaction (OS), the On-line interactivity (OI), the On-line trust (OT) and the On-line security (OSY), which extend and develop the original UTAUT2 model. In line with the first objective of this study, which assesses the major factors that affect the intention for Egyptians to adopt B2C e-commerce, the four constructs [OS, OI, OT, and OSY] will be additional independent variables to the model without moderators. The rationale behind excluding any moderating variables that moderate the relationship between the newly proposed four

constructs [OS, OI, OT, OSY] and B2C adoption is because the B2C is still in its introductory stage in Egypt (Journal of the American Chamber of Commerce in Egypt, 2014). Thus, there is a need to assess the major factors that affect the intention for Egyptians to adopt B2C.

Accordingly, Figure (5.1) presents the conceptual model of this study as to be empirically tested.

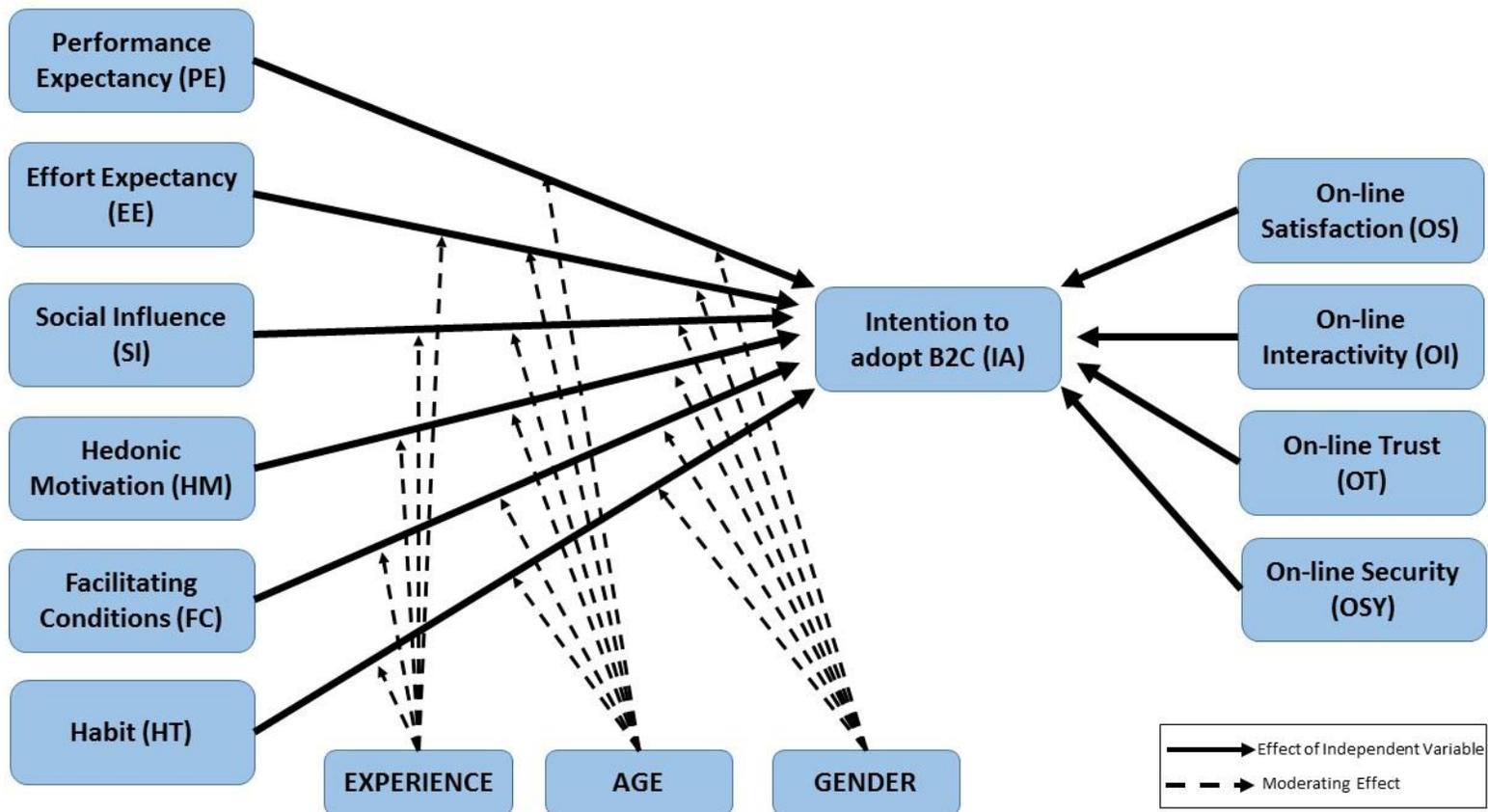


Figure (5.1): The Research Conceptual Model

5.4 Chapter Summary

This chapter has presented the sixteen hypotheses of the research in addition to the research model based on the extended Unified Theory of Acceptance and Use Technology (UTAUT2), which was selected as the theoretical framework of this research.

The conceptual model proposed in this chapter has integrated the constructs that are being used in the extended UTAUT2 model are: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), Habit (HI) and Facilitating Conditions (FC). Age, gender and experience will moderate the relationship for the six independent variables and the dependent variable except for the PE construct that will only be moderated by age and gender. The proposed additional constructs for to extend and develop the original UTAUT2 model are On-line Satisfaction (OS), On-line Interactivity (OI), On-line Trust (OT) and On-line Security (OSY).

Chapter Six will present the methodological framework of the study followed by Chapter Seven, which will present the results of the empirical investigation of this model.

CHAPTER SIX

RESEARCH METHODOLOGY

6.1 Introduction

Research methodologies directly affect the validity and generalisability of a study. In turn, they play a vital role in the development of knowledge (Yang *et al.*, 2006). Jha has argued that methodology is "an important tactical consideration while there is no blueprint, it is being directly related to the researchers' ideologies, and failure to make the necessary consideration of this risks research confusion" (2008: 81). According to Kot Hari (2004), methodology refers to the overall approach to the research process from the theoretical foundation, to data collection and analysis. This chapter will show the different components of research methodology, including research philosophy, approach, strategy, techniques, questionnaire design, pilot study, sampling techniques, data collection process, and statistical analysis with the aim of justifying the choice of the research methodology for this study.

6.2 Research Aim and Objectives

In order to decide on a suitable methodological approach, the aim and objectives of the research must be considered (Wood and Welch, 2010). The overall aim of this study is to investigate the major factors that affect the intention to adopt B2C e-commerce in Egypt through developing a model, which can be used to identify the factors affecting the adoption of B2C in Egypt.

In light with the research aim and research questions, this study tries to achieve the following three objectives:

- [1] Assessing the major factors that affect the intention for Egyptians to adopt B2C e-commerce;
- [2] Developing an e-commerce adoption model for Egyptian consumers by investigating the factors affecting the adoption of B2C in Egypt;
- [3] Investigating the moderating effect of age, gender and experience between performance expectancy (PE), effort expectancy (EE), social influence (SI), hedonic motivation (HM), facilitating conditions (FC), habit (HT) and the behavioural intention to adopt B2C.

6.3 Research Philosophy

The research philosophy involves a belief of the way data about a phenomenon should be collected, analysed and applied (Galliers, 1991). The adoption of a research philosophy enables a researcher to identify the way to highlight a strategy and choose the methods to conduct a study (Saunders *et al.*, 2012). Easterby-Smith *et al.* (2002) state that the research philosophy helps clarify the research design. Thus, the researcher must carefully choose the epistemological and ontological assumptions that fit the research objectives. It is known that the choice of assumptions affects the way in which the researcher thinks about the research methodology. In addition, establishing the most suitable epistemological and ontological assumptions will help clarify the research design while highlighting the appropriate methods of data collection (Bryman and Bell, 2007). Epistemological and ontological considerations

are integrated and considered in relation to the gaps in literature that supports the research objectives (Bryman and Bell, 2007).

Many researchers have grouped research philosophies under different main paradigms (Easterby-Smith *et al.*, 2002; Saunders *et al.*, 2012). For instance, Saunders *et al.*, (2012) classified them into four philosophies: realism, interpretivism, positivism, and pragmatism.

According to Saunders *et al.*, (2012) realism is a philosophical position that claims to provide an account of the nature of scientific practice; he also wrote that interpretivism is an epistemological consideration that considers the views of the researchers, who have been critical of the application of the scientific model to the study of the social world, and who have been influenced by different intellectual traditions. Positivism, on the other hand, is based on that stance of dualism and objectivism, where the researcher and participants are two different entities, and by following the scientific methods of enquiry (Easterby-Smith *et al.*, 2002; Saunders *et al.*, 2007).

Finally, paradigm is a set of assumptions that provides a conceptual, or a philosophical framework. It is a basic set of beliefs, or assumptions that guides a researcher's inquiry (Deshpande, 1983), and serves the following four purposes:

[1] Guiding professionals because it indicates important issues challenging any discipline;

[2] Developing models and theories that permit practitioners to solve these issues;

[3] Establishing criteria for tools such as methodology, instruments, and data collection that will help solve these issues; and

[4] Providing the principles, procedures, and the methods to be considered when similar issues (phenomena) re-appear (Deshpande, 1983). According to Jankowicz, (2005), there are three main basic assumptions behind these paradigms. They are ontology, epistemology and axiology.

The normal process of a positivistic philosophy is establishing an appropriate theory and constructing a hypothesis (Jankowicz, 2005, Smith *et al.*, 2002). In the meantime, positivism searches for causal explanations and fundamental laws, as well as reducing the whole to its simplest possible elements to facilitate analysis (Smith *et al.*, 2002). Furthermore, the key assumption of positivism is that our world exists independently of any individual's cognition, and that its properties should be measured by using objective methods rather than depending on subjectivity through data observation, or intuition.

The phenomenological philosophy, by contrast, considers the subjective state of individuals through focusing on an understanding of the meaning and context rather than the measurement of social phenomena and searching for external causes or fundamental laws (Easterby-Smith *et al.*, 1991; Easterby-Smith *et al.*, 2002). Phenomenology, meanwhile, uses qualitative approaches to understand a specific

aspect. Furthermore, this approach intends to understand and explain a phenomenon, rather than searching for external causes or fundamental laws.

Table (6.1) summarises some of the strengths and weaknesses of these two research philosophies. In general, understanding the philosophical issues is critical because it has important implications for the choice of a research approach, and the strategies and methods of data collection. Among the other research philosophies is post-positivism, which stresses that social researchers assume a learning role rather than a testing one (Agar, 1988:12). One of the opportunities and challenges posed by this approach is that researchers recognise the common humanity that connects them to the people, who participate in their research. Post-positivism and qualitative methods are usually used together.

Table (6.1): Strengths and weaknesses of the positivist and phenomenological research philosophies	
Strengths	Weaknesses
Positivist (quantitative paradigm)	
<ul style="list-style-type: none"> ▪ Fast and economical. ▪ Statistics are aggregated from large samples. ▪ They can provide wide coverage of a range of situations. 	<ul style="list-style-type: none"> ▪ Because they focus on what has been recently measured, they make it hard to for policy-makers to infer what changes and actions should take place in the future. ▪ The methods used tend to be rather inflexible and artificial. ▪ They are not very effective in understanding processes or the significance that people attach to actions. ▪ They are not very helpful in generating theories.

Table (6.1): Strengths and weaknesses of the positivist and phenomenological research philosophies (Continued)

Phenomenological (qualitative paradigm)	
<ul style="list-style-type: none"> ▪ Data gathering methods are seen as more natural than artificial. ▪ Ability to understand people’s meaning. ▪ Ability to adjust to new issues and ideas as they emerge. ▪ Contribute to theory generation. ▪ Ability to look at change processes over time. 	<ul style="list-style-type: none"> ▪ Hard to control pace, progress and end-points of research. ▪ Policy-makers may give low credibility to results from the qualitative approach. ▪ Analysis and interpretation of data may be more difficult. ▪ Data collection can be tedious and requires more resources.

Adapted from (Easterby-Smith *et al.*, 2002)

6.3.1 The Ontological Position

Ontology is related to the fundamental belief about the nature of the research: What is the view about the research nature, what should be looked at and what is irrelevant (Jankowicz, 2005). Epistemology, meanwhile, refers to what constitutes acceptable knowledge in the field of the study. Accordingly, many researchers will have different views of what is considered important in the study (Jankowicz, 2005). Axiology, in the meantime, refers to the researcher’s view of the role of values in the research (Saunders *et al.*, 2012), now that all research papers depend on people’s beliefs about what constitutes an appropriate form of investigation, and which one should be selected to make the sense of experience (Jankowicz, 2005).

The research ontology answers the question of how the researcher views the nature of reality as it is concerned with whether the social world is considered as something

external to the research, or as something that is attached to the researcher's beliefs (Bryman and Bell, 2007). There are two opposite perspectives within ontology. The first is objectivism or realism, in which researchers view the social world as objective and existing independently of humans. Objectivism is an ontological position that implies that researchers are external facts that are beyond research (Bryman and Bell, 2007). The objectivist ontological position is mainly adopted by positivistic researchers.

The other perspective is subjectivism or constructivism, which asserts that social phenomena and their meanings are accomplished by social actors and exist through human interaction (Bryman and Bell, 2007; Orlikowski and Baroudi, 1991). This means that in order to understand a social phenomenon, it is necessary to explore the understandings and beliefs of the people, who give rise to such phenomena (Silverman, 2000). Goddard (1998) has suggested that meaning is subjective from one person to the other and cannot be considered objectively. Each culture or society has its concepts, words and symbols, which are unique from other contexts. Therefore, they create subjective perceptions in a person's mind (Goddard, 1998). The subjective ontological position is mainly adopted by interpretive researchers (Bryman and Bell, 2007).

After reviewing the literature, the researcher has concluded that a wider understanding of the factors affecting on-line shopping by Egyptian consumers is needed as there is a limited and fragmented literature that empirically tests their

adoption of (B2C) e-commerce and the e-purchase behaviour. Accordingly, the ontological position of this study is the objectivist ontological position, which works well for achieving the research objectives as well the terms of assessing the major factors that affect the intention for Egyptians to adopt Business-to-Consumer (B2C) e-commerce, as well as developing a B2C adoption model while investigating the moderating effects of some variables.

6.3.2 The Epistemological Position

It is important to identify the epistemological position of the study. “Epistemology focuses on the relationship between the researcher and what is being researched” (Saunders *et al.*, 2007:108). Epistemological considerations are concerned with the questions: “How can the researcher know the world, and what is considered acceptable knowledge from the view of the researcher?” (Walliman, 2006: 15). It is agreed that the three most influential epistemological paradigms are: positivism, interpretivism and critical Realism. The different paradigmatic approaches represent various views about the way in which knowledge is developed and the appropriate function of researchers (Hesse-Biber and Leavy, 2006; Saunders *et al.*, 2012). The positivistic approach is usually associated with quantitative research, while the phenomenologist or interpretive approach is associated with qualitative research (Bryman and Bell, 2007; Collis and Hussey, 2003; Flick, 2002; Remenyi *et al.*, 1998). The positivist approach is the basis for quantitative research, and begins with the assumption that there is no real difference between studying human behaviour and studying other sciences (Collis and Hussey, 2003). A researcher, who looks for

concrete facts when determining the causes of social phenomena, and who believes that theories need to be empirically tested, is operating within a positivist paradigm (Collins and Hussey, 2003).

The methodology of research adopting the positivist paradigm is based on the deductive logic of testing hypotheses. Large sample surveys are the main way of collecting data (Easterby-Smith *et al.*, 2002). According to Smith (2002), a positivist research is usually associated with quantitative data. It applies precise objective measures, which are frequently analysed through the use of statistical tests. A positivist approach, on the other hand, tends to produce quantitative data and use a large number of samples to generalise to a population (Easterby-Smith *et al.*, 2002). Positivism is also considered to be a fast and economical approach. Therefore, the data to be collected is mainly of a quantitative nature because it helps the researcher construct a sample and claim that its characteristics will be representative to the population from which it is drawn.

On the other hand, the interpretive approach, also known as the qualitative paradigm, aims to understand human behaviour from the perspective of the research participants (Collis and Hussey, 2003). This means that the research takes into consideration the meanings which people attach to particular behaviours.

The interpretive approach, meanwhile, minimises the distance between the researcher and what is being researched and works on the assumption that it is impossible to eliminate researcher's bias, which makes it important to identify it (Collis and Hussey, 2003; Creswell, 2003; Hesse-Biber and Leavy, 2006).

Accordingly, the epistemological stand of this study is positivism as the researcher aims to empirically test the research hypotheses after deciding the major constructs that need to be tested from the literature review to fill the research gap while using large sample surveys for collecting the data. According to Saunders *et al.* (2012), research is classified as positivist if there is a proof of formal propositions, quantifiable measures of variables, hypothesis testing and the reaching of conclusions about a phenomenon from the population sample. In light of the research objectives and questions and the above discussion, this study will adopt the positivistic philosophy, which involves the analysis of large quantities of data to investigate a causal relationship between independent and dependent variables and test hypotheses (Deshpande, 1983; Hirschman, 1986; Tsoukas, 1989).

6.4 Research Approach

Having decided on the study's ontological and epistemological positions, it is important to determine which approach will be used to collect and analyse the data. In this regard, it is important to differentiate between the quantitative and the qualitative approaches. Table (6.2) reflects the major differences between the two approaches. A qualitative research concentrates on words and observations to express reality, while attempting to describe people in natural situations. By contrast, the quantitative approach places considerable trust in numbers to represent opinions or concepts. It is a strong tool for measuring variables such as quantitative assumptions. The qualitative approach is subjective in nature because it involves examining perceptions

to gain an understanding of social and human activities (Berg, 2004; Corbin and Strauss, 2008; Denzin and Lincoln, 2005; Hiller, 2010; Jackson, 2012).

A quantitative research, likewise, is based broadly on the concept of positivism (Palys, 1997). It assumes that human behaviour can be explained by social facts. Moreover, it is directed towards testing hypotheses and theories that can be further generalised. It also involves collecting and analysing numerical data and applying statistical tests (Antonius, 2013). Further, a quantitative research design is concerned with determining the truth value of propositions and allows flexibility in the treatment of data in terms of comparative analysis, statistical analysis and repeatability of data collection to verify reliability (Wood and Welch, 2010).

Table (6.2): Major Differences between Quantitative and Qualitative Research strategies		
	QUANTITATIVE	QUALITATIVE
Principal orientation to the role theory in research	Deductive; testing of theory	Inductive; generation of theory
Epistemological orientation	Natural science model, positivism	Interpretivism
Ontological orientation	Objectivism	Constructionism

Adapted from (Easterby-Smith *et al.*, 2002)

Furthermore, in the inductive approach, the data is collected as a result of data analysis, and a theory is developed accordingly (Saunders *et al.*, 2012). In the inductive approach, one observes certain phenomena and on the basis of the

observations, certain conclusions are reached ultimately. As Table (6.3) shows, the inductive research is associated with qualitative research methods to establish different views of the phenomena under investigation (Easterby-Smith *et al.*, 2008). On the other hand, in the deductive approach the researcher develops a theory and hypotheses that are related to the research and designs a research strategy to justify the selected theory and hypotheses (Saunders *et al.*, 2012). The deductive approach is linked to positivism.

Table (6.3): Differences between Deductive and Inductive Approaches	
Deductive emphasizes	Inductive emphasises
Scientific principles	Gaining an understanding of the meaning humans attach to events
Moving from theory to data	A close understanding of the research context
The need to explain causal relationships between variables	A more flexible structure of permit changes of research emphasis as the research progresses
The collection of quantitative data	The collection of qualitative data
The application of controls to ensure validity of data	Less concern with the need to generalise
Researcher is independent of what is being observed	A realisation that the researcher is part of the research process
A highly structured approach	--
The necessity to select samples of sufficient size to generalise conclusions	--
The operationalisation of concepts to ensure clarity of definition.	--

Adopted from (Saunders *et al.*, 2012)

In line with the research philosophy of this study, the rationale behind adopting a quantitative research approach is that the researcher aims - through the positivism philosophy and deductive philosophical approach - to analyse large quantities of data

that are related to Egyptian consumers' adoption of B2C, investigate the relationship between dependent and independent variables, and test the validity of hypotheses. The rationale is to test the relationship between research variables and collect numerical data that are related to the research sample (Welch and Wood, 2010). In an attempt to provide a richer approach to data collection, analysis and interpretation, this study will integrate the quantitative research approach to test proposed hypotheses and examine the adopted theoretical perspective in terms of (UTAUT2).

6.5 Research Strategy: Survey

This section explores the different types of research strategies and the essential factors that influence their choice, so that the researcher can answer the research questions and meet its objectives. A strategy provides the overall direction of the research process (Saunders *et al.*, 2012). A research strategy is defined as a plan of how a researcher will be answering the research question. It is the methodological link between the research philosophy and the subsequent choice of methods to collect and analyse data (Denzin and Lincoln, 2005). Major research strategies include experiment, survey, archival analysis, histories and case studies within the framework of social sciences. Each one can be used for solving these three purposes: explanatory, descriptive and exploratory (Saunders *et al.*, 2012). The choice of an appropriate strategy should be based on the type research question.

Experiments are generally used in natural science studies and used in the business and management domain (Malhotra, 2010) because they are simple and limited in terms of

external validity, which gives a limited scope of generalisations (Birks *et al.*, 2003). Therefore, it is inappropriate to the scope of this study.

The case study, another form of research strategy, is used to contribute to the knowledge of individual, group, organisational, social or political phenomenon (Stake, 1995; Yin, 2003). According to Corbin (2008), a case study has the potential to generate answers to the questions 'why', 'what' and 'how'. It has been described as an extensive examination of a single instance of a phenomenon of interest (Maxwell, 2013).

There are some concerns about the use of case study:

[1] It may allow a biased view to affect the direction of findings and conclusion;

[2] It can provide little basis for scientific generalisations; and

[3] It takes too long and the results are lengthy including the difficulty of gaining access to a suitable organisation as well as gaining a rapid understanding of events, which make the process time consuming (Saunders, 2012). Accordingly, it is excluded as a potential research strategy for this study.

The third research strategy is survey. According to Saunders *et al.* (2012), a survey is frequently related to quantitative approach. In addition, it is commonly used in business and management research to answer the "who", "what", "where", "how much" and "how many" questions. Surveys are associated with the positivism approach (Easterby-Smith *et al.*, 2002). Saunders *et al.*, (2012) states that data

collected by a survey strategy can be used to suggest possible relationships and give the researcher a more control over the research. Surveys often involve the administration of a questionnaire, which provides a rich opportunity to collect a large quantity of data in an economic way (Saunders *et al.*, 2012; Schindler and Cooper, 2008; Smith *et al.*, 2012).

There are two types of surveys: (1) Descriptive Survey; and (2) the Analytical Survey. The Descriptive Survey is associated with identifying and counting the frequency of a specific population. It is usually used in business research in the form of attitude surveys (Cooper and Schindler, 2013). The Analytical Surveys, on the other hand, tend to emphasise the identification of the independent, dependent, and mediating variables while specifying the relationships among them (Smith, 2012). Accordingly, the survey type that will be used in this research is the Analytical Survey because it aims to investigate the relationship between independent and dependent variables.

The survey method allows the studying of a large population quickly and in a cost-effective format (Shindler and Cooper, 2008). It has been used successfully in business research to test hypotheses, develop measurement scales, and build theoretical models (Smith *et al.*, 2012; Shindler and Cooper, 2008). Additionally, it has been applied in many studies that used the UTAUT2 as its theoretical framework results (Venkatesh, *et al.*, 2012).

In line with the previous definition, the survey research strategy will be used to collect data and suggest possible reasons regarding the relationship between the dependent variable, which is the intention to adopt B2C e-commerce and the research independent variables. Consequently, it can be argued that the choice of the research strategy has depended on research questions and hypotheses, the available budget to the researcher, and researcher's knowledge and skills (Saunders *et al.*, 2012).

6.6 Research Technique

In line with the thesis research positivistic approach, and selected strategy, the research will apply the questionnaire technique, which is a common feature of survey strategy (Birks and Malhotra, 2003, Saunders *et al.*, 2012; Smith, 2012). A questionnaire is "a data collection technique in which each person is asked to respond to the same set of questions in a predetermined order" (Saunders *et al.*, 2012: 679). There are many types of questionnaires depending on how they are delivered and collected, and the amount of contacts the researcher has with respondents (Smith, 2012). The types of questionnaires integrate: (1) self-completed; and (2) interviewer completed. The self-completed questionnaires are usually completed by the respondents. They are sent electronically via the Internet. They are known as 'Intranet-mediated, web-based questionnaire', or 'postal or mail questionnaires, which are posted to respondents. They are sent to the respondents through the mail, or delivered to them by hand, and collected afterwards (Saunders *et al.*, 2012). On the other hand, the interviewer-completed questionnaires are recorded by the interviewer

based on each respondent's answer. They are conducted either over the phone, or through meeting the respondent and ask questions face- to- face (Smith, 2012).

According to Saunders *et al.* (2012), the choice of the questionnaire depends on research questions and other inter-related factors such as:

[1] The characteristics of respondents;

[2] The importance of reaching a particular person as respondent;

[3] The size of the sample; and

[4] The number of questions the researcher needs to ask to collate the data. In line with Saunders *et al.* (2012) categorisation, this study will integrate self-completed or self-administered questionnaire due to its relatively large sample, and the necessity of finding respondents, who are qualified enough to be part of the research sample according to their characteristics. The questionnaire surveys are among the most popular data collection methods in business studies because they enable the researcher to collect a large amount of data in a cost effective way (Saunders *et al.*, 2012). Accordingly, this study will adopt self-completed questionnaires to benefit from its major advantage, which is collecting a large amount of data in an economical way and within a short period of time.

6.7 Questionnaire Design

A questionnaire is "a formalised set of questions for obtaining information from respondents" (Malhotra, 2010: 335). There are three principle areas, which should be considered when designing a questionnaire. The first one relates to the wording of the questions. The second is related to planning how the variables will be categorised, scaled and coded. The third area is the general appearance of the questionnaire (Saunders *et al.*, 2012).

Because a questionnaire aims at generalising conclusions, the construction of a questionnaire is very significant and crucial (Saunders *et al.*, 2012). Any questionnaire has to achieve three specific objectives:

[1] Translating the information needed into a set of specific questions that the respondents will answer;

[2] Motivating the respondents to become involved and encouraged to complete it;
and

[3] Minimising response error, which occurs when the respondents give inaccurate answers (Cooper and Schindler, 2013). There are some guidelines that have been suggested for the construction of questionnaires such as:

[1] The language of the questions must be simple;

[2] Questions should be fully and easily understood in the same way by every respondent;

[3] Each question should deal with only one dimension or aspect;

[4] Questions should be specific; and

[5] The order in which the questions are placed must be specific (Saunders *et al.*, 2012).

Malhotra (2013) argues that there are no specific principles that guarantee an ideal questionnaire and its design is a skill that is gained through experience. The questionnaire in the present study has integrated structured questions that specified a set of response alternatives, and has excluded dichotomous questions, which are the questions that have only two response alternatives except for the two filtering questions that intend to qualify respondents, and question fifteen that inquires about the respondent's gender (Saunders *et al.*, 2012). (*Please refer to Appendix No. II for a version of the questionnaire*).

6.7.1 Scale Used in the Survey

Regarding the scaling techniques adopted in the present study, the major scale adopted at the questionnaire is the Likert Scale, which was applied because it was the widely used one in marketing research as it meets Likert's rules for construction and testing (Cooper, 2008), and it is the most common scale in attitude research (Malhotra, 2010). A high score for items [4 or 5] indicates agreement with the statement and a low score [1 or 2] indicates a disagreement with it (Saunders *et al.*, 2012). The Likert Scale is considered the most popular scaling procedure because it is

simple for the respondents to understand and complete. It is also simple for the researcher to code and analyse (Malhotra, 2010).

Respondents may be offered a choice of five to seven or even nine pre-coded responses, ranging from extreme agreement to extreme disagreement, with the neutral point being 'neither agree nor disagree' (Rattray and Jones, 2007). There is no optimum number of scale points (Brace, 2004). However, a five-point scale gives sufficient discrimination for most purposes. It is easily understood by respondents. This increases the response rate and reduces the non-response error, leading to reliable results (Aaker, Kumar, 1998; Brace, 2004). Further, the decision about the number of points on the scale has to be made with consideration of the distinction between the points and the ability of respondents to discriminate between these points (Brace, 2004). This study has employed a five-point Likert Scale. It is sufficient for this study because the objective of the survey is to identify the major factors affecting the adoption of B2C by Egyptians. Thus, the discrimination was not needed and therefore there was no need for more than the five-point scale.

Furthermore, a five-point scale is also sufficient for self-completion of the questionnaire because it reduced the time that respondents would take to understand and complete the questionnaire.

In the current study, respondents select one out of the five statements ranging from: [1]. Strongly Agree (5 point); [2]. Agree (4 points); [3] Neutral (3 points); [4] Disagree (2 points); [5] Strongly Disagree (1 point). The scale had a neutral point

labelled as 'neutral' to give respondents the freedom of not being completely agree or disagree.

Regarding the research variables, which will be statistically analysed, this study has integrated the nominal, ordinal and interval variables. The nominal variables indicate that each value is a distinct category and serves as a label. However, the presented categories such as gender, nationality, religion, race, type of business and others cannot be ranked (Quinlan, 2011). The ordinal is the inter-mediate level of measurement, whereas the variables are ranked according to a criteria such as education, social class and others. For example, although the level of education or social classes are different, it is not possible to mathematically measure these distances (Argyrous, 2011). The interval variable refers to a presented question with a meaningful and measurable distance between values such as age and income. But, the major difference between the interval and ordinal is the distance between values that can be measured or quantified (Antonius, 2013). The differences between the three types of variables are shown in Table (6.4). At the presented questionnaire, the three variables were integrated to measure both the moderating and the independent variables. *(Please refer to Appendix No. II for a version of the questionnaire).*

Table (6.4): Primary scales of measurement				
Scale	Basic Characteristic	Marketing Example	Descriptive	Inferential
Nominal	Numbers identify and classify objects	Brand numbers, store types, sex classification	Percentages, mode	Chi-square, binominal
Ordinal	Numbers indicate the relative positions of objects but not the magnitude of differences between them	Preference ranking, market positions, social class	Percentile, median	Rank-order correlation, Friedman ANOVA
Interval	Differences between objects can be compared; zero point of arbitrary	Attitude, opinion, index numbers	Range, mean, standard deviation	Product-moment correlation, T-tests, ANOVA, regression, factor analysis
Ratio	Zero point is fixed; ratio of scale values can be computed	Age, income, costs, sales, market shares	Geometric mean, harmonic mean	Co-efficient of variables

Adopted from (Malhotra, 2010)

Furthermore, the researcher has ensured that the questionnaire design adequately serves the research objectives through avoiding the below mentioned critical issues presented in Table (6.5) (Quinlan, 2011)

Table (6.5): Issues in designing questions and items for questionnaires and scales	
Leading questions	The possibility of leading participants to a particular response through the way in which the question is framed.
Ambiguous questions	Questions with unclear meaning or questions that can have more than one possible meaning.

**Table (6.5): Issues in designing questions and items
for questionnaires and scales (Continued)**

Complicated questions	Questions should be simple and clear, concise and precise.
Asking two questions or more in one question	Developing a question that asks about two factors at once.
Potentially embarrassing questions and/or questions with no right to ask	Asking embarrassing questions such as how much money do you earn, or what is the respondent's sexual orientation. Those questions should be aggregated to possible answers and then ask the respondent to indicate which range they belong to, rather than respond with a specific figure.
Asking unnecessary questions	Ensure that your questionnaire is succinct and relevant and absolutely to the point. Gathering unnecessary data is not important.
Loaded words	Loaded words are words with a particularly strong emotional impact. For example fascist, disease, mad, class, poor are all examples of loaded words.
Unclear or vague concepts	Concepts that are not clearly defined are problematic. 'Fat' is an example as by what standard can a person be described as being fat? Another such concept is 'old' again what is old? And by what definition standard is something or someone described as old?
Insulting words	Some words and phrases are simply insulting or even degrading, and they should not be used. It is important to note that a word or phrase that is perfectly acceptable at one culture may be quite unacceptable in another.
Humour	As a rule, it is best to avoid humour completely (unless the topic of your research is humour). Perceptions of what is humour and what is not varies completely from person to person and from culture to culture, so it is best to avoid it completely.

Table (6.5): Issues in designing questions and items for questionnaires and scales (Continued)	
Slang and colloquialisms	The standard for language in a written account of research project is formal, so simple formal language should be used throughout, and slang and colloquial words and expressions should be avoided.
Ethnocentrism	Ensuring that the used questionnaire or scale is not ethnocentric. Ensure that the words, concepts and language used in your questionnaire and scale are not ethnocentric. Ethnocentric means organizing and designing data collection for your research from the researcher's own ethnic or cultural perspective.
Sexist, racist, ageist or disablist language	Classist, sexist, racist, ageist, disablist words, concepts or language should be avoided in the questionnaire or scale. The researcher should ensure that the language used is not discriminatory towards or displaying prejudice against any entity or persons.
Abbreviations and Jargon	Abbreviations and jargons should not be used. Researchers should make sure to use words, concepts and phrases that will be familiar to respondents.
Respondent bias	There are three types of respondent bias: acquiescent bias, social desirability bias and prestige bias.
Talking down to respondents	Avoiding treating respondents disrespectfully or by patronizing them.
Double negatives	Double negatives in a question can be confusing. Avoid using the word 'not' in a question.
Ask simple, easy-to-answer questions	Asking questions that the respondent will be easily able to answer. Avoid asking too much from respondents. Keep to a minimum the effort they will have to make in order to respond to the questionnaire.
Give clear instructions	Ensuring that the researcher gives clear instructions to respondents, and making sure that respondents have all instructions, direction and guidance they need in order to be able to properly and fully respond.

Adopted from (Quinlan, 2011: 339)

It is important to stress that the present questionnaire has avoided the above highlighted points presented in Table (6.5), which may negatively affect its design through the careful phrasing of questionnaire questions. The final version of the questionnaire integrated sixteen questions in addition to two filtering questions presented at the beginning of the questionnaire, which is divided into three main sections: Section One has integrated the two filtering questions to qualify the research respondents. Each respondent must have bought a product or service on-line in Egypt and must be an Egyptian to be qualified to complete the questionnaire. In addition to a general question, which identifies the on-line vendors. Section Two has concerned the dependent variable and the ten independent variable. Thus, Question Two was about the dependent variable, and Questions three till twelve were designed to collect information about the ten independent variables of this study. Section Three covered the demographic information and respondents' profiles in terms age, gender, educational level and experience.

Further, Table (6.6) illustrates the questionnaire constructs and its items. The layout and the appearance of the questionnaire were designed to allow respondents to complete it easily. To achieve a high response rate and make the questionnaire clear to the respondents, a cover letter has been attached to explain the purpose of the research. It states the research topic, the university's name, the supervisor's and researcher's contacts for queries, a commitment of confidentiality for respondents, and a statement of thanks (Saunders *et al.*, 2012).

Table (6.6): Questionnaire Constructs

Construct	Item Code	Measurement	Measurement adopted from
Intention to adopt B2C	IA1: IA2: IA4: IA4:	I am planning to increase my on-line buying. I suggest other people to buy on-line. I will continue to buy on-line rather than offline. I will regularly buy on-line in the near future.	(Venkatesh, 2012; San Martín and Herrero, 2012; Andrews, 2013)
Social Influence	SI1: SI2: SI3:	People who influence my behaviour (e.g. family and friends) think that I should buy on-line. People who are important to me (e.g. family and friends) think that I should buy on-line. People whose opinions that I value (e.g. family and friends) prefer that I buy on-line.	(Venkatesh, 2012; Rodríguez, 2014; Martin, 2014)
Effort Expectancy	EE1: EE2: EE3:	Learning to operate on-line buying is easy for me. It would be easy for me to become skillful at using on-line buying. I find on-line buying easy to use.	(Venkatesh, 2012; Rodríguez, 2014; Weerakkody <i>et al.</i> , 2013; Martin, 2014)
Performance Expectancy	PE1: PE2: PE3: PE4:	I find on-line buying useful in my daily life. On-line buying will increase my chances to buy all the things I need. I can save time by buying on-line. On-line buying helps to make purchasing decisions in the shortest time.	(Venkatesh, 2012; Rodríguez, 2014; Weerakkody <i>et al.</i> , 2013; Martin, 2014)
On-line Trust	OT1: OT2: OT3:	The Egyptian on-line stores provide correct information about the items I want to buy. The Egyptian on-line stores provide enough information about the item I want to buy. The Egyptian on-line stores' are trustworthy.	(Ming <i>et al.</i> , 2013)

Table (6.6) Continued: Questionnaire Constructs (Continued)

Construct	Item Code	Measurement	Measurement adopted from
On-line Security	OS1:	I am concerned about my security when I buy on-line.	(Chiu <i>et al.</i> , 2009; Carter and Belanger, 2005)
	OS2:	On-line stores in Egypt will protect my e-payment and will not lead to transaction fraud.	
	OS3:		
	OS4:	The risk associated with my on-line payment is low. I feel safe to share my credit card while buying on-line.	
Hedonic Motivation	HM1:	On-line buying is fun.	(Venkatesh, 2012)
	HM2:	Buying on-line is enjoyable.	
	HM3:	Buying on-line is entertaining.	
On-line Interactivity	OI1:	I can search easily through the on-line store.	(Wu, 2005)
	OI2:	At the site of the on-line store, I can choose the way in which information is presented to me.	
	OI3:	I can change images easily at the on-line store to fit my choices.	(Yang <i>et al.</i> , 2006; Hoffman <i>et al.</i> , 2000; Hackman <i>et al.</i> , 2006; Florenthal, 2010)
	OI4:	The site of the on-line store responds to my questions efficiently.	

Table (6.6) continued: Questionnaire Constructs

Construct	Item Code	Measurement	Measurement adopted from
On-line Satisfaction	OSY1:	The Egyptian on-line stores offer good quality service.	(Hsu et al., 2006)
	OSY2:	The Egyptian on-line stores allow exchange or money refund for wrong deliveries.	
	OSY3:	The Egyptian on-line stores offer good after sale services.	(Boyer and Hult, 2006; Kim 2004 Srinivasan <i>et al.</i> , 2002; Hackman <i>et al.</i> , 2006)
	OSY4:	The Egyptian on-line stores deliver my purchases in the expected time.	(Anderson <i>et al.</i> , 2003)
Facilitating Conditions	FC1:	I have the resources necessary to buy on-line.	(Venkatesh <i>et al.</i> , 2012)
	FC2:	I have the knowledge necessary to buy on-line.	
	FC3:	I can get help from others when I have difficulties while buying on-line.	
Habit	HT1:	The use of on-line buying has become a habit for me.	(Venkatesh <i>et al.</i> , 2012)
	HT2:	I am addicted to using on-line buying.	
	HT3:	I must buy on-line.	
Moderating Variables		<i>Age, gender, experience</i>	(Pappas <i>et al.</i> , 2012)

6.8 Pilot Study

Before distributing the questionnaire among the respondents and starting the data collecting process, the questionnaire should be pilot tested to refine it and avoid any problems that may occur for the respondents in answering the questions. A pilot pretesting refers to testing the questionnaire on a small sample of respondents so that potential problems in answering the questions and of data recording will be eliminated (Corbin, 2008). Additionally, the main objective behind conducting a pilot study is to have the chance to obtain assessment of the questions' validity and reliability of the data. In addition, the preliminary analysis for the pilot test will examine whether the collated data will enable the research's questions be answered (Bell, 2010).

The major variations of the research population in terms of gender and age group will be included along with the level of experience in purchasing on-line. The minimum number for a pilot study is ten respondents, and for very large surveys the number of persons ranges between 100 and 200. (Fink, 2009; Dillman, 2009). This study will include 50 respondents for the pilot study.

Since this study integrates a self-administered questionnaire, the pilot testing will integrate the use of a short questionnaire to assess responses' feedback through asking the following questions:

[1] How long did the questionnaire take to be completed?;

[2] Were instructions clear?;

[3] Was there any question unclear or ambiguous?;

[4] Were there any questions the respondent felt uneasy to answer?;

[5] Were there any major topics or questions missing?;

[6] Was the layout clear and attractive?; and

[7] Respondents should be asked if they had any further comments. (Saunders *et al.*, 2012; Cooper and Schindler, 2013).

Accordingly, in the present study a total of 50 respondents will participate in the pretesting, which covers the age categories of the research: 21–29; 30–39; 40–49; 50 and above. A questionnaire was given to each respondent. The majority of respondents reported that the questionnaire was easy to understand and required only 20 or 25 minutes to be completed. Additionally, the majority of respondents validated the content of the questionnaire and clarity of instructions, although some minor changes to the final design were made. Based on the feedback received, a final questionnaire was developed. For example, the phrase on-line buying was integrated instead of “business-to-consumer”. In the meantime, the word in Egypt was added to some questions.

The objective of the pilot study was to confirm the reliability of the variables. According to Saunders *et al.*, (2007), reliability refers to the extent to which the questionnaire will yield consistent findings. In other words, it indicates the extent to

which a measure is unbiased and ensures consistent measurement across time and across the items in the questionnaire. Cronbach's Co-efficient Alpha is considered the most popular test of inter-item consistency reliability, which is used for multi-point scaled items. It measures directly the extent to which items cohere with their scale (Argyrous, 2011). The value of Alpha varies from 0 (not correlated) to 1 (totally correlated). The higher the co-efficient, the better the measure (Antonius, 2013; Argyrous, 2011; Burns, 2012; Mazzochi, 2011). The commonly accepted lower limit for Alpha is 0.70 (Hardy and Bryman, 2011). Sachdeva (2009) stresses that a value greater than 0.70 is regarded as a satisfactory level of internal consistency. For this study, therefore, the acceptable measure is 0.70. The findings obtained from the pilot study verified an acceptable level of reliability as it showed 0.891, which is higher than 0.70. Table (6.7) illustrates the following:

Table (6.7): Pilot study Reliability Test			
Scale name	No. of Items	Cronbach's Alpha	Alpha (All Scales)
Intention to adopt B2C	4	.884	.891
Social Influence	3	.883	
Effort Expectancy	3	.883	
Performance Expectancy	4	.884	
On-line Trust	3	.884	
On-line Security	4	.885	
Hedonic Motivation	3	.901	
Perceived On-line interactivity	4	.905	
On-line Satisfaction	4	.883	
Facilitating Conditions	3	.884	
Habit	3	.886	

6.9 Ensuring Internal and External Validity

In the quantitative research, the standards that have been frequently used for a good and convincing research are: validity and reliability. If the research is valid, it clearly reflects the world being described (Pedhazur and Schmelkin, 1991). In relation to the research strategy, both internal and external validity have to be ensured. In relation to the research technique, the internal validity to questionnaire refers to its ability to measure what it intends to measure. There are many types associated with internal validity:

- [1] **Content Validity**, which refers to the extent to which the question provides adequate coverage of the investigative questions;
- [2] **Criterion-related Validity**, which is the ability of the questions to make accurate predictions; and
- [3] **Construct Validity**, which refers to the extent to which the question measures the presence of the constructs that the researcher intended to measure with the intended interpretation of the variables (Cooper and Schindler, 2013).

To increase construct validity of the questionnaire, multiple sources of evidence have been integrated. The draft of the questionnaire will be reviewed by an ad hoc committee.

Another type of validity is the external one, which refers to what extent the findings of the case study can be generalised to the population (Saunders *et al.*, 2012).

6.10 Ensuring Reliability

If work is reliable, then two researchers, studying the same phenomenon, will come up with compatible outcomes (Pedhazur and Schmelkin, 1991). Thus, reliability refers to consistency and is concerned with whether or not the research will produce consistent findings at different times and under different conditions (Saunders *et al.*, 2012).

There are three approaches to assess reliability (Saunders *et al.*, 2012):

[1] ‘**Test Re-test**’, which is obtained by correlating data collected with those from the same questionnaire collected under a near equivalent condition; 'internal consistency'; and 'alternative form';

[2] ‘**Internal Consistency**’, which involves correlating the responses to questions in the questionnaire with one another as it measure the consistency of responses to a set of questions (scale items) that are combined as a scale; and

[3] ‘**Alternative Form**’, which compares responses to alternative forms of the same question or groups of questions (Saunders *et al.*, 2012).

In this study, the researcher will use the ‘Internal Consistency’ as an approach to assess reliability because the other two approaches integrate some difficulties: The ‘Test Re-test’ approach may be problematic because it is often difficult to persuade respondents to answer the same questionnaire twice. As for the ‘Alternative Form’ approach, it is always difficult to ensure that the alternative questions are substantially equivalent (Mitchell, 1996; Field, 2009).

6.11 Research Population and Sampling

The research objectives and questions often determine the sampling frame as to whom or what to sample, leading to two different sampling techniques, i.e., probability and non-probability sampling (Burns, 2013). Regarding the recruitment of participants, the researcher used the Sampling Method, which is the process of selecting a sufficient number of elements from the population to generalise the prosperities, or characteristics of the sample subjects (Daniel, 2012). The population refers to the complete set of cases or group members that are similar in one or more way from which the sample is selected (Maxwell, 2013).

A good sample has two properties: representativeness and adequacy (Singh, 1986). In general, random samples provide a good approximation of the population and offer better assurance against sampling bias. Thus, they are more representative than non-probability samples and allow generalisation (Lazerwitz, 1968). Accordingly, this research will adopt a simple random sampling to allow generalisation to provide a good approximation of the population and offer better assurance against sampling bias.

6.11.1 Sample Size

The overall population of the thesis' scope is Egyptians, who have been involved in any B2C e-commerce activity, and who are part of the overall population of the Egyptian Internet users. The overall population of Egyptian Internet users is 30 million (ICT Report, 2014), of which 600,000 persons are involved in B2C e-

commerce (The Future of the Internet Economy in Egypt, 2014). Deciding on a suitable sample size is a very significant step because it has been concluded that the larger the sample size, the lower the likely error in generalising to the population (Mazzocchi, 2011).

The sample size influences the accuracy of estimation. In general, a large sample size can help minimise sampling errors, and improve generalisability of research findings. It also affects statistic power through influencing standard errors (Pedhazur and Schmelkin, 1991). The adequacy of sample size is determined by factors such as the way the respondents are selected (random or convenient), the distribution of the population parameters (the variables of interest), the purpose of the research project (exploratory or applied), and data analytic procedures (Randall and Gibson, 1990). It is essential for researchers to find the optimal point between the costs and adequacy of a sample size.

The sample size of this study will be calculated by estimating the response rate and the actual sample size required. “Since the research normally works for 95 per cent of certainty with 5 per cent margin of error”; accordingly, “the minimum sample size required for a population between 500, 000 and 1,000,000 is 384” (Saunders *et al.*, 2012: 258).

Since the overall number of population is 600, 000 [since only 2% of Internet users, who are 30 million buy products and services on-line] (The Future of the Internet

Economy in Egypt, 2014); accordingly, the minimum sample size required will be calculated using the below adopted formula (Saunders *et al.*, 2012: 266).

$$\text{Actual sample size} = \frac{(\text{Minimum sample size}) * 100}{\text{estimated response rate expressed in \%}}$$

(Saunders *et al.*, 2012: 267).

$$\text{Actual sample size} = \frac{384 * 100}{95} = 404 \text{ respondents}$$

The minimum sampling size is calculated by estimating response rate and the actual sample size required. Accordingly, the minimum sampling size is 384 as per calculated above. Although the actual sample size for this study is 404 respondents, it was highly recommended to have the research sample size above the actual sample size as to ensure minimum sampling error (Argyrous, 2011; Burns, 2008; Malhotra, 2010; Cooper and Schindler, 2013). Accordingly, the research sample in this study will be a total of 600 participants (a total of 196 additional participants have been added as to ensure high response rate).

The major factors for qualifying the research sample are to be Egyptian, who have purchased on-line at least once, and being educated. Both males and females will be included. Furthermore, according to the Cairo-based Central Agency for Public Mobilisation and Statistics (CAPMAS), the total number of females in Egypt is 38,

011,400, and the total number of males is 39, 763,847 (CAPMAS, 2013). In this regard, the researcher will attempt to reach a sample size at the primary research that is proportionately given to each gender according to the total number of their presence among Egyptian university students, which is approximately equal to each other.

6.11.2 Sampling Technique

The sampling techniques can be divided into two types: (1) Probability or representative sampling, which entails an equal chance of each case to be selected from the population; (2) non-probability sampling, which means that the probability of each case being selected from the total population is unknown and it is impossible to answer research questions or to address objectives that require statistical inference (Daniel, 2012).

The choice between probability and non-probability samples should be based on considerations such as the nature and variability in populations. Since the population in this study involves different categories, which are from 21 till 59 years old which are the age segments that have purchasing power (Journal of the American Chamber of Commerce in Egypt, 2012: 26). Therefore, a probability sampling will be more suitable to be used (Birks and Malhotra, 2003). There are four main major techniques that can be used to select a probability sampling (Malhotra and Birks, 2013; Saundres *et al.*, 2012; Cooper and Schindler, 2013):

[1] Simple Random: Each element has an equal opportunity of being selected, and every case is selected independently of every other case, and the sample is drawn by a random procedure from the sampling frame;

[2] Systematic Sampling: It involves selecting the sample at regular intervals from the sampling frame, then the sample is chosen by selecting a random starting point and then picking every subsequent case systematically from the intervals;

[3] Stratified Random: This kind of sampling method is appropriate when it is expected that responses will vary across strata (Cooper and Schindler, 2013). Stratified sampling can ensure that all the required sub-groups are represented in series of relevant subsets so that the sample chosen is more likely to be representative. Then a random sample is then drawn from each of the subset; and

[4] Cluster: The sampling frame divided into subset groups, then a list of subset groups is chosen at a random, and data are collected from every case within the selected groups (Cooper and Schindler, 2013).

The sampling technique adopted in this study is the ‘Probability Sampling’, where sampling units are selected by chance (Malhotra, 2010). This technique is associated with the survey research strategy, where results can be generalised to the overall population (Cooper and Schindler, 2013). The process of probability sampling can be divided into four stages:

[1] Identifying a suitable sampling frame;

[2] Deciding on a suitable sample size;

[3] Selecting the most appropriate sampling techniques and select the sample; and

[4] Checking if the sample is representative to the population.

The majority of business research such as market surveys does not depend on having sampling frames “because in the majority of cases sampling frames are not accessible” (Saunders *et al.*, 2012: 281); having results that can be generalised is an important factor to meet the research objectives.

The problem of low response rates or non-response error appears when some sample subjects do not respond. Such non-response errors distort the information drawn from the selected sample (Assael and Keon, 1982), thus decreasing reliability and validity of a study, and making it difficult for generalisation. The researcher will minimise the non-response rate through paying careful attention to the method used to collect the data.

6.12 Data Collection

The questionnaire was distributed among the respondents face-to-face through a self-administered format in private universities and public places, where the segment of the targeted sample representing the upper and middle class Egyptians is accessible. Fieldwork locations covered the American University in Cairo (AUC), the Modern Sciences and Arts University (MSA), the Misr International University (MIU), al-Jazzera Club, the Shooting Club, and the Mall of Arabia in Egypt. The researcher

acquired the authorities' approval to distribute the questionnaire then started to approach the research sample. Because single cross-sectional design is adopted as each research sample was addressed only once to fill out the questionnaire (Wilson, 2010). After selecting the research samples, their consent has to be obtained. Once each participant approves to be part of the study, the researcher will brief him/her about the study and assure them that all collected data will be kept anonymous and highly confidential.

There was some difficulties reaching the research sample during the process of data collection as Egypt was witnessing social and political unrest; for example, random attacks and bombing against police by terrorists were taking place, an obvious lack of petroleum that caused many traffic jams and short term power outage of electricity. The previous three problems were the major obstacles during the data collection process as all have hindered reaching the research sample according to the schedules appointments.

Random bombing and long traffic jams due to shortage of petroleum inevitably hindered the researcher from reaching his sample on time, or caused the research sample to be absent during the scheduled days. The researcher managed to overcome those obstacles by staying longer hours during stable days.

Furthermore, content validity was ensured and thus, self-administered format will be adopted. As stated earlier, the content validity refers to the extent to which the question provides adequate coverage of the investigative questions. The construct

validity refers to the extent to which the question measures the presence of the constructs that the researcher has intended to measure with the intended interpretation of the variables (Cooper and Schindler, 2013).

6.13 Statistical Analysis

Generally, statistics are used in quantitative data analysis for two purposes: descriptive through using descriptive analysis; and prediction, using inferential statistics (Quinlan, 2011). In the researcher's attempt to decide whether the statistical analysis adopted will be descriptive or inferential, the differences between them has to be clearly identified. For the Descriptive Statistical Analysis, each variable can be described in a variety of ways such as, frequencies, ranges, means, modes, medians, and standard deviation (Saunders *et al.*, 2012). On the other hand, through the Inferential Statistical Analysis, the researchers can reach conclusions that extend beyond the data. Accordingly, statistical inference uses the data gathered on a sample population to draw conclusions about the population from which the sample has been selected (Quinlan, 2011).

In line with the previous differentiation between the two basic statistical analysis types, the present study will adopt the Inferential Statistical Analysis to allow the researcher to draw conclusions and generalise results to the overall population of on-line purchasers in Egypt. Moreover, the descriptive statistical analysis will also be adopted to describe the collected data in terms of frequencies, means, and standard deviation (Saunders *et al.*, 2012).

Furthermore, the statistical analysis techniques will be used within the inferential type are factor analysis and regression. For the factor analysis, it is used to test whether the number of inter-related variables will be reduced to a smaller subset of measurement variables so that the factor scores could be used for further analysis such as regression (Burns, 2008). Regression is a statistical procedure for analysing the associative relationships between a dependent variable and one or more independent variables (Malhotra, 2010). The regression analysis also determines whether the independent variables explain a significant variation in the dependent variable and how much the variation in the dependent variable can be explained by the independent variables (Kahane, 2008). Accordingly, the multiple regression analysis will be adopted in this study because it explains the significant variation in the intention to adopt (B2C) e-commerce in Egypt as the dependent variable, and how much the variation of the intention of adoption variable can be explained by each of the ten independent variables.

Further, the multiple regression will be used to measure the significant variation in the intention to adopt B2C e-commerce in Egypt as the dependent variable, and how much the variation of the intention to adopt B2C variable can be explained by the ten independent variables.

Moreover, to calculate internal consistency as an approach to ensure reliability, the Cronbach's Alpha Method will be used (Antonius, 2013). It is important to highlight that the above selected statistical techniques are widely used in marketing research

(Cooper and Schindler, 2013; Hair *et al.*, 2013; Quinlan, 2011; Sekaran and Bougie, 2010; Wilson, 2012).

6.14 Statistical Significance

Statistical significance refers to the likelihood of the pattern if there was no difference in the population from which the sample has been drawn (Burns, 2012). Furthermore, a statistical result is said to be statistically significant when the probability of its occurrence is very small usually 0.05 or 0.01 (Antonius, 2013). In research, the statistical significance refers to 'Sig. or P-Value' that is associated to the probability that the result of a particular statistical test that is occurring by chance. Accordingly, if the probability (P-Value) of the test having occurred by chance is very low [$P < 0.05$ or lower], then there is a statistically significance relationship, which means that the hypothesis is accepted because 95% of results are true and that the degree of difference being tested will occur only by 5% as a chance (Argyrous, 2011). Therefore, the Sig or P-Value ≤ 0.05 has been selected as the suitable statistical significance level. This level has been accepted by many social sciences (Saunders *et al.*, 2012; Burns, 2013). Additionally, it has been used by many studies similar to the present study (Pennanen *et al.*, 2007; Swardt and Oberholzer, 2006; Katos and Patel, 2008; Tsarenko and Tojib, 2009).

6.15 Ethical Issues

The researcher has been concerned with maintaining the ethical code in terms of producing an ethical research design, especially during the phase of data collection, data analysis and interpretation; in addition to the dissemination of the research findings. Ethics refers to the standard of behaviour that guides the conduction in relation to the rights of those who become the subject of research (Saunders *et al.*, 2012). Ethical aspects that are related to participants cover protecting the rights of the participants, protecting participants from harm, and ensuring confidentiality (Berg, 2004; Marshall and Rossman, 2006; Patton, 2002).

A social science research is responsible for informing and protecting respondents. The research process involves listing voluntary co-operation. It is a basic principle that participants are informed about the purpose of the study, a part which was reflected on the introductory part of the questionnaire that informed the respondent of the purpose of the study, and the reason for which the data will be used and it also stressed on maintaining confidentiality.

The researcher was committed to keep the names and/or other significant identity characteristics such as e-commerce entities functioning in Egypt confidential. Cautionary measures were taken to secure the storage of research-related records and data, and nobody other than the researcher had access to this material. Protecting research subjects from harm was among the researcher's priorities. For elaboration, the researcher made sure that the conditions of distributing and receiving the

questionnaire are suitable and convenient to each respondent. Another type of validity that had to be assured was the external validity, which refers to the extent findings of the questionnaire can be generalised.

Furthermore, the researcher will abide by the university's ethical requirements and gain ethical approval for the study; in addition to considering the following ethical principles:

[1] **Respect** for others;

[2] **Avoidance** of harm to participants;

[3] **Maintaining** the privacy of participants through maintaining the voluntary nature of participation and ensuring an informed consent, ensuring confidentiality and maintaining anonymity of participants; and

[4] **Responsibility** in the analysis of data and reporting findings (Wilson, 2010).

Before filling out the questionnaire, each respondent is asked to read the attached information sheet and signed the consent form to abide by ethical codes. (*Please refer to Appendix No. III for the Information sheet and Appendix No. IV for the Consent form*).

6.16 Chapter Summary

A questionnaire instrument has been developed to test the effect of the independent variables on the dependent ones among 600 Egyptian on-line purchasers. It is

significant to highlight that research philosophy, approach and techniques have been justified as appropriate to the research goal and objectives. The research problem was precisely identified by conducting a preliminary research. Pre-test has been conducted among 50 research samples to ensure the research validity and reliability. The sampling method, the simple random sampling, has been adopted to allow generalisations.

Regarding the statistical techniques, the Inferential Statistical Analysis, was adopted to allow the researcher to draw conclusions and generalise results to in the overall population of on-line purchasers in Egypt; within the inferential types are factor analysis and regression. Moreover, the Descriptive Statistical Analysis was also adopted to describe the collected data in terms of frequencies, means, and standard deviation (Saunders *et al.*, 2012). Accordingly, the following chapter will provide the comprehensive analysis and presents hypothesis testing.

CHAPTER SEVEN

DATA ANALYSIS AND RESULTS

7.1 Introduction

This chapter specifies the statistical analysis of the collected data and the results of this study. It starts by presenting the descriptive statistics concerning the demographic factors of respondents followed by frequency test results and the descriptive statistics on research variables. Furthermore, the Mann-Whitney U Test and Kruskal-Wallis Test are used to test the differences in the level of acceptance to use on-line purchasing as a form of B2C e-commerce among respondent groups that represent a sample of Egyptian consumers. Then, the reliability test for each scale is presented using Cronbach's Alpha Analysis (Mazzocchi, 2011).

On the other hand, factor analysis is used to reduce the number of interrelated variables to a smaller subset of measurement variables, so that the factor scores could be used for further analysis such as regression. Additionally, the results of the Principal Component Factor Analysis is used to reduce the number of interrelated variables to a smaller number of underlying factors, and to explain the interrelation between these factors and the variables used to measure them (Field, 2013). Finally, the Regression Analysis is conducted as a major evaluation of the research model and associated hypotheses then moderating effect of gender, age and experience will be tested.

7.2 Data Preparation

Data preparation aimed to convert the collected data into a suitable form for the Data Analysis Phase (Hair, J. *et al.*, 2013; Mazzocchi, 2008; Quinlan, 2011). The researcher has spent two months collecting data (from May to June 2014) and this was due to the political turmoil and insecurity in the country. The researcher entered the data by himself through creating an SPSS file.

The data coding process involved assigning a code to each possible response to all the survey questions so that the responses can be grouped into limited number of categories (Cooper and Schindler, 2013). The coding scheme or the codebook contains each variable in the study and specifies the application of coding rules to the variable to promote more accurate and efficient data entry. In the SPSS statistical program, the coding scheme is integral to the data file, where the researcher had allocated the question number, variable name, and the variable's code on the SPSS data file, descriptor for the response options. The data coding process was followed by the data entry process. The researcher ensured adequacy and accuracy by coding and entering all responses and accounting for missing responses if they were found.

7.3 Descriptive Analysis

Section 7.3 represents a descriptive analysis of research respondents. As reported in Chapter Five, 600 questionnaires were completed. This is an adequate sample size since the minimum sample size required for this research is 384 respondents according

to Saunders' equation that calculates the required sample size by estimating response rate and the actual sample size required (Saunders *et al.*, 2012). Since research normally works for 95% of certainty with 5% margin of error; "accordingly, the minimum sample size required for a population more than 100,000 and 1,000,000 is 384" (Saunders *et al.*, 2012: 266).

Descriptive statistics are "the numerical, graphical and tabular techniques for organising, analysing and presenting data" (Argyrous, 2001: 20). It involves the collection, presentation, summarisation and description of data so the data can be more easily comprehended (Burns, 2008). Among the best ways to describe the data that corresponds to a certain variable is showing the frequencies of its various categories; frequency is a simple count of how many individuals fall into each category (Antonious, 2013).

Moreover, the mean is a measure of central tendency of a distribution, that is, they give us a central value around which the other values are found. It is very useful for comparing different samples. Furthermore, standard deviation '*std. dev.*' measurement is also used to measure the dispersion or spread of data around the mean; A small standard deviation, that is relative to the value of the mean itself, indicates that the data points are close to the mean; alternatively, a large standard deviation, that is relative to the value of the mean, indicates that the data points are distant from the mean (Field, 2013).

Additionally, the mode is used as it is considered the value that occurs most frequently. According to Malhotra (2010), the mode (M) is a good measure of location when the variable is characteristically categorical or otherwise has been grouped into categories.

Concerning the intention to adopt B2C, we have information and general agreement towards its adoption from 600 respondents with a mean of 3.8, standard deviation of 0.64 and M=4 as shown in Table (7.1) from the other buyers, the mean is 3.9, standard deviation is 0.69 and M=4. This reflects the high rating that respondents gave to the Social Influence. Most of respondents gave high rate to Effort Expectancy during their on-line buying with a mean of 3.64, standard deviation of 0.7 and M=4.

The majority of the respondents agreed that the Performance Expectancy affects their buying decision with a mean of 3.6, standard deviation of 0.64 and M=3.7. Furthermore, the majority of the respondents accepted buying on-line more if they trust on-line buying with a mean of 3.9, standard deviation of 0.69 and M=4. The same is for the On-line Security with a mean of 3.7, standard deviation of 0.54 and M=3.7. However, the majority agreed that Hedonic Motivation has no effect with a mean of 2.1, standard deviation of 0.71 and M=2.

Moreover, the majority of respondents rated perceived On-line Interactivity in Egypt as low with a mean of 2.2, standard deviation of 0.64 and M=2. The majority of the respondents rated the On-line Satisfaction as high with a mean of 3.8, standard deviation of 0.66 and M=4. The same for the Facilitating Conditions with a mean of

3.8, standard deviation of 0.73 and M=4 The majority of respondents rated the Habit as high with a mean of 3.7, standard deviation of 0.66 and M=3.7.

Table (7.1): Descriptive analysis				
	N	Mean	Std. Deviation	Mode (M)
Intention to adopt (B2C)	600	3.8	.64	4
Social Influence	600	3.9	.69	4
Effort Expectancy	600	3.6	.72	4
Performance Expectancy	600	3.6	.64	3.7
On-line Trust	600	3.9	.69	4
On-line Security	600	3.7	.54	3.7
Hedonic Motivation	600	2.1	.71	2
On-line Interactivity	600	2.2	.64	2
On-line Satisfaction	600	3.8	.66	4
Facilitating Conditions	600	3.8	.73	4
Habit	600	3.7	.66	3.7
N	600			

The demographics were tested by a group of questions at the end of the questionnaire regarding respondent's age, gender, educational level and experience. The following discussion assesses the major demographic data collected.

Furthermore, the data analysis was first carried out using descriptive analysis, looking at the frequency of the variables in the demographic data section of the questionnaire by means of frequencies. It can be concluded from Table (7.2) that the majority of respondents (31.2%) were in the age range of 30-39 years followed by from 21-29 (27%), those between 40 and 49 years old were (22%).

Finally, the 50-above age group constituted only (19.8%) of the respondents and this is justified as this age group is risk-averse and prefers to experience the products from physical stores (Herna'ndez *et al.*, 2010; Morris and Venkatesh, 2000) Trocchia and Janda (2000) highlighted that lack of IT experience, resistance to change and their insistence on trying out the product before purchase are the principle obstacles that make older consumers more reluctant to shop on-line.

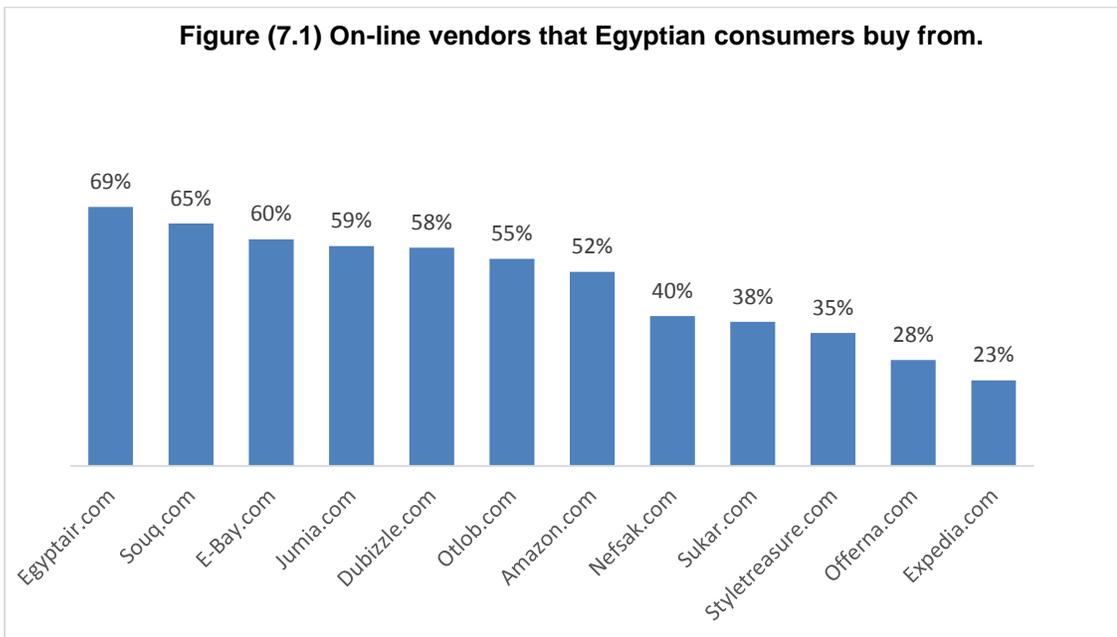
Male respondents represented 50.2% of the sample and females represented 49.8%. The education level of respondents was divided into four categories: Doctorate, Master, Bachelor, and Undergraduate levels. It can be seen from Table (7-2) that the majority of the respondents are BA degree holders (49.7%) followed by undergraduates (28.3%) and (17%) of the sample are master's degree holders and only (16.5%) are doctorate degree holders.

For the experience level with on-line buying, it was divided into four levels: once, from 2-3 times, 4-6 times and more than 6 times. The majority of the sample have bought more than 6 times (51%) which reflects that the sample were highly experienced with on-line buying, followed by from 4-6 times (22.3%). From 2-3 times, it is only (14.7%) from the sample. The remaining level is once and it is only (11.8%) from the sample.

Table (7.2): Sample distribution according to demographic variables			
Variable	Interval	Respondents	
		Number	% of Total
<i>Age</i>	21 – 29	162	27.0
	30 – 39	187	31.2
	40 – 49	132	22.0
	50 – above	119	19.8
	<i>Total</i>	<i>600</i>	<i>100</i>
<i>Gender</i>	Male	301	50.2
	Female	299	49.8
	<i>Total</i>	<i>600</i>	<i>100</i>
<i>Educational level</i>	Undergraduate	101	16.8
	BA/BS Degree	298	49.7
	Master's Degree	102	17.0
	Doctorate Degree	99	16.5
	<i>Total</i>	<i>600</i>	<i>100</i>
<i>Experience</i>	Once	71	11.8
	2-3 times	88	14.7
	4-6 times	134	22.3
	More than 6 times	307	51.2
	<i>Total</i>	<i>600</i>	<i>100</i>

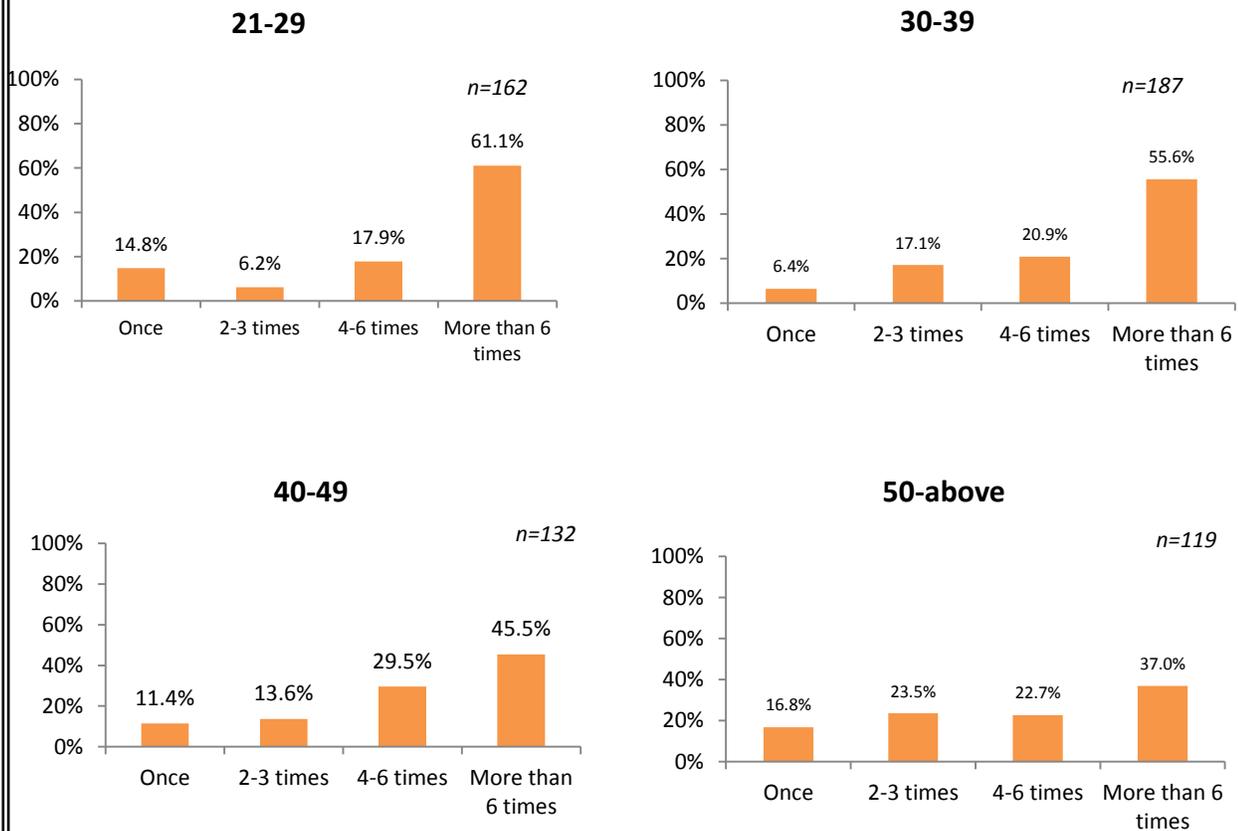
For the on-line vendors that Egyptian consumers have been buying from, it has been found according to Table (7.3) that EgyptAir.com (69%) and Souq.com (65%) were on top of Egyptian websites that respondents buy from. For E-bay.com which is an international on-line vendor, (60%) of respondents use it and least one was Expedia.com with only (23%) use it. This was illustrated also in Figure (7.1).

Table (7.3): On-line vendors that respondents buy from		
Website	Number of Egyptian buyers	% of total Egyptian buyers
Egyptair.com	370	69%
Souq.com	346	65%
E-Bay.com	324	60%
Jumia.com	314	59%
Dubizzle.com	312	58%
Otlob.com	296	55%
Amazon.com	277	52%
Nefsak.com	214	40%
Sukar.com	206	38%
Styletreasure.com	190	35%
Offerna.com	151	28%
Expedia.com	122	23%
Others	0	0%

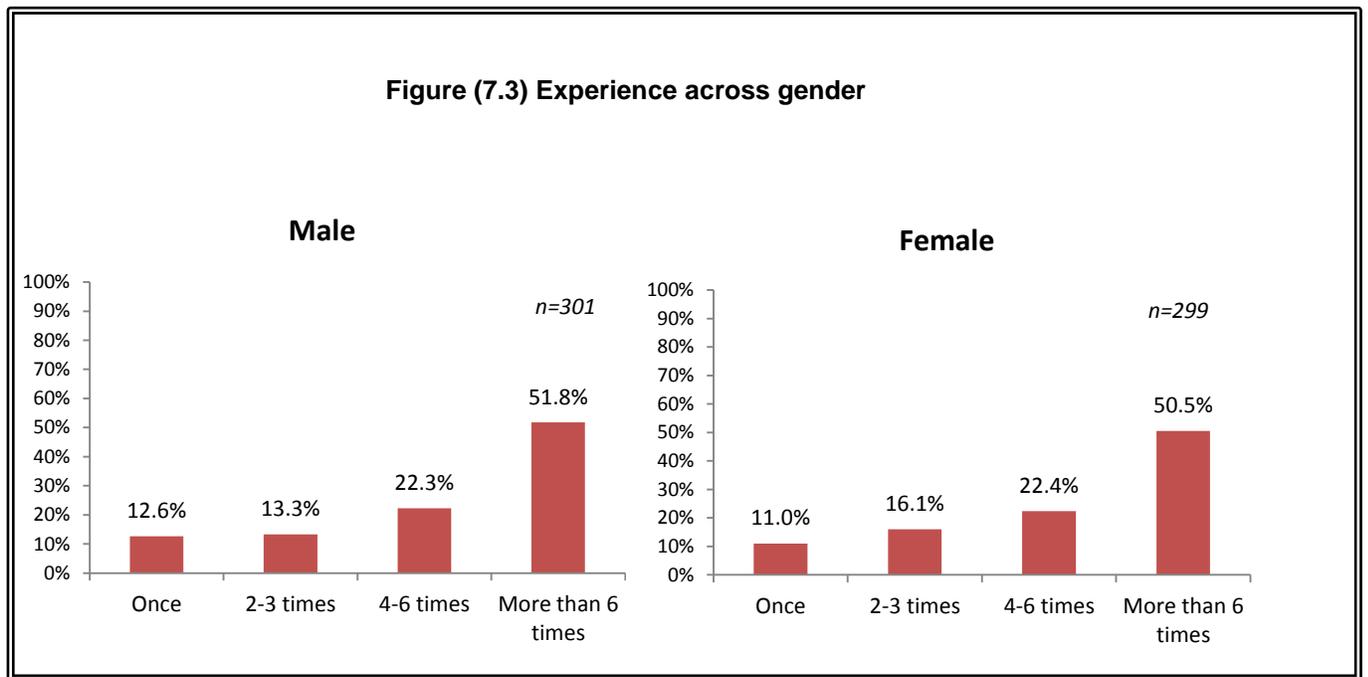


Since previous studies have indicated that gender, age and educational level may indicate different experience levels towards on-line purchasing (Journal of American Chamber, December 2012); it was important to survey various educational levels, age groups and both genders.

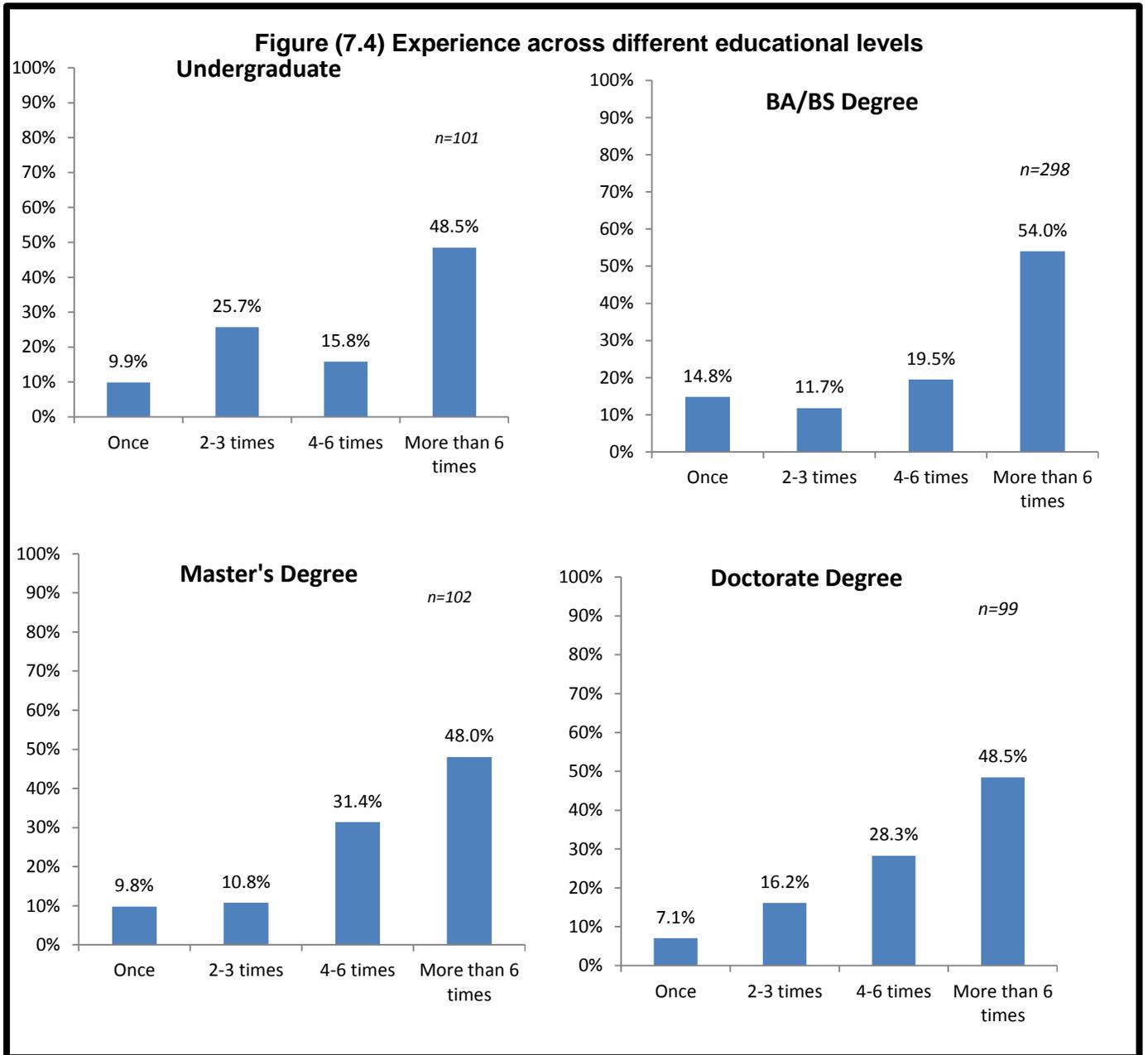
Figure (7.2) Experience of Egyptian buyers across different age groups



Moreover, the descriptive analysis showed that (61.1%) out of the surveyed sample between ages 21-29 have bought on-line more than six times and only 6.2% have bought from 2-3 times as Figure (7.2) shows. For the age group 30-39, about 55.6% have bought more than six times and only 6.4% have bought once. For the age group 40-49, 45% have bought more than six times and only 11.4% have bought once. However, only 37% out of age group between 50 and above have bought more than six times and only 16.8% have bought once.



Moreover, according to Figure (7.3), the majority of males (51.8%) and females (50.5%) of the respondents have bought on-line more than six times followed by (22.3%) of males and (22.4%) of females, who bought on-line from 4-6 times. Only (12.6%) of males and (11%) of females have bought on-line once.



According to Figure (7.4), the majority of all educational levels has bought on-line more than six times: (54%) of BA/BS degree, (48.5%) of undergraduate and doctorate degree holders and (48%) of master's degree holders. Only (7.1%) of doctorate degree

holders, (9.8%) of master’s degree holders, (9.9%) of undergraduate and (14.8%) of BA/BS degrees have bought once on-line. All this shows how the sample is experienced with on-line buying.

7.3.1 Relationship Between Gender, Age, Education and Experience across Intention to Adopt B2C E-commerce

It is important to analyse the differences among gender, age, experience and education of the respondents towards intention to adopt B2C. It is realised from Table (7.4) that the majority of males (69%) and females (70%) has rated strongly agree-agree towards intention to adopt B2C and only (5%) of males and (5%) of females has rated strongly disagree-disagree.

Table (7.4): Gender and intention to adopt B2C				
	Male		Female	
	count	%	count	%
Strongly Disagree	1.0	0.3%	0	0.0%
Disagree	15.5	5.1%	13.5	4.5%
Neutral	77.75	25.8%	75.75	25.3%
Agree	152.0	50.5%	166.0	55.5%
Strongly Agree	54.75	18.2%	43.75	14.6%
Total	<i>301</i>	<i>100.0%</i>	<i>299</i>	<i>100.0%</i>

Moreover, across difference age groups as shown in Table (7.5) there are an agreement towards intention to adopt B2C. This is realised among age group (31-39), who rated strongly agree-agree towards intention to adopt B2C e-commerce by (74%) followed by age group (21-29) by (71%), followed by age group (40-49) by (67%) and age group (50-above) by (65%) of the respondents. However, the respondents across all age

groups that have rated strongly disagree-disagree was between (3%- 6%) towards intention.

Table (7.5): Age and Intention to adopt B2C								
	<i>21- 29</i>		<i>30-39</i>		<i>40-49</i>		<i>50 - above</i>	
	<i>count</i>	<i>%</i>	<i>count</i>	<i>%</i>	<i>count</i>	<i>%</i>	<i>count</i>	<i>%</i>
Strongly Disagree	0	0%	0	0%	0.5	0%	0.5	0%
Disagree	9.5	6%	5.0	3%	8.25	6%	6.25	5%
Neutral	38.5	24%	44.75	24%	35.25	27%	35.0	29%
Agree	80.25	50%	105.75	57%	75.0	57%	57.0	48%
Strongly Agree	33.75	21%	31.5	17%	13.0	10%	20.25	17%
Total	<i>162</i>		<i>187</i>		<i>132</i>		<i>119</i>	

For the different educational levels, according to Table (7.6), most of undergraduates rated strongly agree-agree by (79%) followed by master’s degree holders by (73%), followed by BA/BS degree holders by (69%) and followed by doctorate degree holders by (58%). However, the responders across all educational levels have rated strongly disagree-disagree were between (3%-8%) towards intention.

Table (7.6): Education and Intention to adopt B2C								
	<i>Undergraduate</i>		<i>BA/BS Degree</i>		<i>Master's Degree</i>		<i>Doctorate Degree</i>	
	<i>count</i>	<i>%</i>	<i>count</i>	<i>%</i>	<i>count</i>	<i>%</i>	<i>count</i>	<i>%</i>
Strongly Disagree	1.0	1%	0	0%	0	0%	0	0%
Disagree	4.75	5%	12.75	4%	3.5	3%	8.0	8%
Neutral	16.25	16%	79.75	27%	24.0	24%	33.5	34%
Agree	50.0	50%	166.0	56%	58.0	57%	44.0	44%
Strongly Agree	29.0	29%	39.5	13%	16.5	16%	13.5	14%
Total	<i>101</i>		<i>298</i>		<i>102</i>		<i>99</i>	

For experience with on-line buying, according to Table (7.7), most of respondents who have bought once on-line have rated strongly agree-agree by (78%) towards intention to adopt B2C. This was followed by respondents, who bought who have bought 2-3 times by (73%), followed by who bought more than six times by (72%), and followed by who have bought from 4-6 times by (58%). However, the respondents across all experience levels with on-line buying have rated strongly disagree-disagree towards intention to adopt B2C were between (3%-9%).

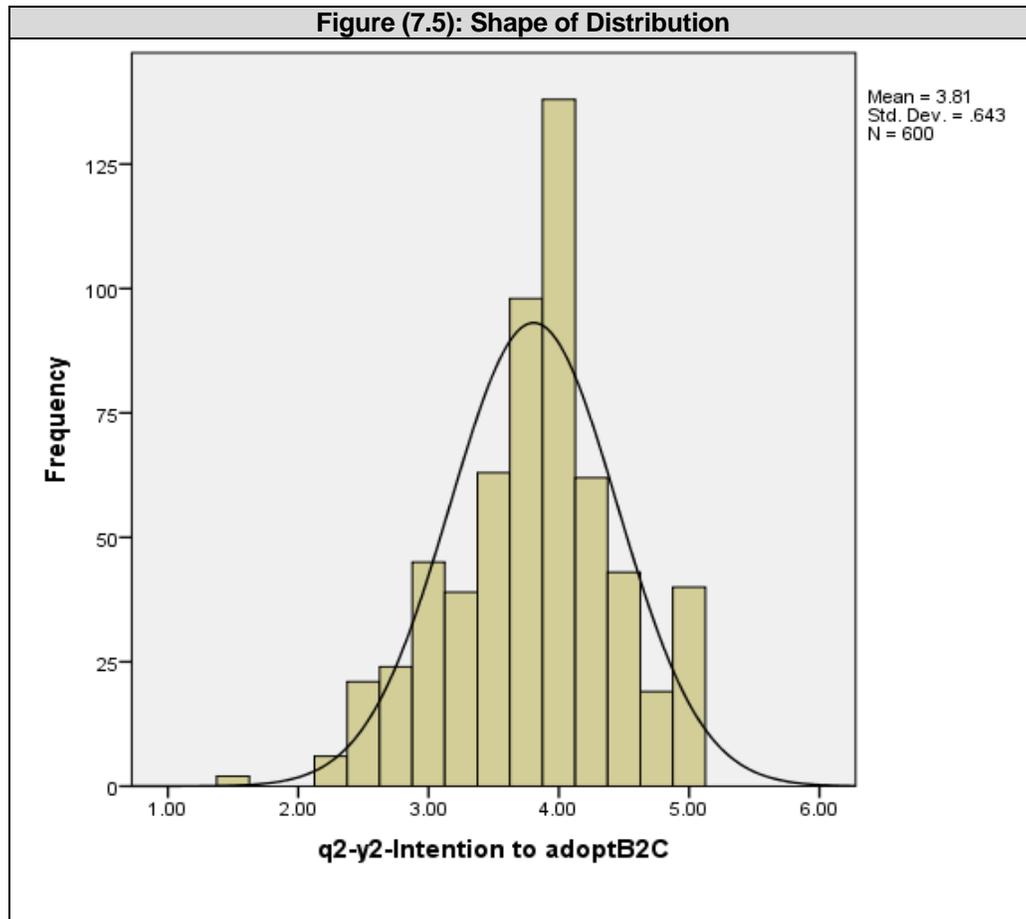
Table (7.7): Experience of Buyers and intention to adopt B2C								
	<i>Once</i>		<i>2-3 times</i>		<i>4-6 times</i>		<i>More than 6 times</i>	
	<i>count</i>	%	<i>count</i>	%	<i>count</i>	%	<i>count</i>	%
Strongly Disagree	0	0%	0.5	1%	0.5	0%	0	0%
Disagree	2.5	4%	4.5	5%	11.5	9%	10.5	3%
Neutral	13.5	19%	19.0	22%	44.75	33%	76.25	25%
Agree	41.75	59%	41.25	47%	67.0	50%	168.0	55%
Strongly Agree	13.25	19%	22.75	26%	10.25	8%	52.25	17%
Total	71		88		134		307	

7.4 Distribution of Dependent Variables

In order to decide whether parametric or non-parametric tests will be used, the researcher needs to test whether a distribution is normal or not (Malhotra, 2010). Generally, parametric tests should be used when normality or close approximation to it is assumed. For example, a researcher can superimpose normal curves over histograms. But it would be difficult to determine accurately if the curve deviated more than it would from normality (Burns, 2008). Accordingly, more objective measurements are needed as to determine whether the obtained distribution as a whole

deviates from a normal deviation distribution with the same mean and standard deviation, which can be obtained through the Kolmogorov-Smirnov and Shapiro-Wilk Tests (Field, 2013). The Significance level will be presented as P-value. If the results of those tests are non-significant ($P > 0.05$) then, the distribution of the sample is normal, while it is considered non-normal if the results is significant ($P < 0.05$) (Burns, 2008). Accordingly, the K-S and Shapiro-Wilk tests were conducted to check the normality of the distribution of whether on-line purchasing is accepted or not. Table (7.8) shows that the distribution deviated from normality (P is 0.0001 which is less than 0.05). The actual shape of distribution is illustrated in Figure (7.5) and it shows that the distribution is positively skewed from the normal distribution. To conclude, many parametric tests assume normally distributed scores. Therefore, a non-parametric test is considered as an alternative when there is deviation from normality of distribution (Argyrous, 2001; Field, 2013; Hardely and Bryman 2012; Landers, 2013). In other words, the distribution of scores of the intention to adopt B2C is not normal. Therefore, non-parametric test will be used. This test is used to test the difference between two and more independent variables on a continuous measure (Burns, 2008). Specifically, the Mann-Whitney U and Kruskal-Wallis will be conducted to test these differences.

Table (7.8):Tests of Normality						
	Kolmogorov-Smirnov^a			Shapiro-Wilk		
	<i>Statistic</i>	<i>df</i>	<i>p-value</i>	<i>Statistic</i>	<i>df</i>	<i>p-value</i>
<i>Intention to adopt (B2C)</i>	.132	600	.001	.967	600	.001



7.5 Group Differences

The researcher wanted to investigate whether the intention to adopt B2C differed among various groups of respondents. In order to fulfill this objective a series of tests were carried out on the empirical data. Two statistical techniques were used: the Mann-Whitney U Test, which is “a non-parametric test that looks for differences between two independent samples. It tests whether the population from which “two samples are drawn have the same location” (Field, 2013: 878); and Kruskal-Wallis Test, which “is a non-parametric test of whether more than two independent groups differ” (Burns,

2008: 316). Thus, the Mann-Whitney U Test will be used for measuring group differences by gender and the Kruskal-Wallis Test will be used for measuring group differences by age and education across intention to adopt B2C and experience.

7.5.1 Group Differences by Gender

Table (7.9) shows the results obtained from the Mann-Whitney U Test for gender analysis. The test was conducted to identify any difference between males and females in their intention to adopt B2C along with their experience towards on-line buying in Egypt. The level of significance will be examined to interpret the differences. The results from Table (7.9) suggests that there was no significant gender difference in their intention to adopt B2C. This result is indicated by: $p= 0.769 > 0.05$, $U=44,381$, $z= 0.294$ and Median (Md) (for males and females) =4. Hence, the test revealed that males and females were similar in their intention to adopt B2C. Moreover, the results suggest that there is no significant gender difference regarding the respondents' experience with on-line buying which is on their frequency of purchasing (with $p= 0.820$, $U=44,554.5$, $z=0.227$ and $Md=4$). Moreover, Table (7.10) shows the rank of gender where there are no differences between scores of males and females concerning intention to adopt B2C and their experience.

Table (7.9): Results of the Mann-Whitney Test for gender		
	Experience	Intention to adopt (B2C) e-commerce
Mann-Whitney U	44554.5	44381.000
Z	-.227	-.294
p-value	.820	.769

Table (7.10): The Mann-Whitney Test				
<i>Ranks for Gender</i>				
What is your gender?		N	Mean Rank	Sum of Ranks
Intention to adopt B2C	Male	301	302.55	91069.00
	Female	299	298.43	89231.00
	<i>Total</i>	600		
Experience	Male	301	301.98	90895.50
	Female	299	299.01	89404.50
	<i>Total</i>	600		

7.5.2 Group Differences by Age Group

For this part of the analysis, the respondents were divided into four different age groups (20-29, 30-39, 40-49, and 50-above). The level of significance will be examined to interpret the differences. From Table (7.11), The Kruskal-Wallis Test results show no significant age differences in the respondents' intention to adopt B2C with $p=0.109$, $\chi^2=6.047$, and $df=3$. However, there is a significant age differences regarding the experience with buying on-line with $p= 0.000$, $\chi^2=18.905$, and $df=3$.

Table (7.11): The Kruskal-Wallis Test statistics			
Moderating Variables		Intention to adopt B2C	Experience
Age	Chi-Square	6.047	18.905
	df	3	3
	p-value	.109	.001
Educational Level	Chi-Square	21.759	1.025
	df	3	3
	p-value	.000	.795

7.5.3 Group Differences by Educational Level

Table (7.11) shows the results of the Kruskal-Wallis Test for analysis of the educational level, which were divided into four categories (doctorate, masters, BA/BS degrees, and undergraduate students). The level of significance will be examined to interpret the differences. The test results show a significant educational differences in the respondents' intention to adopt B2C with $p=0.000$, $\chi^2= 21.759$, and $df=3$. However, there are no significant educational differences regarding the experience of the respondents who have been buying on-line with $p=0.795$, $\chi^2=1.025$, and $df=3$.

7.6 Reliability Tests

Reliability refers to the ability of the measure to produce consistent results when the same entities are measured under different conditions (Wilson, 2012). In other words, it means the extent to which data collection techniques will yield consistent results (Saunders *et al.*, 2012).

Generally, there are more than one approach to test reliability among which are: test-retest and internal consistency (Malhotra, 2010; Sekaran and Bougie, 2010). The stability approach secures consistent results with repeated measurements of the same person with the same instrument. Thus, a procedure is stable if it gives the same reading on a particular person when repeated one or more times, which leads to test-retest arrangements when applied on survey instrument (Schindler, 2008). Test re-test is obtained by correlating data collected with those from the same questionnaire collected under as near equivalent conditions as possible. The longer the time interval between

the two questionnaires, the lower the likelihood that respondents will answer in the same way (Saunders *et al.*, 2012).

The second approach is internal consistency that refers to the degree to which the items that make up the scale hang together (Schindler, 2008). Cronbach's Co-efficient Alpha is considered the most popular test of inter-item consistency which is used for multipoint scaled items and it directly measures the extent to which items cohere with their scale (Hair *et al.*, 2013; Sekaran and Bougie, 2010; Wilson, 2012). The higher the co-efficient, the more reliable the questionnaire will be. According to Uma Sekaran and Roger Bougie, Cronbach's Alpha is the most often used statistical measure to evaluate internal consistency in business research (2010). Accordingly, the internal consistency method is adopted at this study as to evaluate the reliability of the measures as Cronbach's Alpha does not require the researcher to administer the questionnaire for two times.

Some researchers have reported no comprehensively acceptable lower limit to the value of alpha as it is partly affected by the purpose of the test or measure (Hardy and Bryman, 2011). Although Malhotra and Birks (2010) recommended that a value greater than 0.6 is considered a satisfactory level of internal consistency of a measure; the commonly accepted lower limit for alpha is 0.7 (Hardy and Bryman, 2011). Accordingly, the researcher will adopt the measure of 0.7 as the cut-off criterion of this research.

Table (7.12) shows the value of Cronbach's Alpha for the eleven constructs. Alpha will be used to measure separately for each subset of questions to indicate differences in consistency. Moreover, the higher the Cronbach's Alpha, the higher the reliability of measuring the same construct. It can be seen from the table that all eleven constructs are with a value higher than 0.70 which is satisfactory. However, a factor analysis will allow a decision as to which item should stay and which one should be removed.

Table (7.12): Reliability Statistics: Cronbach's Alpha for all items					
Item	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Intention to adopt (B2C) E-commerce (IA)					
2.1-I am planning to increase my on-line buying	127.6033	124.794	.698	.818	.818
2.2-I suggest other people to buy on-line	127.8383	124.186	.688	.817	
2.3-I will continue to buy on-line rather than offline	127.7483	124.192	.633	.818	
2.4-I will regularly buy on-line in the near future	127.7167	124.077	.639	.818	
Social Influence (SI)					
3.1-People who influence my behaviour (e.g. family and friends) think that I should buy on-line	127.5617	124.237	.639	.818	.817
3.2-People who are important to me (e.g. family and friends) think that I should buy on-line	127.6733	123.826	.667	.817	
3.3-People whose opinions that I value (e.g. family and friends) prefer that I buy on-line	127.7000	123.302	.659	.817	
Effort Expectancy (EE)					
4.1-Learning to operate on-line buying is easy for me	127.8800	124.353	.584	.819	.818
4.2-It would be easy for me to become skillful at using on-line buying	127.8517	125.075	.591	.819	
4.3-I find on-line buying easy to use	127.9633	123.064	.600	.818	

Table (7.12): Reliability Statistics: Cronbach's Alpha for all items (continued)					
Performance Expectancy (PE)					
5.1-I find on-line buying useful in my daily life	127.8950	128.508	.357	.826	.826
5.2-On-line buying will increase my chances to buy all the things I need	127.8617	127.983	.421	.824	
5.3-I can save time by buying on-line	127.9667	127.665	.367	.825	
5.4-On-line buying helps to make purchasing decisions in the shortest time	127.8800	130.106	.276	.828	
On-line Trust (OT)					
6.1-The Egyptian on-line stores provide correct information about the items I want to buy	127.5650	128.290	.403	.824	.824
6.2-The Egyptian on-line stores provide enough information about the item I want to buy	127.6800	128.345	.402	.824	
6.3-The Egyptian on-line stores' are trustworthy	127.7050	127.521	.423	.824	
On-line Security (OSY)					
7.1-I am concerned about my security when I buy on-line	127.8933	130.937	.234	.829	.826
7.2-On-line stores in Egypt will protect my e-payment and will not lead to transaction fraud	127.8500	129.076	.360	.826	
7.3-The risk associated with my on-line payment is low	127.7150	129.616	.329	.826	
7.4-I feel safe to share my credit card while buying on-line	127.7517	127.947	.402	.824	
Hedonic Motivation (HM)					
8.1-On-line buying is fun	129.3283	146.111	-.487	.851	.849
8.2-Buying on-line is enjoyable	129.4650	144.159	-.459	.847	
8.3-Buying on-line is entertaining	129.4283	145.481	-.510	.849	
On-line Interactivity (OI)					
9.1-I can search easily through the on-line store	129.3200	141.263	-.273	.844	.846
9.2-At the site of the on-line store, I can choose the way in which information is presented to me	129.4400	140.367	-.255	.842	
9.3-I can change images easily at the on-line store to fit my choices	129.4050	142.031	-.333	.844	
9.4-The site of the on-line store responds to my questions efficiently	129.2117	147.219	-.540	.852	

Table (7.12): Reliability Statistics: Cronbach's Alpha for all items (continued)					
On-line Satisfaction (OS)					
10.1-The Egyptian on-line stores offer good quality service	127.5650	124.219	.638	.818	.818
10.2-The Egyptian on-line stores allow exchange or money refund for wrong deliveries	127.6667	123.889	.666	.817	
10.3-The Egyptian on-line stores offer good after sale services	127.7033	123.204	.662	.817	
10.4-The Egyptian on-line stores deliver my purchases in the expected time	127.8817	124.362	.585	.819	
Facilitating Conditions (FC)					
11.1-I have the resources necessary to buy on-line	127.6917	126.027	.502	.821	.821
11.2-I have the knowledge necessary to buy on-line	127.7900	124.851	.579	.819	
11.3-I can get help from others when I have difficulties while buying on-line	127.7833	126.284	.516	.821	
Habit (H)					
12.1-The use of on-line buying has become a Habit for me.	127.9050	131.021	.225	.829	.829
12.2-I am addicted to using on-line buying	127.8717	131.017	.251	.829	
12.3-I must buy on-line	127.9767	130.110	.248	.829	

7.7 Factor Analysis

The factor analysis aims to reduce the dimensions of the data space into a dimension that can be interpreted. In other words, it was used to reduce the number of inter-related variables to a smaller subset of measurement variables, so that the factor scores could be used for further analysis such as regression. The most popular methods are Factor Analysis (FA) and Principle Component Analysis (PCA) (Burns, 2008). Furthermore, the FA has been defined as a “multivariate technique for identifying whether the correlations between a set of observed variables stem from their relationship to one or

more latent variables in the data, each of which takes the form of a linear model (Field, 2013: 875). There are several methods for conducting the FA. But there are two aspects to consider: whether the findings will be generalised from the sample to a population, or whether you are exploring your data or testing hypothesis (Field, 2013).

When the factor analysis was originally developed, it was assumed that it would be used to explore data to generate future hypotheses. So, it was assumed that the technique would be applied to the entire population of interest. Therefore, certain techniques assume that the sample used is the population, and so the results cannot be extrapolated beyond that particular sample. In fact, the Principle Component Analysis (PCA) and the Principle Factor Analysis methods imply that conclusions are restricted to the sample collected and generalisations of results can be achieved only if analysis using different samples reveals the same factor structure (Fidell and Tabachnick, 2014).

Another approach is to assume that participants are randomly selected and that the variables measured constitute the population of variables in which we are interest. Thus, it is possible to generalise from the sample to the larger population “but with the caveat that any findings hold true are only for the set of variables measured because it has be assumed that this set constitutes the entire population of variables” (Field, 2013:675). The techniques in this category include the maximum-likelihood method and Kaiser’s alpha factoring (Field, 2013).

Based on literature review, many researchers have agreed that there is a slight difference between factor analysis and component factor analysis and the solutions

generated from both differ little (Cliff, 1987; Fidell and Tabachnick, 2013; Field, 2013; Guadagnoli and Velicer, 1988). Other arguments state that PCA considers the total variance and derives factors that contain a small proportion of unique variance and it aims to reduce the number of variables to fewer components. Moreover, it is concerned with explaining the variance in the data (Pallant, 2007).

On the other hand, the factor analysis estimates the shared or common variance among the variables and it aims to identify the underlying factors that can explain any intercorrelation among the variables and explaining the correlation among the indicators (Fidell and Tabachnick, 2013; Field, 2013; Hardy and Bryman, 2011; Pallant, 2007). Accordingly, the PCA is appropriate for this study as its primary concern is to predict the factors needed to account for the maximum portion of the variance of the original set of variables.

On the other hand, in this study, the independent variables were hypothesised as affecting the dependent variable and to validate this prediction, the data will be analysed using regression with On-line Satisfaction, On-line Interactivity, On-line Trust, On-line Security, Performance Expectancy, Effort Expectancy, Social Influence, Hedonic Motivation, Facilitating Conditions, Habit as independent variables and intention to adopt B2C as the dependent variable.

Before running the regression analysis, data were examined to determine if all regression assumptions were met. In regression, multi-collinearity is a potential concern; therefore, correlations among independent variables were examined. The

Multi-collinearity occurs when inter-correlations amongst the independent variables are statistically significant (Pallant, 2007).

One way of identifying multi-collinearity is to scan a correlation (Hardy and Bryman, 2011). In addition, several procedures have been suggested to cope with multi-collinearity, one of which consists of using the PCA to transform a set of correlated independent variables into a new set of predictors that are mutually independent (Malhotra, 2010). The PCA can be used to create a set of factors as to be treated as uncorrelated variables as one approach to handling multi-collinearity (Field, 2013). The correlation matrix was generated for all variables using factor principle component analysis in order to be sure that there is no correlation between variables.

The correlation co-efficient matrix shows the co-efficient and significance levels. The top half shows the correlation co-efficient between all pairs of questions. In other words, it shows if there is any correlation between the variables while the bottom half contains the one-tailed significance of these coefficients, which implies that the correlation is significant. In this section, a factor analysis was conducted to find out which variables in the comprised coherent subsets independent of each other.

The correlation matrix, a square 34 by 34 was generated for all variables using principle component analysis to be sure if there is a correlation between variables. Due to its size, just a portion of the matrix is displayed in Table (7.13).

Table (7.13): Correlation Matrix								
		Q3-1	Q3-2	Q3-3	-	Q12-1	Q12-2	Q12-3
<i>Correlation</i>	Q3-1	1.000	0.589	0.628	-	.158	.096	.119
	Q3-2	0.589	1.000	0.583	-	.073	.135	.091
	Q3-3	.167	.235	1.000	-	.039	.104	.117
	-	-	-	-	-	-	-	-
	Q12-1	0.158	0.073	.039	-	1.000	.486	.533
	Q12-2	.096	.135	.104	-	.486	1.000	.696
	Q12-3	.0119	.091	.117	-	.533	.696	1.000

Determinant = 0.034

A scan was conducted to check the correlation coefficient and look for any greater than 0.9; according to Field (2013). If any values are found greater than 0.9, then a problem could arise because of singularity in the data. Accordingly the determinant of the correlation matrix was checked, if it was greater than the necessary value of 0.00001. The shown value at the matrix was 0.034. Therefore, multi-collinearity is not a problem for these data. In other words, all questions in the matrix correlate fairly well and none of the correlation coefficients is particularly large. Therefore, there is no need to consider eliminating any questions at this stage (Field, 2013).

7.7.1 Sampling Adequacy

PCA implies assessment of the suitability of the data for factor analysis. Therefore, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Barlett's Test of Sphericity (BTS) were calculated (Hardy and Bryman, 2011). KMO and BTS measure whether the sample used in the study is qualified for factor analysis. The value for the KMO statistic falls between 0 and 1, where 0 indicates that the sample is not sufficient

for factor analysis, and 1 indicates that a factor analysis should yield distinct and reliable factors, and in social science research, the cut-off value for KMO is 0.6 (Field, 2013).

Furthermore, it is useful to refer to the correlation matrix, if not many correlations are larger than 0.03 then it is unlikely that the variables share common factors, and the factor analysis is pointless (Pallant, 2007). As Table (7.13) shows, the first output generated from the PCA is the correlation matrix, which shows the occurrence of many correlation coefficients at or above 0.03. The KMO value (0.836) was satisfactory, exceeding the recommended value of 0.6 (Field, 2013), while the BTS was highly significant ($P < 0.001$), approx. $\chi^2 = 20039.840$ and $df = 561$. (Pallant, 2007) as per the Table (7.14) specifies. Therefore, factor analysis was considered appropriate for this study.

Table (7.14): KMO and Bartlett's Test		
<i>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</i>	.836	
<i>Bartlett's Test of Sphericity</i>	<i>Approx. Chi-Square</i>	20039.840
	<i>df</i>	561
	<i>p-value</i>	0.001

7.7.2 Conducting Factor Analysis

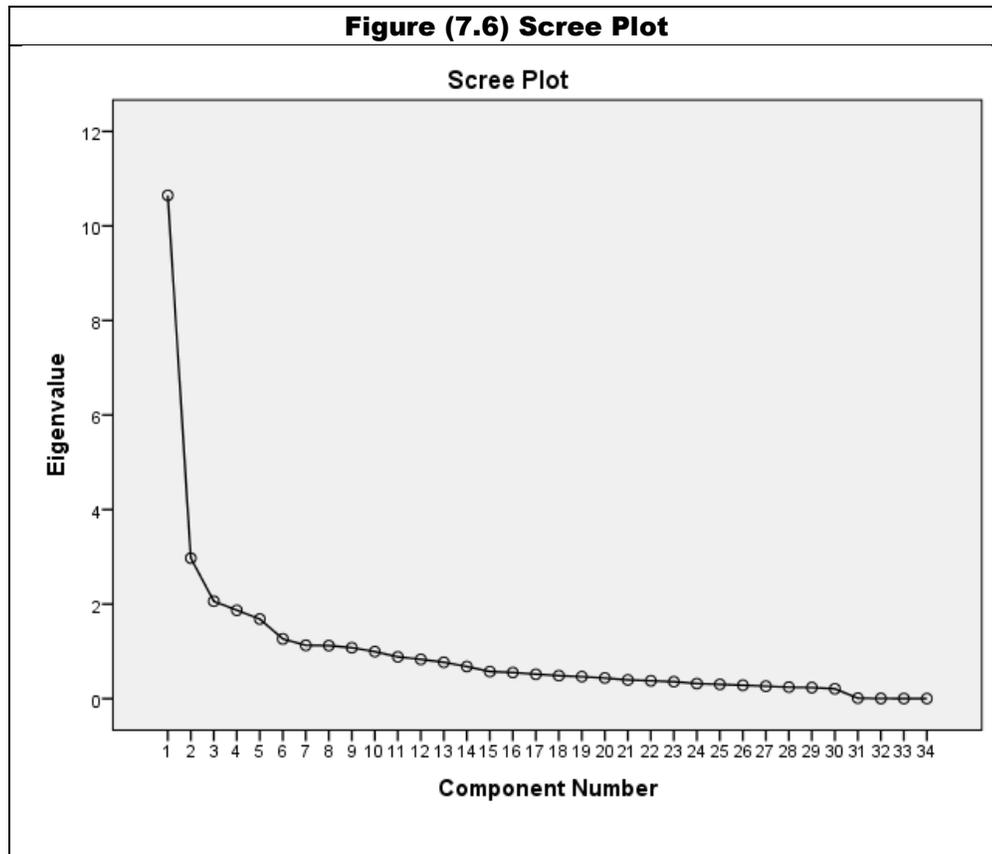
For the present study, a factor analysis was first made on all 10 independent variables using principal component analysis using the SPSS software. As per previously specified, prior to performing factor analysis, the suitability of data for factor analysis was assessed. PCA reveals 10 components with eigenvalues exceeding 1. The

eigenvalues of a factor represents the amount of the total variance explained by that factor (Pallant, 2007). It is mainly used to identify the number of factors that can be extracted using factor analysis. Therefore, the extracted factor should have an eigenvalues that exceed 1, which mean that the marginal contribution for this factor in explaining the variance on the data is more than 0.

Table (7.15) summarises the eigenvalues and explains the total variance for the extracted components. The results revealed that nine components included in the factor analysis possessed eigenvalues greater than 1, explaining 33.313%, 8.741%, 6.061%, 5.497%, 4.952%, 3.714%, 3.317%, 3.301%, and 3.164% of the variance respectively.

Factors with eigenvalues greater than 1 should be considered important for analysis purposes (Hardy and Bryman, 2011). However, some argue that this method is not accurate and that researchers should use a scree plot to decide how many factors to extract (Burns, 2008). According to Field (2013), the scree plot technique produces a graph of each eigenvalue against the factor with which it is associated. The number of data above the bend or the break point, excluding the break point, is the number of factors to retain for further analysis.

Table (7.15): Total Variance Explained									
<i>Component</i>	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	<i>Total</i>	<i>% of Variance</i>	<i>Cumulative %</i>	<i>Total</i>	<i>% of Variance</i>	<i>Cumulative %</i>	<i>Total</i>	<i>% of Variance</i>	<i>Cumulative %</i>
1	10.647	31.313	33.124	10.647	31.313	31.313	4.182	12.300	12.300
2	2.972	8.741	51.468	2.972	8.741	40.055	3.589	10.557	22.857
3	2.061	6.061	61.605	2.061	6.061	46.116	3.502	10.301	33.158
4	1.869	5.497	69.872	1.869	5.497	51.613	2.464	7.248	40.405
5	1.684	4.952	76.763	1.684	4.952	56.565	2.409	7.087	47.492
6	1.263	3.714	82.994	1.263	3.714	60.279	2.383	7.009	54.501
7	1.128	3.317	88.741	1.128	3.317	63.597	2.261	6.651	61.152
8	1.122	3.301	93.993	1.122	3.301	66.898	1.520	4.470	65.622
9	1.076	3.164	97.180	1.076	3.164	70.062	1.510	4.440	70.062
10	.995	2.926	100.000						



As the above Figure (7.6) shows, a clear break after the 5th factor, accordingly, this will be the initial number of factors to start with. Therefore, it was decided to retain the first five factors for further investigation. The five-component solution explained a total of 76.763% of the variance.

7.7.3 Principle Component

The PCA is the solution of choice for the researcher, who is primarily interested in reducing a large number of variables down to a smaller number of components (Field, 2013). It is also useful as an initial step in the FA, where it reveals a great deal about

maximum number and nature of factors. Generally, the goal of the PCA “is to extract maximum variance from the data set with each component” (Fidell and Tabachnick, 2013:612).

The first principal component of the matrix is the linear combination of the observed variables that maximally separates subjects by maximising the variance of their component scores. The second component is formed from residual correlations. It is the linear combination of observed variables that extracts maximum variability uncorrelated with the first component. Subsequent components also “extract maximum variability from residual correlations and are orthogonal to all previously extracted components” (Fidell and Tabachnick, 2013:612). The principal components are ordered, with the first component extracting the most variance and the last component the least variance. Table (7.16) shows the component matrix of the current study, which was composed of five components only for the ten independent variables.

Table (7.16): Component Matrix^a					
	<i>Component</i>				
	1	2	3	4	5
Q10.3OS	.806				
Q3.3 SI	.806				
Q10.2 OS	.767				
Q3.2 SI	.766				
Q3.1 SI	.738				
Q10.1 OS	.737				
Q4.3 EE	.711				
Q11.2 FC	.704				
Q8.3 HM	-.673				
Q4.2 EE	.672				
Q10.4 OS	.658				
Q4.1 EE	.657				
Q9.4 OI	-.655				
Q8.1 HM	-.642				
Q11.1 FC	.631				
Q8.2 HM	-.627				
Q11.3 FC	.626				
Q7.4 OSY					
Q7.2 OSY					
Q12.2 HT		.573			
Q12.3 HT		.563			
Q5.3 PE		.523			
Q5.1 PE		.516			
Q5.2 PE					
Q7.1 OSY					
Q6.1 OT			-.574		
Q6.3 OT			-.563		
Q6.2 OT			-.533		
Q12.1 HT					
Q9.2 OI					.609
Q9.3 OI					.556
Q9.1 OI					.549
Q7.3 OSY					
Q5.4 PE					
<i>Extraction Method: Principal Component Analysis.</i>					
<i>a. 3 components extracted.</i>					

7.7.4 Rotated Component Matrix

The “results of factor extraction, unaccompanied by rotation, are likely to be hard to interpret regardless of which method of extraction is used” (Fidell and Tabachnick, 2013:622). After extraction, rotation is used to improve the interpretability and scientific utility of the solution (Field, 2013). It is worth mentioning that different methods of rotation tend to give similar results. Among rotation techniques are orthogonal and oblique rotation. In the orthogonal rotation, the factors are uncorrelated. It offers ease of interpreting, describing, and reporting results. On the other hand, in the oblique rotation, the factors may be correlated with conceptual advantages. However, practical disadvantages in interpreting, describing, and reporting results remain (Fidell and Tabachnick, 2013: 630). Accordingly, the technique of rotation that will be adopted at this study is the Orthogonal Rotation; specifically, "the varimax, which is considered the most commonly used of all the rotations available. Other techniques include the quartimax, and the equamax” (Fidell and Tabachnick, 2013:621).

The goal of the varimax rotation is to simplify factors by maximising the variance of the loadings within factors, across variables and the spread in loadings is maximised—loadings that are high after extraction become higher after rotation and loadings that are low become lower. Moreover, “with varimax, interpreting a factor is easier because it is obvious which variables correlate with” (Fidell and Tabachnick, 2013:621).

The rotated component matrix presented in Table (7.17) shows the factor loadings for all five factors/components. The first factor was labelled Factor One related to the

Effort Expectancy (EE). It was observed from that Question No. 4.1 has the highest loading on this factor (0.870) indicating that respondents did not like the idea of using e-commerce because of the high EE. The second factor was labelled Factor Two, which combined the two constructs: Hedonic Motivation and Facilitating Conditions (HM and FC). It appeared from Table (7.17) that Question No.8.2 has highest loading on this factor (0.745) indicating the importance of HM to the respondents in order for them to accept e-commerce. However, Question No.11.2 has the lowest loading (0.577) on the same factor indicating how Facilitating Conditions is not satisfactory for on-line user as the Egyptian consumers needs to have the resources represented in facilitating conditions in order to be satisfied. For the third factor, it was labelled Factor Three which combined the two constructs: Social Influence and On-line Satisfaction (SI and OS). It appears that the Question No.10.1 (SI) has the highest loading on this factor (0.854) and Question No. 3.3 (OS) has the lowest (0.682). It is important to note that On-line satisfaction increases the social influence on Egyptian consumers. For the fourth factor, it was labelled Factor Four, which related to the On-line Trust (OT) and Question No.6.2 has the highest loading (0.796). For the fifth factor, it was labelled factor Five, which related to the On-line Interactivity (OI) and Question No.9.2 has the highest loading (0.842).

Table (7.17): Rotated Component Matrix^a					
	<i>Component</i>				
	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Q4.1 EE	.870				
Q4.3 EE	.668				
Q4.2 EE	.619				
Q8.2 HM		.745			
Q8.3 HM		.736			
Q8.1 HM		.636			
Q11.1 FC		.579			
Q11.3 FC		.574			
Q11.2 FC		.557			
Q10.1 OS			.854		
Q3.1 SI			.853		
Q10.2 OS			.580		
Q3.2 SI			.578		
Q10.3 OS			.523		
Q10.4 OS			.850		
Q3.3 SI			.521		
Q6.2 OT				.796	
Q6.1 OT				.790	
Q6.3 OT				.782	
Q9.2 OI					.842
Q9.1 OI					.810
Q9.3 OI					.807
Q9.4 OI					.524
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalisation.					
a. Rotation converged in 31 iterations.					

7.7.5 Final Scale

The list of factors and their variables to develop a validated PCA analysis is presented in the following Table (7.18). A total of 10 variables formed the survey content of the final scales and belonged to five different constructs, which included the independent variables.

Table (7.18): Final Scale					
	Factors				
	Effort Expectancy(EE)	Motivation and Facilitating Conditions (HM&FC)	Social influence and On-line Satisfaction (SI&OS)	On-line Trust (OT)	On-line Interactivity (OI)
Variables	Q4.1 EE	Q8.2 HM	Q10.1 OS	Q6.2 OT	Q9.2 OI
	Q4.3 EE	Q8.3 HM	Q3.1 SI	Q6.1 OT	Q9.1 OI
	Q4.2 EE	Q8.1 HM	Q10.2 OS	Q6.3 OT	Q9.3 OI
		Q11.1 FC	Q3.2 SI		Q9.4 OI
		Q11.3 FC	Q10.3 OS		
		Q11.2 FC	Q10.4 OS		
			Q3.3 SI		

Table (7.18) concludes that the factor analysis has revealed five factors of the main variables to have achieved factorial validity. As a result, the conceptual model will be revisited again to consider the new results. Thus, Effort Expectancy (EE) represents Factor 1. Hedonic Motivation and Facilitating Conditions (HM&FC) have combined as Factor 2. Furthermore, Social Influence and On-line Satisfaction (SI and OS) have combined as Factor 3, On-line Trust (OT) represents factor 4, and On-line Interactivity (OI) represents factor 5. It is significant to highlight the combined factors: (HM&FC) and (SI and OS) will be named as their original label in order to be aware of the effect of each construct specifically.

7.8 Regression Analysis for Factor Scores

The basic goal of regression analysis is to use data to analyse relationships (Allison, 1999; Kahane, 2008). In other words, it is used to analyse associative relationships between a dependent variable and one or more independent variables (Malhotra, 2008). Regression analysis also determines whether the independent variables explain a significant variation in the dependent variable and how much the variation in the dependent variable can be explained by the independent variables (Kahane, 2008).

7.8.1 Multiple Regression

The multiple regression is an extension of linear regression in which several independent variables, instead of just one, are combined to predict a value on a dependent variable for each subject (Tabachnick and Fidel, 2013). It is performed between more than one independent variable and one dependent variable. In this section, the researcher will test the significance of each one of the five factors that were extracted using the PCA. The result of regression is a generalisation of Equation No.6.1 that represents the best prediction of a dependent variable from several independent variables. The Regression Equation takes the following form:

$$Y = \beta_0 + \beta_1 f_1 + \beta_2 f_2 + \dots + \beta_k f_k + \epsilon$$

Where:

Y is the dependent variable

f_k represent different factors

β_0 is the intercept value (when all the factors are 0)

β_k represents the corresponding beta regression coefficient

ε is the random error and is called residual and is expressed as: $\varepsilon = Y - Y'$ where the Y' is the predicted value of the dependent variable (Berk, 2004).

The goal of regression is to arrive at the set of β values, which are called regression coefficients, for the factors that bring the Y values predicted from the equation as close as possible to the Y values obtained by measurement. The standardised Beta coefficient (β) gives a measure of the contribution of each variable to the model. Beta (β) indicates the relative importance of the associated f values (Shindler, 2008). The significance values give a rough indication of the impact of each predictor variable: a large absolute Beta value and $P < 0.05$ suggest a large impact on the dependent variable (Berk, 2004). From Table (7.19), it can be seen that Factor 1 and Factor 3 have had the largest exploratory power.

In general, five factors only contributed to explaining the intention to adopt B2C with statistical significance ($P < 0.05$). EE has made the largest contribution with positive standardised coefficient (beta value) ($\beta = 0.519$) followed by the SI and the OS ($\beta = 0.503$) while the OI has made the lowest contribution to explaining the intention to adopt B2C ($\beta = 0.101$). The HM and the FC contributed by ($\beta = 0.297$) and the OT contributed by ($\beta = 0.188$).

Table (7.19): Regression Correlation Matrix -- Coefficients^a						
<i>Model</i>	<i>Unstandardized Coefficients</i>		<i>Standardized Coefficients</i>	<i>t</i>	<i>p-value</i>	
	<i>B</i>	<i>Std. Error</i>	<i>Beta</i>			
1 (Constant)	3.807	.015		246.366	0.000	
1 Regr.Factor 1 (EE)	.333	.015	.519	21.560	.001	
1 Regr Factor 2 (HM&FC)	.191	.015	.297	12.346	.001	
1 Regr Factor 3 (SI&OS)	.323	.015	.503	20.894	.001	
1 Regr Factor 4 (OT)	.121	.015	.188	7.816	.001	
1 Regr Factor 5 (OI)	.065	.015	.101	4.206	.001	

Furthermore, Table (7.20), shows how much of variance in the adoption of B2C is explained by the factors and that this value measured by the coefficient of determination (R square, which can vary between 0 and 1), is a measure of the value of the proportion of the variance in the dependent variable “intention to adopt (B2C) e-commerce” that is accounted for by all the five factors. The higher its value, the better the prediction of the dependent variable (Field, 2013, Kahane, 2008). This means that if all the variation in B2C adoption can be explained by a variable, the coefficient of determination will be 1, if 50% of the variation can be explained, R square will be 0.5 and if none of the variation can be explained, the coefficient will be 0 (Saunders *et al.*, 2012).

Table (7.20): Total Variations: R²					
<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>	<i>Durbin-Watson</i>
1	.810 ^a	.656	.653	.37848	1.916

According to Table (7.20), it can be seen that 65.6% of the total variations in the dependent variable “intention to adopt (B2C) e-commerce” can be explained by five factors and this result was statistically significant ($P= 0.0001$). In addition to that, the adjusted R^2 shows how much variance in the dependent variable will be accounted for if the model had been derived from the population from which the sample was taken (Field, 2013). From Table (7.20), the adjusted R^2 is 0.653 (65.3%) which is close to the value of R^2 and the difference between them is 0.003(0.3%). This reduction means that if the model were derived from the population rather than a sample, it would account for approximately 0.3% less variance in the outcome.

The following Table (7.21) reports analysis of variance (ANOVA), which assesses the overall significance of the model, which further explains how much of the variance in the dependent variable “intention to adopt (B2C) e-commerce” is explained by the regression model. The ANOVA model is used to compare differences between several means as each group has its own mean and values that deviate from that mean. Similarly, all the data points from all of the groups produce an overall grand mean. The total deviation is the sum of the squared differences between each data point and the overall grand mean (Schindler, 2008). The researcher has tested the fit of the regression model with an ANOVA (*the F-test*), and it is a special case of linear regression (Field, 2013). In other words, the ANOVA is considered a way of comparing the ratio of systematic variance to unsystematic variance in an experimental study. The ratio of these variances is known as the *F-ratio* is a way to measure how well a regression model can predict an outcome compared to the error within that model (Field, 2013). For this

model, the F-ratio is 226.514, which is significant at $p < 0.05$ (As $P = 0.001$), therefore the regression model is significant (Field, 2013). This indicates that there is a relationship between the factor and the outcome.

Table (7.21): Regression ANOVA^a						
	<i>Model</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>p-value</i>
1	<i>Regression</i>	162.236	5	32.447	226.514	.001
	<i>Residual</i>	85.088	594	0.143		
	<i>Total</i>	247.323	599			

7.8.2 Hypothesis Testing for Factor Scores

The multiple regression enables the researcher to assess the strength of relationships between the dependent variable and one or more factors (Saunders, *et al*, 2012). Ten hypotheses were developed and their significance (represented as P-Value) will be tested using the multiple regression as presented in Table (7.22). The beta was already discussed earlier in this section.

Table (7.22): Hypothesis Testing		
Factors	Beta	P-value
Regr.Factor 1 (EE)	.519	0.001
Regr Factor 2 (HM&FC)	.297	0.001
Regr Factor 3 (SI&OS)	.503	0.001
Regr Factor 4 (OT)	.188	0.001
Regr Factor 5 (OI)	.101	0.001

For the first factor, the Effort Expectancy (EE), it is found to be significant ($p < 0.05 = 0.001$). Hence, the regression analysis of the effect of Effort Expectancy on

the intention to adopt B2C revealed that the effect is positive with $\beta = 0.519$. This means that as Effort Expectancy increased by one unit, intention to adopt B2C increases by 0.519 units. Based on this statistical data, H6 is therefore accepted.

For the second factor, Hedonic Motivation and Facilitating Conditions (HM&FC) are combined in one factor as it is found to be significant ($p < 0.05 = 0.001$). Hence, the regression analysis of the effect of the HM and FC on the intention to adopt B2C revealed that the effect is positive with $\beta = 0.297$. This means that as Hedonic Motivation and Facilitating Conditions increased by one unit, the intention to adopt B2C increases by 0.297 units. Based on this statistical data, H8 and H9 are therefore accepted.

Furthermore, factor three, which has combined Social Influence and On-line Satisfaction (SI&OS), is found to be significant ($\beta = 0.503$) ($p < 0.05 = 0.001$). This means that as Social Influence and On-line Satisfaction increased by one unit, the intention to adopt B2C increases by 0.503 units. Based on this statistical data, H1 and H7 are therefore accepted.

Moreover, factor four, which represents the On-line Trust (OT) is found to be significant ($\beta = 0.188$) ($p < 0.05 = 0.001$). This means that as On-line Trust increased by one unit, the intention to adopt B2C increases by 0.121 units. Based on this statistical data, H3 is therefore accepted.

For the last factor, which represents the On-line Interactivity (OI), is found to be significant ($\beta = 0.101$) ($p < 0.05 = 0.001$). This means that as On-line Interactivity

increased by one unit, the intention to adopt B2C increases by 0.101 units. Based on this statistical data, H2 is therefore accepted. In the next section, the moderating effect will be tested.

7.8.3 Independence of Residuals

The regression assumption was that the residuals were independent, therefore the Durbin-Watson test was required to prove that the assumption of independent error was acceptable. This test is used to examine the assumption of residual independence by verifying whether or not the adjacent residuals are correlated. The Durbin-Watson value can vary between 0 and 4. A value of 2 means that residuals are uncorrelated and the closer to 2 the value is, the better (Field, 2013). Table (7.23) shows a value of 1.916, implying that residuals were relatively uncorrelated and the assumption of independence had been met.

Table (7.23): Testing Independence of Residuals					
<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>	<i>Durbin-Watson Test</i>
1	.810 ^a	.656	.653	.37848	1.916

7.9 Testing the Moderating Effect

After running the factor analysis and using multiple regression to test the factor scores, the moderating effect of age, gender and experience will be tested in this section to achieve the third objective of this study, which investigates the moderating effect

among the established factors [effort expectancy (EE); Hedonic Motivation (HM) and Facilitating Conditions (FC); and Social Influence (SI)].

7.9.1 The Moderating Effect of Gender

According to the H11A-C, the respondent's gender will moderate the relationship between established factors (EE, HM and FC, and SI) and intention to adopt the B2C. To test this prediction, the male gender was given the value 0 and the female gender the value 1, then interaction variables were created by multiplying the independent variables by the gender variable. Next, three separate hierarchal multiple regression analyses were performed to test the hypothesised moderating role of gender. The results are illustrated in Table (7.24).

Table (7.24): Hierarchal regression, testing the moderating effect of Gender on the established factors					
Hypothesis	Dependent variable "intention to use (B2C) e-commerce"	R²	ΔR²	ΔF	Sig. ΔF
H11 _A	EE	0.269	0.269	220.298	0.000
	Gender	0.270	0.001	0.964	0.327
	EE x Gender	0.270	0.00	0.596	0.813
H11 _b	HM and FC	0.088	0.088	57.9	0.000
	Gender	0.008	0.08	0.079	0.778
	HM and FC x Gender	0.091	0.011	1.392	0.239
H11 _c	SI	0.253	0.253	202.368	0.000
	Gender	0.253	0.00	0.004	0.950
	SI x Gender	0.255	0.002	1.6777	0.196

H11A: The effect of Effort Expectancy (EE) on intention to adopt B2C is moderated by gender.

According to Table (7.24), the inclusion of EE accounted for 26.9% of variance which was statistically significant ($F= 220.298, P<0.05=0.001$). In the next step of hierarchal regression, the dummy variable (gender) was added and this changed R^2 from 0.269 to 0.270 which was non-significant increase ($F=0.964, P>0.05=0.327$). The last step on the regression showed that when the interaction effect was entered, R^2 did not change and it was insignificance ($F=0.596, P>0.05=0.813$). Accordingly, the respondent's gender appears not to have moderated the relationship between EE and intention to adopt B2C. Therefore, Hypothesis 11A was rejected.

H11B: The effect of Hedonic Motivation and Facilitating Conditions (HM and FC) on intention to adopt B2C is moderated by gender.

According to Table (7.24), the presence of HM and FC accounted for 8.8% of variance which was statistically significant ($F= 57.9, P<0.05=0.001$). In the next step of hierarchal regression, the dummy variable (gender) was added and this changed R^2 from 0.088 to 0.008, which was insignificant decrease ($F=0.079, P>0.05=0.778$). The last step on the regression showed that when the interaction effect was entered, R^2 changed from 0.008 to 0.091 and it was insignificance ($F=1.392, P>0.05=0.239$). Accordingly, respondent's gender appears not to have moderated the relationship between HM and FC, and intention to adopt B2C. Therefore, Hypothesis 11B was rejected.

H11c: The effect of Social Influence (SI) on intention to adopt (B2C) is moderated by gender.

According to Table (7.24), the presence of SI accounted for 25.3% of variance which was statistically significant ($F=202.638, P<0.05=0.001$). In the next step of hierarchical regression, the dummy variable (gender) was added and R^2 didn't change and which was insignificant ($F=0.004, P>0.05=0.950$). The last step on the regression showed that when the interaction effect was entered, R^2 changed from 0.253 to 0.255 and it was not significant ($F=1.67, P>0.05=0.196$). Accordingly, the respondent's gender appears not to have moderated the relationship between SI and intention to adopt B2C. Therefore, Hypothesis 11c was rejected.

7.9.2 The Moderating Effect of Age

According to H12A-C, the respondent's age will moderate the relationship between the established factors (EE, HM and FC, and SI) and intention to adopt B2C. To test this hypothesis, the respondents were divided into two groups (young: 39 and younger and, old: 40 and older). The variable was given the value 1 for the young respondents and 0 for the old ones. Interaction variables were created by multiplying the independent variables (factors) by the age variable. Next, three separate hierarchical multiple regression analyses were performed to test the hypothesised moderating role of age. The results are illustrated in Table (7.25).

Table (7.25): Hierarchical regression, testing the moderating effect of age group on the established factors					
Hypothesis	Dependent variable “intention to adopt (B2C) e-commerce”	R ²	ΔR ²	ΔF	Sig. ΔF
H12 _A	EE	0.269	0.269	220.298	0.000
	Age	0.276	0.007	5.383	0.021
	EE x Age	0.277	0.001	0.859	0.355
H12 _b	HM and FC	0.088	0.088	57.90	0.000
	Age	0.096	0.008	5.025	0.025
	HM and FC x Age	0.096	0.000	0.021	0.884
H12 _c	SI	0.253	0.253	202.368	0.000
	Age	0.262	0.009	7.168	0.008
	SI x Age	0.263	0.002	1.405	0.236

H12A: The effect of Effort Expectancy (EE) on intention to adopt (B2C) is moderated by Age.

According to Table (7.25), the EE inclusion into the regression accounted for 26.9% of the variance in intention to adopt, which was statistically significant ($F=220.298$, $P<0.05=0.001$). Then, the dummy variable, Age, was added and this increased R^2 from 0.269 to 0.276 which was statistically significant ($F=5.383$, $P<0.05=0.021$). The final step in the regression method revealed that when the interaction effect was added to the regression, R^2 changed from 0.276 to 0.277, which was a minimal increase. This didn't achieve any significance ($F=0.859$, $P.>0.05= 0.355$). This suggests that age didn't moderate the effect of EE on intention to adopt B2C. Accordingly, H12A was rejected.

H12B: The effect of Hedonic Motivation and Facilitating Conditions (HM and FC) on intention to adopt B2C is moderated by Age.

Table (7.25) shows that the presence of HM and FC into the regression accounted for 8.8% only of the variance in the intention to adopt, which was statistically significant

($F=57.90$, $P < 0.05 = 0.001$). Next, the dummy variable, Age, was entered and this increased R^2 from 0.088 to 0.096 and was significant ($F= 5.025$, $P < 0.05 = 0.025$). In the final step, when the interaction effect was added to the regression, R^2 didn't change and was not significant ($F=0.021$, $P > 0.05 = 0.884$). Hence, the respondents' age didn't moderate the effect of HM and FC on intention to adopt B2C. Therefore, H12B was rejected.

H12c: The effect of social effect (SI) on intention to adopt (B2C) is moderated by Age.

From Table (7.25), the SI inclusion into the regression accounted for 25.3% of variance in intention to adopt B2C, which was statistically significance ($F= 202.638$, $P < 0.05 = 0.001$). At the next step of the hierarchical regression, the dummy variable, Age, was added, changing R^2 from 0.253 to 0.262 which was significant ($F= 7.168$, $P < 0.05 = 0.008$). In the final step, when the interaction effect was added to the regression, R^2 changed insignificantly from 0.262 to 0.263 ($F= 1.405$, $P > 0.05 = 0.236$). Therefore, the respondents' age didn't moderate the effect of SI on intention to adopt B2C. Thus, H12C must be rejected.

7.9.3 The Moderating Effect of Experience

According to H13A-C, the respondent's experience will moderate the relationship between established factors (EE, HM and FC, and SI) and intention to adopt B2C. To test this hypothesis, the respondents were divided into two groups of respondents (low experience and high experience). The variable was given the value 1 for those with high experienced and 0 for those with low experienced. Interaction variables were

created by multiplying the independent variables (factors) by the experience variable. Next, three separate hierarchal multiple regression analyses were made to test the hypothesised moderating role of experience. The results are illustrated in Table (7.26).

Table (7.26): Hierarchal regression, testing the moderating effect of experience on the established factors					
Hypothesis	Dependent variable “intention to adopt (B2C) e-commerce”	R²	ΔR²	ΔF	Sig. ΔF
H13 _A	EE	0.269	0.269	220.298	0.000
	experience	0.281	0.012	10.161	0.002
	EE x experience	0.282	0.001	0.841	0.360
H13 _b	HM and FC	0.088	0.088	57.90	0.000
	experience	0.096	0.008	5.006	0.026
	HM and FC x experience	0.099	0.003	2.271	0.137
H13 _c	SI	0.253	0.253	202.368	0.000
	experience	0.259	0.006	4.673	0.031
	SI x experience	0.259	0.000	0.175	0.676

H13A: The effect of Effort Expectancy (EE) on intention to adopt (B2C) is moderated by experience.

According to Table (7.26), the EE inclusion into the regression accounted for 26.9% of the variance in intention to adopt B2C, which was statistically significant (F=220.298, P<0.05=0.001). Then, the dummy variable, Experience, was added and this increased R² from 0.269 to 0.281 which was statistically significant (F=10.161, P<0.05=0.002). The final step in the regression method revealed that when the interaction effect was added to the regression, R² changed from 0.281 to 0.282 which recorded a minimal increase. This did not achieve any significance (F=0.841, P>0.05= 0.360). This suggests that experience didn't moderate the effect of EE on intention to adopt B2C. Accordingly, H13A was rejected.

H13B: The effect of Hedonic Motivation and Facilitating Conditions (HM and FC) on intention to adopt (B2C) is moderated by experience.

Table (7.26) shows that the presence of HM and FC into the regression accounted for 8.8% only of the variance in the intention to adopt B2C, which was statistically significant ($F=57.90$, $P < 0.05 = 0.001$). Next, the dummy variable, Experience, was entered and this increased R^2 from 0.088 to 0.096 and was significant ($F= 5.006$, $P < 0.05 = 0.026$). In the final step, when interaction effect was added to the regression, R^2 increased from 0.096 to 0.099 and this was insignificant ($F=2.271$, $P > 0.05 = 0.137$). Hence, the respondents' experience did not moderate the effect of HM and FC on intention to adopt B2C. Therefore, H13B was rejected

H13c: The effect of Social Influence (SI) on intention to adopt (B2C) is moderated by experience.

From Table (7.26), the SI inclusion into the regression accounted for 25.3% of variance in intention to adopt B2C, which was statistically significance ($F= 202.638$, $P < 0.05 = 0.001$). At the next step of the hierarchical regression, the dummy variable, Experience, was added, changing R^2 from 0.253 to 0.259 which was significant ($F= 4.673$, $P < 0.05 = 0.031$). In the final step, when the interaction effect was added to the regression, R^2 didn't change and was insignificant ($F=0.175$, $P > 0.05 = 0.676$). Therefore, the respondents' experience did not moderate the effect of SI on intention to adopt B2C. Thus, H13c must be rejected.

7.10 Chapter Summary

This study aims to investigate the major factors that affect the intention to adopt (B2C) e-commerce in Egypt and to develop a model that can be used to identify the factors affecting the adoption of B2C in Egypt. The researcher has investigated the latter scope through developing three major objectives and sixteen hypotheses. The model was tested using the PCA and five factors were identified, suggesting that the five factors: Effort Expectancy (EE) as Factor One; Hedonic Motivation and Facilitating Conditions (HM&FC) have been combined as Factor Two; Social Influence and On-line Satisfaction (SI&OS) have been combined as Factor Three; On-line Trust (OT) as Factor Four; On-line Interactivity (OI) as Factor Five. Each factor has an impact on the intention to adopt (B2C) e-commerce.

The results of multiple regression shown in the five factors were that Effort Expectancy (EE) addressing H6, Hedonic Motivation and Facilitating Conditions (HM&FC) addressing H8 and H9, Social Influence and On-line Satisfaction (SI&OS) addressing H1 and H7, On-line Trust (OT) addressing H3 and On-line Interactivity (OI) addressing H2 were the most influential factors explaining the intention to adopt B2C in Egypt as shown in Table (7.27). Moreover, it was observed that R^2 is only 65.6% which means the remaining 34.4% can be explained by other factors that were not mentioned in this study such as perceived risk, price value, and language and cultural barriers. Moreover, the hypotheses concerning the moderating effects (gender, age and experience) were tested to explain their effect on the relationship between the established factors (EE,

HM and FC and SI) and intention to adopt B2C. The results have indicated that none of these factors has significantly moderated the relationship.

Accordingly, Chapter Eight will thoroughly discuss the implications of these results, which will inevitably lead to the modification of the research conceptual model in accordance with the new findings.

Table (7.27): Summary of the results			
Hypothesis No.	Variables	Hypothesis	Decision
H1	On-line Satisfaction	On-line Satisfaction affects Egyptian consumer's intention to adopt B2C e-commerce.	Significant
H2	On-line Interactivity	On-line Interactivity affects Egyptian consumer's intention to adopt B2C e-commerce	Significant
H3	On-line Trust	On-line Trust affects Egyptian consumer's intention to adopt B2C e-commerce.	Significant
H4	On-line Security	On-line Security affects Egyptian consumer's intention to adopt B2C e-commerce	Insignificant
H5	Performance Expectancy	Performance expectancy (PE) affects Egyptian consumer's intention to adopt B2C e-commerce.	Insignificant
H6	Effort Expectancy	Effort expectancy (EE) affects Egyptian consumers' intention to adopt B2C e-commerce.	Significant
H7	Social Influence	Social influence (SI) affects Egyptian consumer's intention to adopt B2C e-commerce.	Significant
H8	Hedonic motivation	Hedonic motivation affects Egyptian consumer's intention to adopt B2C e-commerce.	Significant
H9	Facilitating conditions	Facilitating conditions affect the Egyptian consumer's intention to adopt B2C e-commerce.	Significant
H10	Habit	Habit affects Egyptian consumer's intention to adopt B2C e-commerce	Insignificant

Table (7.27): Summary of the results (Continued)

Hypothesis No.	Variables	Hypothesis	Decision
H11A	Moderating	The effect of Effort Expectancy (EE) on intention to adopt (B2C) is moderated by gender.	Insignificant
H11B	Moderating	The effect of Hedonic Motivation and Facilitating Conditions (HM and FC) on intention to adopt (B2C) is moderated by gender	Insignificant
H11C	Moderating	The effect of Social Influence (SI) on intention to adopt (B2C) is moderated by gender.	Insignificant
H12A	Moderating	The effect of Effort Expectancy (EE) on intention to adopt (B2C) is moderated by Age.	Insignificant
H12B	Moderating	The effect of Hedonic Motivation and Facilitating Conditions (HM and FC) on intention to adopt (B2C) is moderated by Age.	Insignificant
H12C	Moderating	The effect of Social Influence (SI) on intention to adopt (B2C) is moderated by Age.	Insignificant
H13A	Moderating	The effect of Effort Expectancy (EE) on intention to adopt (B2C) is moderated by experience.	Insignificant
H13B	Moderating	The effect of Hedonic Motivation and Facilitating Conditions (HM and FC) on intention to adopt (B2C) is moderated by experience.	Insignificant
H13C	Moderating	The effect of Social Influence (SI) on intention to adopt (B2C) is moderated by experience.	Insignificant

CHAPTER EIGHT

DISCUSSION

8.1 Introduction

This research aims at investigating the major factors that affect the intention to adopt B2C e-commerce in Egypt. It also aims to develop a model that can be used to identify the factors affecting the B2C adoption in Egypt. Data was collected from 600 Egyptian consumers. The major factors for consumers qualifying for the research sample were that the respondents had to be Egyptians, who had purchased a commodity through an on-line merchant at least once.

The research aimed at achieving the following three objectives:

- [1] Assessing the major factors that affect the intention for Egyptians to adopt B2C e-commerce;
- [2] Developing an e-commerce adoption model for Egyptian consumers by investigating the factors affecting the adoption of B2C in Egypt; and
- [3] Investigating the moderating effect of age, gender and experience between Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), Facilitating Conditions (FCs), Habit (HT) and the Behavioural Intention to adopt B2C.

This chapter presents a discussion on the key findings as a result of the statistical analysis that was carried out in the previous chapter. The discussion highlights the

results of hypotheses tests, and the outcomes of the research objectives and research questions in addition to the implications of this study.

8.2 Discussion of Key Findings

As noted before, this research has developed the extended Unified Theory of Acceptance and Use Technology (UTAUT2) model. Therefore, a set of hypotheses related to the new factors has been added to the original theory to investigate their effect on the intention of the Egyptians to adopt B2C. These new factors are the On-line Satisfaction (OS); the On-line Interactivity (OI); the On-line Trust (OT); and the On-line Security (OS). The original factors were represented in the Performance Expectancy (PE); the Effort Expectancy (EE); the Social Influence (SI); the Hedonic Motivation (HM); the Facilitating Conditions (FC), and the Habit (HT) with the moderation effect of gender, age and experience for all original constructs except for the Performance Expectancy (PE), which was only moderated by age and gender.

The ten constructs generate the structure of the research model. Thirty eight measurement items, which constituted the research survey, were adopted from the literature to measure the main research constructs (*Please refer to Table 6.6 in Chapter Six*). After conducting the factor analysis on the research data to examine the relationships among the sets of many variables, results of the factor analysis revealed that seven of the main constructs had confirmed factorial validity. For elaboration, as Table (8.1) shows, some constructs were combined into one factor and other constructs remained as they were:

- The Effort Expectancy (EE) remained as one factor;
- The Hedonic Motivation and Facilitating Conditions were combined in one factor (HM & FC);
- The Social Influence and On-line Satisfaction were combined in one factor (SI & OS);
- The On-line Trust (OT) remained as it is; and the
- On-line Interactivity (OI) remained as it is.

Table (8.1): Hypothesis Testing		
Factors	Beta	<i>P-value</i>
(EE)	.519	(P-value < 0.001)
(HM&FC)	.297	(P-value < 0.001)
(SI&OS)	.503	(P-value < 0.001)
(OT)	.188	(P-value < 0.001)
(OI)	.101	(P-value < 0.001)

It is worth mentioning that research results showed that the Social Influence and On-line Satisfaction constructs were combined in one factor (SI & OS); in fact, the association between the two constructs is justified because if Egyptian consumers are satisfied about on-line purchasing, they will be able to influence the purchase intentions of others.

In addition, Hedonic Motivation and Facilitating Conditions constructs were combined in one factor (HM & FC), which can be justified because when the resources and support is available to Egyptian consumers during the on-line shopping process, they will enjoy the process and feel that fun or pleasure is derived from using the technology.

Hypotheses One, Two, Three, Six, Seven, Eight and Nine have been confirmed. In other words, Effort Expectancy, Hedonic Motivation and Facilitating Conditions, Social Influence, On-line Trust, On-line Satisfaction and On-line Interactivity were found to have an effect on Egyptian consumers' intention to adopt (B2C) e-commerce

in Egypt. Furthermore, hypotheses Four, Five and Ten were rejected as Performance Expectancy, On-line Security and Habit were found to have no effect on Egyptian consumers' intention to adopt e-commerce due to factor analysis. Results of the hierarchal regression showed that the moderating variables of gender, age and experience had no effect on the established factors (Effort Expectancy, Hedonic Motivation and Facilitating Conditions and Social Influence).

Table (8.2) presents a summary of the research hypotheses and the test results that have been obtained from the analysis of the data. As the Table (8.2) illustrates, seven hypotheses were confirmed by empirical tests, including (H1, H2, H3, H6, H7, H8, and H9). Twelve hypotheses were not confirmed (H4, H5, H10, H11a, H11b, H11c, H12A, H12B, H12C, H13A, H13B, and H13C).

Table (8.2): Summary of the Research Hypotheses	
Hypothesis	Results
H1: On-line Satisfaction affects Egyptian consumer's intention to adopt B2C e-commerce.	Significant
H2: On-line Interactivity affects Egyptian consumer's intention to adopt B2C e-commerce.	Significant
H3: On-line Trust affects Egyptian consumer's intention to adopt B2C e-commerce.	Significant
H4: On-line Security affects Egyptian consumer's intention to adopt B2C e-commerce.	Insignificant
H5: Performance Expectancy (PE) affects Egyptian consumer's intention to adopt B2C e-commerce.	Insignificant
H6: Effort Expectancy (EE) affects Egyptian consumer's intention to adopt B2C e-commerce.	Significant
H7: Social Influence (SI) affects Egyptian consumer's intention to adopt B2C e-commerce.	Significant

Table (8.2): Summary of the Research Hypotheses (Continued)	
Hypothesis	Results
H8: Hedonic Motivation affects Egyptian consumer's intention to adopt B2C e-commerce.	Significant
H9: Facilitating Conditions affect Egyptian consumer's intention to adopt B2C e-commerce.	Significant
H10: Habit affects Egyptian consumer's intention to adopt B2C e-commerce.	Insignificant
H11A: The effect of Effort Expectancy (EE) on intention to adopt B2C is moderated by gender	Insignificant
H11B: The effect of Hedonic Motivation and Facilitating Conditions (HM & FC) on intention to adopt B2C is moderated by gender.	Insignificant
H11C: The effect of Social Influence (SI) on intention to adopt B2C is moderated by gender.	Insignificant
H12A: The effect of Effort Expectancy (EE) on intention to adopt B2C is moderated by age.	Insignificant
H12B: The effect of Hedonic Motivation and Facilitating Conditions (HM & FC) on intention to adopt B2C is moderated by Age.	Insignificant
H12C: The effect of Social Influence (SI) on intention to adopt B2C is moderated by age.	Insignificant
H13A: The effect of Effort Expectancy (EE) on intention to adopt B2C is moderated by experience.	Insignificant
H13B: The effect of Hedonic Motivation and Facilitating Conditions (HM & FC) on intention to adopt B2C is moderated by experience.	Insignificant
H13C: The effect of Social Influence (SI) on intention to adopt B2C is moderated by experience.	Insignificant

8.3 Intention to Adopt B2C E-commerce

Intention to adopt e-commerce is defined as the intention to buy on-line as a result of consumer's prior experience in on-line buying (Karahanna *et al.*, 1999; Vijayasarathy,

2004; Yahya *et al.*, 2012). Four indicators were used to measure the intention to adopt B2C. These indicators were adopted by Venketch (2012) and were used by most studies that applied the UTAUT2 (Rodriguez *et al.*, 2014).

Table (8.3) indicates that the intention to adopt B2C in Egypt was relatively high. The ‘mean’ represents respondents’ evaluations to individual questions with relation to the intention to adopt e-commerce. In order to determine the level of intention by respondents, the mean of both constructs was calculated (3.8) as illustrated in Table (8.3). When this is considered within the context of the five-point Likert Scale, it reflects that it is within the high level as it is towards the end of (3) points scale (Malhotra *et al.*, 2013), which means that there is a positive level of intention to adopt B2C among Egyptian consumers.

Table (8.3): Mean Scores for Research Constructs		
Construct	Mean	Results
Intention to adopt B2C	3.8	High
Social Influence	3.9	High
Effort Expectancy	3.6	High
Performance Expectancy	3.6	High
On-line Trust	3.9	High
On-line Security	3.7	High
Hedonic Motivation	2.1	Low
On-line Interactivity	2.2	Low
On-line Satisfaction	3.8	High
Facilitating Conditions	3.8	High
Habit	3.7	High

The high positive level of intention to adopt B2C e-commerce among Egyptian consumers as shown in Table (8.3) promises a potential opportunity to bolster

economic growth and development as indicated in Chapter Two of this study, Egypt is one of the Arab region’s largest markets (PayFort Report, 2014). For elaboration, B2C e-commerce provides developing countries with the elimination of time and space limits, an increase in purchase rates, an easy access to information, a significant reduction of transaction costs and a short time frame of duration transactions (Dehkordi *et al.*, 2011). The following section shows the factors that affect the intention to adopt B2C in Egypt to discuss their implications subsequently.

8.4 Factors Affecting Intention to Adopt B2C E-commerce

This section discusses the empirically tested factors that have been found to affect Egypt’s adoption of B2C. Table (8.4) shows that Beta coefficients are the standardised regression coefficients. Their relative absolute magnitudes reflect their importance in predicting the respondent’s intention to adopt B2C. Effort Expectancy (EE) is shown to be much more important than other independent factors. Social influence (SI) and On-line Satisfaction (OS) (ranked second) followed by Hedonic Motivation and Facilitating Conditions (HM & FC), On-line Trust (OT), and On-line Interactivity (OI).

Table (8.4): The Important Variables Affecting the adoption of B2C		
Rank	Factors	Beta Value
1	Effort Expectancy (EE);	.519
2	Social Influence and On-line Satisfaction (SI & OS)	.503
3	Hedonic Motivation and Facilitating Conditions (HM & FC);	.297
4	On-line Trust (OT);	.188
5	On-line Interactivity (OI)	.101

8.4.1 On-line Satisfaction (OS)

Hypothesis H1 posited that On-line Satisfaction (OS) affects the Egyptian consumer's intention to adopt B2C e-commerce. The OS factor is referred to as the interior state of the customer's feelings about past on-line purchases and experiences of e-shopping (Grace, 2009).

The results of this study provide empirical evidence pertaining to the relationship between on-line customer satisfaction and Egyptian consumers' adoption of B2C. According to the results of this study, the OS factor has a positive effect on the Egyptian consumers' intention to adopt e-commerce, now that results have shown a P-value (0.000) and Beta value (0.503). It is worth mentioning that the results of factor analysis combined this construct with the Social Influence (SI) construct.

This finding is supported by some recent empirical studies, which stressed that satisfaction has great influence of willingness to buy on-line (Li and Lio, 2014; Yeh and Li, 2014).

To some extent, this result can be interpreted to show that the Egyptians e-sellers should pay sufficient attention to their quality of service, after sale services, delivery, and clearly specify their on-line policy in terms of refund or exchange, which in this study, have all proven to positively affect the Egyptian consumer's intention to adopt e-commerce.

8.4.2 On-line Interactivity (OI)

Hypothesis H2 posited that On-line Interactivity (OI) affects Egyptian consumer's intention to adopt e-commerce. The OI factor has been referred to as how well the intended users can interact with a technology to carry out the assigned activity (Chou and Hsiao, 2007; Zimmerman and Muraski, 1995). The result of the study has indicated a positive effect on the Egyptian consumers' intention to adopt e-commerce as it showed a P-value (0.000) and Beta value (0.101). It has been noted in recent research studies that one of the most challenging issues in e-commerce is the OI because consumers usually seek on-line support and on-line advice through assistive web applications such as on-line shopping assistants, decision support systems, recommendation agents, or avatars (Zollet, 2014).

Furthermore, previous studies showed that a high level of On-line Interactivity of a website results in customer enjoyment, satisfaction and increases intention to purchase on-line (Kim and Fiore, 2007; Garrity *et al.*, 2005). The interactivity of the website positively influences the customers' overall satisfaction through their involvement, and it also helps customer decision-making by providing them with information through quality communications (Hennig-Thurau and Walsh, 2003). In addition, the outcomes of this study are further consistent with previous research results (Nepomuceno *et al.*, 2014; Laroche, 2010), which indicated that consumers' OI positively affects their adoption of B2C.

According to the results of this study, searching easily through the on-line store, selecting how information is presented, changing images and responding efficiently to

the consumers' on-line inquiries are among the many determining factors of the on-line vendor's ability to interact with customers.

8.4.3 On-line Trust (OT)

The On-line Trust (OT) is defined as the customers' intention to accept the belief that transactions with a seller will meet their expectations (Lemuria Carter 2008; Pavlou, 2007). Hypothesis H3 postulated that there would be a positive relationship between trust and the Egyptian consumers' intention to adopt B2C e-commerce. The results of this study indicated support for this hypothesis as it showed a P-value (0.000) and Beta value (0.188). This is unlike other factors in this study which indicated a high level of support such as (EE) (0.519), and (SI & OS) (0.503).

The findings of this study are consistent with many previous research (Rodriguez and Trujillo, 2014; Shukla, 2014; Vos *et al.*, 2014; Yu *et al.*, 2014). Research results suggest that trust appears high among the antecedents of on-line purchasing. Accordingly, it is expected that the on-line consumers tend to increase their B2C adoption when the on-line vendors are perceived as trustworthy. Perceived OT leads consumers to be willing to believe that the on-line vendors are able to provide them with the services offered (Han-Wu, 2010).

Researchers suggest that trust is a mechanism that mitigates the uncertainty of the on-line transaction and thus facilitates the customers' intention to engage in an on-line exchange relationship (Pavlou *et al.*, 2007; Qureshi *et al.*, 2009). Many studies have also argued that satisfaction is a strong predictor of trust (Casaló *et al.*, 2010, 2011;

Shin *et al.*, 2013). Thus, trust is proposed to be the antecedent of repetitive purchase intentions and satisfaction will promote the development of the customers' trust in sellers (Chiu *et al.*, 2012). This further supports the results of this study, which has indicated that On-line Satisfaction positively affects the B2C adoption among the Egyptian consumers.

8.4.4 On-line Security (OSY)

Hypothesis H4 posited that On-line Security (OSY) affects the Egyptian consumer's intention to adopt B2C e-commerce. The OSY factor means the individuals' right to protect their access and control their personal information with respect to its collection, use and transfer over the Internet (Alharbi *et al.*, 2013). The result of this study indicated that there was no support for this hypothesis. In other words, the result of this hypothesis indicated no significance as it was excluded due to the results obtained from factor analysis which contradicted with many previous research papers about OSY because the majority of them showed a positive relationship between the OSY and the adoption of B2C (Forsythe and Shi, 2003; Ladhari, 2010; Miyazaki and Fernandez, 2001; Ratnasingam, 2006; Runyan *et al.*, 2008; Shah *et al.*, 2014).

The results of this study contradict with previous findings (Carter *et al.*, 2011; Hartono *et al.*, 2014; Shah *et al.*, 2014), which stressed that in high uncertainty avoidance cultures such as Egypt (Hofstede *et al.*, 2010), the security issues were crucial, especially on-line, where there was no personal interaction between the buyer and the seller. The high level of uncertainty avoidance is one of the main reasons for the

resistance to on-line shopping in the Middle East and Egypt (Hasan and Ditsa, 1999). Consumers will not buy goods and services on-line if personal and financial information cannot be securely guaranteed (Liu and Arnett, 2000). Although there is no previous empirical research about B2C e-commerce in Egypt, the result of this aspect can be interpreted due to the fact that B2C is still in its introductory phase in the Egyptian market, and the consumers are still looking for the initial trust as an important component, especially that the research findings of this study have indicated that trust affects Egyptians' adoption of B2C.

Moreover, this result can be justified in light of the argument that highlights that perceived On-line Security along with the perceived privacy and information quality are predictors to the trust factor (Rodríguez and Trujillo, 2014). In addition, there have been many studies in which the positive influence of On-line Security on trust has been found (Kim, D. *et al.*, 2008; Kim *et al.*, 2011; Flavian and Cuinaliu, 2006; Yousafzai *et al.*, 2003) confirmed the effect of On-line Security on trust. Further, because this study showed a positive relationship between trust and the Egyptian consumers' intention to adopt e-commerce, it can be argued that the Egyptian consumers need to trust the on-line vendor as a first step or a pre-requisite before confirming their sense of security, which is due to the fact that B2C is still in its introductory phase in Egypt.

8.4.5 Performance Expectancy (PE)

Hypothesis H5 posited that the Performance Expectancy (PE) affects the Egyptian consumer's intention to adopt e-commerce. The result of this study indicated that there was no support for this hypothesis. The result of this hypothesis indicated no

significance as it was excluded due to the results of factor analysis which contradicted with many previous research (Miguel *et al.*, 2015; Rodríguez, 2014; Rodríguez and Trujillo, 2013). The PE has been referred to as the degree to which an individual believes that on-line purchasing will be more useful than the traditional purchase methods (Cagla Ozen Seneler, 2009; Yahya *et al.*, 2012). According to the result of this study, the PE factor showed no support for the hypothesis as the adoption of B2C among the Egyptians did not depend on the PE. The result implies that the Egyptian consumers tend to believe that traditional shopping is more useful than on-line purchasing. This is an important factor for marketers and on-line vendors/managers as they should launch systematic marketing campaigns for promoting the benefits of on-line purchasing among potential Egyptian consumers. The result of this study contradicts with Venketch (2012), who stressed that PE factor had an effect on the adoption process, which could be justified with the fact that B2C is still in its introductory stages in Egypt, and Egyptian consumers were afraid to replace the traditional shopping with it.

8.4.6 Effort Expectancy (EE)

Hypothesis H6 posited that the Effort Expectancy (EE) factor affects the Egyptian consumer's intention to adopt e-commerce. The result of the study indicates a positive effect on Egyptian consumers' intention to adopt e-commerce as it has shown a P-value (0.000) and Beta value (0.519). The EE has been identified as the degree of ease that is associated with the use of the system (Venkatesh *et al.*, 2003). The findings of this study indicated consistency with Venketch's results (2012) and other research papers

that have integrated UTAUT2 framework (Abu Shanab and Pearson, 2007), and holds a significant recommendation to marketers, which will be discussed in detail in Chapter Nine of this study.

8.4.7 Social Influence (SI)

Hypothesis H7 posited that the Social Influence (SI) factor affects the Egyptian consumer's intention to adopt B2C e-commerce. The result of the study indicates a positive effect on Egyptian consumers' intention to adopt e-commerce as it has shown a P-value (0.000) and Beta value (0.503). The SI factor has been identified as the influences of others on purchase intentions (Charles Dennis, 2007; Rohm and Swaminathan, 2004), which is in line with Hofstede's classification to Egypt as a collectivist society (Hofstede, 1994). Collectivist cultures are characterised by trust and loyalty as evidenced by the appearance of strong/close groups effect (Hofstede, 1980; 1983; 1994), while the individualism dimension refers to the extent to which individual self-interest is prioritised over the concerns of the group (McCoy *et al.*, 2005). In collectivist countries, people are more dependent on groups as well as on power figures than on individuals while making their decisions including the purchasing decisions (Hofstede, 1994), which can be argued to be in line with the results of this study, which posited that Social Influence (SI) factor affects the Egyptian consumer's intention to adopt B2C e-commerce.

It is worth mentioning that the results of factor analysis have combined this construct with the On-line Satisfaction construct.

The results of this study have shown a positive effect on the Egyptian consumers' intention to adopt B2C, which is consistent with the original UTAUT2 model. The implications of this construct are very important to marketers. They will be discussed in the Implications Section later on in this chapter. The e-word of mouth "e-WOM" refers to potential, current or future consumers commenting positively or negatively on a store or product on-line (Cheng and Huang, 2013: 87). A positive e-WOM supports the behaviour of on-line purchasing process or the product itself (Picazo-Vela *et al.*, 2010).

8.4.8 Hedonic Motivation (HM)

Hypothesis H8 posited that Hedonic Motivation (HM) factor affects the Egyptian consumer's intention to adopt B2C. The HM is defined as the fun or pleasure that is derived from using a technology. It is worth mentioning that the results of factor analysis have combined this construct with the Facilitating Conditions (FC) construct.

It has been proven that HM plays an important role in determining technology acceptance and use (Brown and Venkatesh 2005; Venkatesh, 2012). The findings of this study have shown a positive effect on the Egyptian consumers' intention to adopt e-commerce as it has showed a P-value (0.000) and Beta value (0.297). The results were consistent with the UTAUT2 model and other previous studies (Cheema *et al.*, 2013; Lu and Hsu, 2004; Thong *et al.*, 2006).

Although the results of this study contradict with the outcome of other research studies that proven that there is no effect of HM on online-shopping (Bridges and Florsheim, 2008), Consumers, who exhibit a high degree of pleasure while shopping on-line spend

longer visiting times and are more likely to choose the same stores for re-purchases (De Wulf *et al.*, 2006; Novak *et al.*, 2000). Furthermore, consumers often switch brands or on-line vendors due to the lack of hedonic value despite being highly satisfied with utilitarian needs such as quality products and fair prices (Liu and Forsythe, 2011). The extent to which a retail website evokes hedonic feelings impacts the on-line consumers' shopping experiences (Childers *et al.*, 2001). Furthermore, the on-line shopping enjoyment increases the likelihood for consumers to buy experiential products on-line such as ready-to-wear clothes (Fiore *et al.*, 2005; Kim *et al.*, 2007). This suggests that the hedonic performance of the on-line channel increases the on-line purchase intensity, which further supports the findings of this study that have shown a positive effect of HM on the Egyptian consumers' intention to adopt e-commerce.

8.4.9 Facilitating Conditions (FC)

Hypothesis H9 posited that the Facilitating Conditions (FC) factor affects the Egyptian consumer's intention to adopt B2C. The FC factor have been identified as the consumers' perceptions of the resources and support available to perform a behaviour (Brown and Venkatesh 2005; Venkatesh *et al.*, 2003). It is worth mentioning that the results of factor analysis have combined this construct with the HM construct.

The results of this study have shown a positive effect on the Egyptian consumers' intention to adopt e-commerce as it revealed a P-value (0.000) and Beta value (0.297). The results were consistent with the UTAUT2 model. Other empirical studies confirmed that the FC directly affect the users' adoption (Martin and Herrero, 2012; Rodríguez and Trujillo, 2014; Zhou, Lu and Wang, 2010).

8.4.10 Habit (HT)

Hypothesis H10 proposed that Habit (HT) affects the Egyptian consumer's intention to adopt B2C. Habit has been defined as "the extent to which people tend to perform a set of behaviours automatically because of learning due to prior behaviour" (Venkatesh *et al.*, 2012: 161). The results of this study did not show a positive effect on the Egyptian consumers' intention to adopt B2C. It indicated no significance as it was excluded due to results of factor analysis, which contradicts with many previous research papers (Chiu *et al.*, 2012; Khalifa and Liu; 2007). For example, previous literature has found that Habit moderates the influences of trust and satisfaction on repeat purchase intention. For example, Chiu *et al.*, (2012) found that the importance of trust would decrease as HT increases over time. Khalifa and Liu (2007) assert that satisfaction may not necessarily lead to intention to return to an Internet store when a Habit of on-line shopping has not been formed.

Furthermore, the results were not consistent with the UTAUT2 model and were not consistent with other studies that confirmed the effect of Habit on the consumers' adoption of B2C (Anderson and Srinivasan; 2003; Chiu *et al.*, 2012; Khalifa and Liu, 2007), which can be attributed to the fact that the B2C adoption in Egypt is still a novice idea where the majority of the people are not yet used to its adoption and still exploring the on-line purchasing process. Having presented the confirmed and unconfirmed hypotheses through the analysis, the following section presents the effect of the moderating variables that moderate the relationship between the established adoption factors and the intention to adopt B2C in Egypt.

8.5 Moderating Effect

8.5.1 The Moderating Effect of Gender: Hypotheses H11A, H11B, H11C

Hypotheses H11A, H11B, and H11C proposed that the respondents' gender would moderate the relationship between the established adoption factors and the intention to adopt B2C. Table (8.5) shows that gender did not make a significant contribution to explaining the variance in the intention to B2C adoption, which was caused by established adoption factors, specifically, Effort Expectancy (EE); Hedonic Motivation and Facilitating Conditions (HM and FC); and Social Influence (SI).

Table (8.5): Hierarchal Regression: Testing the Moderating Effect of Gender on the Established factors					
Hypothesis	Dependent variable “intention to use (B2C) e-commerce”	R²	ΔR²	ΔF	Sig. ΔF
H11 _A	EE	0.269	0.269	220.298	0.000
	Gender	0.270	0.001	0.964	0.327
	EE x Gender	0.270	0.00	0.596	0.813
H11 _b	HM & FC	0.088	0.088	57.9	0.000
	Gender	0.008	0.08	0.079	0.778
	HM & FC x Gender	0.091	0.011	1.392	0.239
H11 _c	SI	0.253	0.253	202.368	0.000
	Gender	0.253	0.00	0.004	0.950
	SI x Gender	0.255	0.002	1.6777	0.196

It is should be noted that the percentage of males and females at the current study was approximately equal as males constituted 50.2 per cent of the research sample, whereas females formed 49.8 per cent. The research sample has been proportionately given to each gender according to the total number of their presence in Egypt. According to a

2014 report that was issued by the Cairo-based Central Agency for Public Mobilisation and Statistics (CAPMAS), the total number of Egyptian women is 38, 011,400, and the total number of men is 39,763,847 (CAPMAS, 2014). However, this study results did not find any effect of gender. It is worth mentioning that the research sample needed to be educated Egyptian, who have purchased on-line at least once in order to be qualified for the research.

Research on B2C e-commerce adoption behaviour and the moderating effect of gender have been important topics for several researchers (Birkhofer, Schagel and Tomczak, 2000; Cyr and Bonanni, 2005; Dittmar, Long and Meek, 2004; Gefen, Karahanna and Straub, 2003; Hasan, 2010; Ilie, Van Slyke, Green and Lou, 2005; Kay, 2006; Saeed, Hwang, and Grover, 2003a; Saeed, Hwang, and Yi, 2003b). However, the results of research studies focusing on the relationship between gender and B2C have been mixed (Slyke *et al.*, 2002).

Although the previous research showed at the literature has indicated that there is no significant gender effect on B2C among Saudi Arabia, Qatar, Kuwait, the United Arab Emirates and Yemen (Nathan, 2009). Other research has found that men are more likely to make on-line purchases (Akhter, 2003; Cho and Jialin, 2008; Whitley, 1997), (Akhter, 2003; Cho and Jialin, 2008; Whitley, 1997). A previous research has revealed that women are nearly twice as likely to make on-line purchases using a popular on-line auction site (Black, 2007). Research has also revealed that most e-commerce sites

are designed to be more compatible with male preferences. Consequently, the male-related websites become less attractive to women (Moss, Gunn and Kubacki, 2006).

Previous research studies showed that gender is considered a predictor of B2C adoption, which is supported by several studies (Birkhofer, Schagel, and Tomczak, 2000; Cyr and Bonanni, 2005; Dittmar, Long and Meek, 2004; Gefen, Karahanna and Straub, 2003; Hasan, 2010; Ilie, Van Slyke, Green, and Lou, 2005; Kay, 2006; Liu and Forsythe, 2011; Saeed, Hwang, and Grover, 2003a, Saeed, Hwang and Yi, 2003b).

For example, Venkatesh and Morris (2000) found that the intention to adopt B2C was stronger for females than males. This Research has also argued that women and men value different capabilities in B2C e-commerce, with women are focusing more on trustworthiness and assurance issues and the ability to share opinions and ideas, whereas men have been focusing more on the value gained through the purchase (Awad and Ragowsky, 2008; Cho and Jialin, 2008; Rogers and Harris, 2003).

The results of this study, however, tend to adopt an opposite viewpoint to the previous findings as results have shown that gender has no effect on the research factors.

Although the results of this study is in line with recent arguments saying that the previous assumptions about gender and age in terms of technology use may have become anachronistic as societies are evolving and becoming more technologically literate (Workman, 2014). Thus, it is safe to say that gender and age may no longer play a significant role in technology use (Workman, 2014). The researcher is in the view that the results of this study can not be conceptualised within the framework of the

latter argument due to two reasons: First, as indicated in the literature, although Egypt has the most gender equal population in the Arab World with a 51% male to 49% female ratio, the male to female ratio transacting on-line is almost double the population ratio with a 70% male to 30% female ratio (Payfort Report, 2014). This indicates that there is an imbalanced gender access to B2C applications. Second, Egypt is still in its preliminary stages of adopting B2C. Therefore, the lack gender moderating effect cannot be due the technological advancement of societies as indicated at the above argument.

Therefore, the H11A, H11B, and H11C were rejected. Moreover, the results are not consistent with the UTAUT2 model, which confirmed that gender is a moderator factor. The results of this study imply that marketers should address and consider both males and females during their various activities targeting potential B2C consumers in Egypt.

8.5.2 The Moderating Effect of Age: Hypotheses H12A, H12B, and H12c

Hypotheses H12A, H12B, H12C have proposed that age of respondents will moderate the relationship between the established adoption factors and the intention to adopt B2C. As we can see in Table (8.6) age does not make a significant contribution to explaining the variance in the intention to adopt B2C is caused by established adoption factors, specifically, Effort Expectancy (EE), Hedonic Motivation and Facilitating Conditions (HM & FC) in addition to Social Influence (SI).

Table (8.6): Hierarchal Regression: Testing the Moderating Effect of Age Group on the Established Factors					
Hypothesis	Dependent variable “intention to adopt (B2C) e-commerce”	R²	ΔR²	ΔF	Sig. ΔF
H12 _A	EE	0.269	0.269	220.298	0.000
	Age	0.276	0.007	5.383	0.021
	EE x Age	0.277	0.001	0.859	0.355
H12 _b	HM & FC	0.088	0.088	57.90	0.000
	Age	0.096	0.008	5.025	0.025
	HM & FC x Age	0.096	0.000	0.021	0.884
H12 _c	SI	0.253	0.253	202.368	0.000
	Age	0.262	0.009	7.168	0.008
	SI x Age	0.263	0.002	1.405	0.236

The present finding is inconsistent with previous research because the review of the traditional literature underlines the importance of the users' age in the analysis of their behaviour (Harrison and Rainer, 1992; Hubona and Kennick, 1996). In the IT field, some research studies revealed that computer skills were more easily learned by younger individuals (Czara *et al.*, 1989; Hubona and Kennick, 1996). Furthermore, the youth usually possess greater experience with the Internet whose aspects such as usefulness and attitude acquire greater importance for them, whereas the older people, who perceive greater risks, have more difficulty in creating syntactically complex commands and place more importance upon the perception of self-efficacy (Morris and Venkatesh, 2000; Trocchia and Janda, 2000). Liu and Forsythe (2011) confirmed the effect of age on the on-line purchasing. Thus, some studies have included age as a relevant variable in the explanation of the on-line shopping behaviour (Zhang, 2009).

Trocchia and Janda (2000) consider the main obstacles to the evolution of e-commerce, which make older consumers more reluctant to shop on-line, are: lack of IT experience, resistance to change, and their insistence on trying out the product before buying it.

However, the results of this study were in an opposite direction of the previous studies for the established adoption factors: Effort Expectancy (EE); Hedonic Motivation and Facilitating Conditions (HM & FC); and Social Influence (SI) and the intention to adopt B2C. Differences in effect across age groups were not found. Other studies, which support this study's findings, have shown that age has no significant relationship with adoption use (Workman, 2014). They indicated that the assumption that young people already knew about the Internet and that older people were resistant was incorrect (Smith and Comstock, 1995; Zhang, 2005; Roussos, 2007).

Thus, age has no effect on the research factors. Therefore, the H12A, H12B, and H12C were rejected.

8.5.3 The Moderating Effect of Experience: Hypotheses H13A, H13B, H13C

Hypotheses H13A, H13B, and H13C proposed that the experience of respondents would moderate the relationship between the established adoption factors and the intention to adopt B2C. Table (8.7) shows that experience did not make a significant contribution to explaining the variance in the intention to adopt B2C caused by established adoption factors, specifically, Effort Expectancy (EE); Hedonic Motivation and Facilitating Conditions (HM & FC); and Social Influence (SI).

Table (8.7): Hierarchical Regression: Testing the Moderating Effect of Experience on the Established Factors					
Hypothesis	Dependent variable “intention to adopt (B2C) e-commerce”	R ²	ΔR ²	ΔF	Sig. ΔF
H13 _A	EE	0.269	0.269	220.298	0.000
	experience	0.281	0.012	10.161	0.002
	EE x experience	0.282	0.001	0.841	0.360
H13 _b	HM & FC	0.088	0.088	57.90	0.000
	experience	0.096	0.008	5.006	0.026
	HM & FCs x experience	0.099	0.003	2.271	0.137
H13 _c	SI	0.253	0.253	202.368	0.000
	experience	0.259	0.006	4.673	0.031
	SI x experience	0.259	0.000	0.175	0.676

Experience is an important factor in forming the customers’ perceptions, regarding their expectations from on-line retailers. Liang and Huang (1998) have found that the highly experienced customers are more likely to continue shopping. Liu *et al.*, (2008) have identified the significance of customer satisfaction in on-line shopping. Successful previous purchases and satisfaction that were derived from them might increase customers’ Effort Expectancy (EE) and Performance Expectancy (PE). Similarly, Tong (2010) conducted a cross-national study and examined, among other factors, the direct effects of previous on-line shopping experience on the perceived usefulness and the ease of use. According to Bandura (1986) and Dabhokar and Sheng (2009), experience is the strongest generator of self-efficacy.

When studying B2C e-commerce, it is equally important to consider the users’ familiarity with on-line shopping, which has an important effect on their on-line behaviour (Hui and Wan, 2006). Bellman *et al.*, (1999) acknowledged that past experience of using the Internet was an important indicator of the on-line shopping

behaviour. As level of exposure to the Internet increases, the intentions of purchasing on-line also increase as users become more confident about using it as a medium for shopping (Bhatnagar *et al.*, 2000; Corbitt *et al.*, 2003; George, 2004). It is worth mentioning that the majority of the research sample had an experience with the on-line shopping as 51.2 per cent of these samples bought on-line more than six times compared to the other percentages, which bought on-line from four to six times, who constituted 22.3 per cent as shown in Table (8.8).

Table (8.8): Sample Distribution according to Experience with on-line buying			
Variable	Interval	Respondents	
		<i>Number</i>	<i>% of Total</i>
<i>Experience</i>	Once	71	11.8
	2-3 times	88	14.7
	4-6 times	134	22.3
	More than 6 times	307	51.2
	<i>Total</i>	<i>600</i>	<i>100</i>

In an on-line shopping environment, a prior on-line purchase experience leads to the reduction of uncertainties and eventually leads to an increase in the customer purchase intention (Campo and Leuven; 2015; Thamizhvanan and Xavier, 2012). Moreover, a good experience with on-line shopping creates positive attitudes, increases customers' self-efficacy and influences future intentions, while a bad experience has exactly the opposite effects. Furthermore, Giannakos *et al.*, (2011) have found that customers, who are satisfied with previous experiences, have increased self-efficacy.

Thus, experience has no effect on research factors, which is consistent with other studies that have confirmed that there was no effect of experience as a moderating

variable on e-commerce adoption (Crespo and Del Bosque, 2010). Therefore, H13A, H13B, and H13C were rejected.

8.6 Theoretical Implications: B2C E-commerce Adoption Model

To achieve the research objectives and answer the research questions, a multiple regression analysis was performed on the collected data from 600 Egyptian respondents. As presented in Table (8.4) in this chapter for the respondents' intentions to adopt B2C, the outcome reveals five significant predictors of intention to adopt. These are: Effort Expectancy (EE); Hedonic Motivation & Facilitating Conditions (HM & FC); Social Influence and On-line Satisfaction (SI & OS); On-line Trust (OT), and On-line Interactivity (OI).

Regarding the moderating variables, the results of this research did not show any moderating effects by gender, age and experience. In conclusion, the current model explains the major factors that affect the intention for Egyptians to adopt B2C e-commerce. Accordingly, the following Figure (8.1) presents the final version of the research conceptual model: (UTAUT 3) that can be used as e-commerce adoption model for Egyptian consumers. It will be followed by the discussion on the research findings in relation to research objectives and research questions.

The proposed model, which was presented in Chapter Five claimed that Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), Habit (HI) and Facilitating Conditions (FC) affect B2C adoption among the Egyptian consumers. The proposed model has indicated that age, gender and

experience moderate the relationship for the six independent variables and the dependent variable except for the Performance Expectancy (PE) construct, which is only moderated by age and gender. The proposed model further introduced four additional new constructs: On-line Satisfaction (OS), On-line Interactivity (OI), On-line Trust (OT) and On-line Security (OSY), which are additional independent variables to the model without moderators. Accordingly,

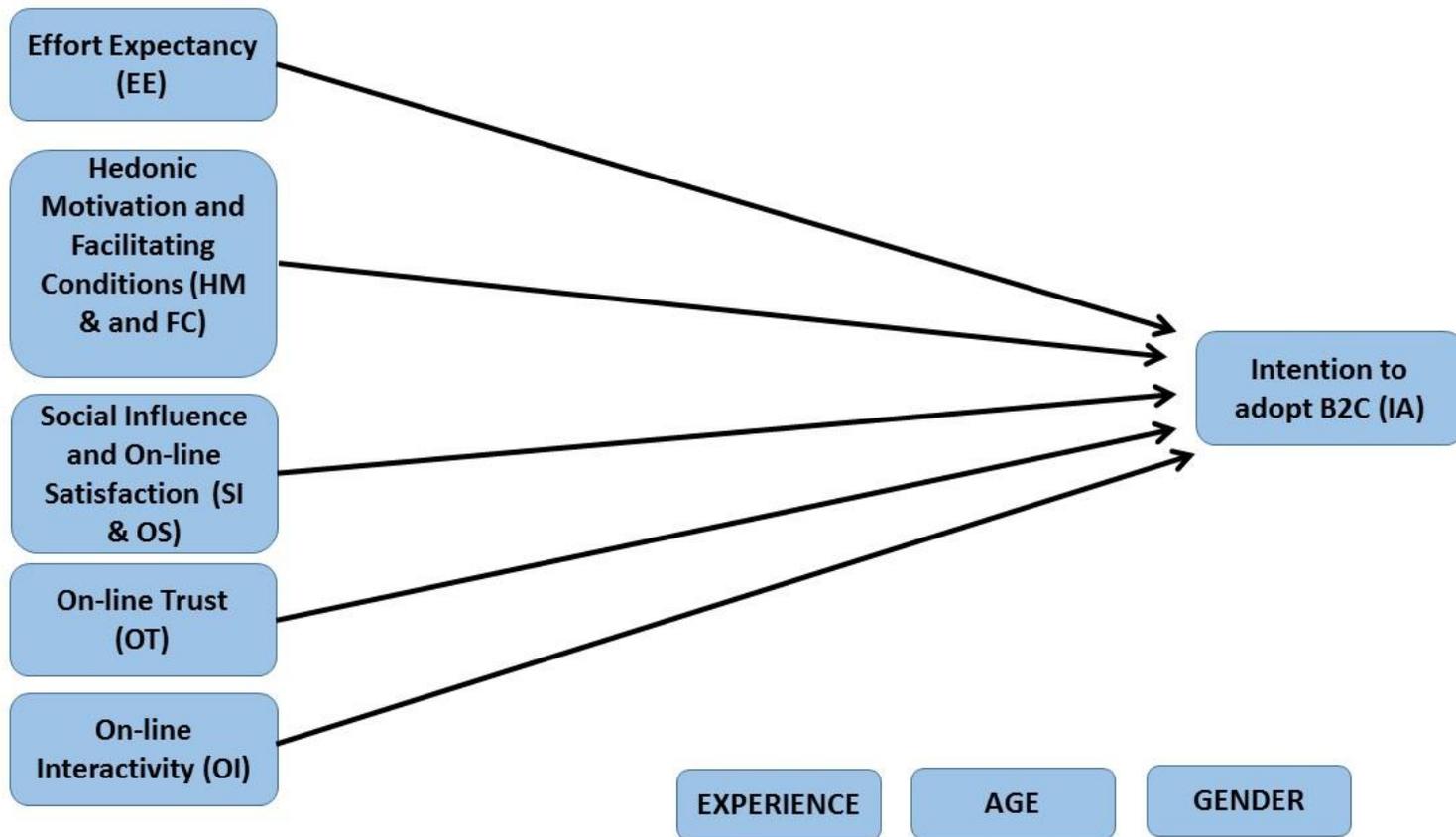


Figure (8.1): The Research Conceptual Model: Final Version

8.7 Research Findings with Relation to the Research Objectives and Questions

The research aimed to achieve three objectives and answer two research questions. This section summarises how these questions were answered and shows how the research objectives were achieved. In accordance with the aim and research questions, this study has addressed the following research objectives:

8.7.1 Research Objectives

Objective 1: Assessing the major factors that affect the intention for Egyptians to adopt B2C e-commerce.

The survey undertaken within this research has substantiated that Egyptian consumers' intention to adopt B2C. Using regression tests, which have been elaborated in Chapter Seven, the major factors were identified and the results revealed that Effort Expectancy (EE); Hedonic Motivation and Facilitating Conditions (HM & FC); Social Influence and On-line Satisfaction (SI & OS); On-line Trust (OT), and On-line Interactivity (OI) were the most influential factors explaining the intention to adopt B2C e-commerce in Egypt.

Objective 2: Developing an e-commerce adoption model for Egyptian consumers by investigating the factors affecting the adoption of B2C in Egypt.

This research has made further contribution by developing and validating a conceptual model to test the intention to adopt B2C by Egyptian consumers. The results suggested that the proposed model have revealed five significant predictors of intention to adopt

B2C. They are Effort Expectancy (EE); Hedonic Motivation and Facilitating Conditions (HM & FC); Social Influence and On-line Satisfaction (SI & OS); On-line Trust (OT); and On-line Interactivity (OI). *(Please refer to Figure (8.1) in this chapter).*

Objective 3: Investigating the moderating effect of age, gender and experience between Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), Facilitating Conditions (FC), Habit (HT) and the behavioural intention to adopt B2C.

The model of this research has proposed nine hypotheses to explain and test the moderating effects of gender, age and experience on the relationship between the five established adoption factors and the intention to adopt B2C by Egyptian consumers. To investigate this effect a regression analysis was conducted to test the direct links between independent and dependent variables for exploring whether they differ across groups as gender (males and females), age groups (21 – 29; 30 – 39; 40 – 49; 50 – above) and experience related to the number of times they have purchased through on-line. The results indicates that none of these factors has significantly moderated the relationship.

8.7.2 Research Questions

The study aims to answer two major questions as mentioned in Chapter One. This section outlines the answers to these questions as concluded from the findings of this study.

Question [1]: What are the major factors that affect the intention to adopt B2C in Egypt?

To answer this Question, an initial research stage has been launched to review the literature, which revealed a set of constructs that are predicted to influence the intention to adopt B2C in Egypt. These constructs have included Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), Facilitating Conditions (FC), Habit (HT), On-line Satisfaction (OS), On-line Interactivity (OI), On-line Trust (OT), and On-line Security (OSY). The development of the research hypotheses in line with those constructs has been presented in Chapter Five. After conducting the comprehensive survey, a further analysis using regression tests was performed to identify the major factors that affect the intention to adopt B2C e-commerce in Egypt. The result of the regression tests was that Effort Expectancy (EE); Hedonic Motivation and Facilitating Conditions (HM & FC); Social Influence and On-line Satisfaction (SI & OS); On-line Trust (OT); and On-line Interactivity (OI) were found to be the most influential factors on the intention to adopt B2C e-commerce in Egypt.

Question [2]: What are the relationships among these factors that affect the intention to adopt B2C in Egypt?

A factor analysis was carried out on the collected data to examine the relationship among sets of many inter-related constructs. The results of factor analysis revealed that some constructs were combined leading to the introductions of the following factors:

Hedonic Motivation and Facilitating Conditions (HM & FC), Social Influence and On-line Satisfaction (SI & OS), Effort Expectancy (EE); On-line Trust (OT); and On-line Interactivity (OI).

In addition, no relationship was found between the moderating variables: age, gender and experience, and the final five factors of the research: (HM & FC), (SI & OS), (EE), (OT); and (OI).

8.8 Practical Implications

The adoption of e-commerce in developing countries differs greatly from developed countries because the former countries often lack the necessary financial, legal, and physical infrastructure for the development of e-commerce (Lu and Chang, 2013). In addition, developing countries have different cultures and business philosophies, which limit the applicability and transferability of the e-commerce models that have been designed by Western countries (Uzoka, 2007). Accordingly, in Egypt there is an urgent need to draw up strategies to achieve an appropriate level of e-commerce development. It has been observed that the majority of on-line vendors lacks the integration of various strategies that can help boost their on-line sales.

The following sections in this chapter will discuss the managerial implications, which are required in regards to the constructs of this study.

The findings of this study have indicated that trust is an important factor in boosting the Egyptians' adoption of e-commerce as well as the expansion of e-commerce in Egypt. Some research studies have tackled how trust can be built to boost the buyers'

confidence (Liao and Keng, 2013; Vos. *et al.*, 2014). Egyptian on-line sellers and marketers should adopt strategies that increase consumers' confidence and ensure security during B2C transactions. Among these key confidence-building strategies is attaining a full privacy guarantee and security seals on their websites. In addition, they must apply several technical measures that are directly related to protect sensitive information of the e-company's assets such as the sign-on security system, third party verification, Internet seals, and prominently display detailed information about the products on their website (Becerra, 2009; Chang *et al.*, 2013).

The other inter-related construct with trust is security, which incorporates four elements: authentication, authorisation, encryption, and auditing (Shaha, 2014). The Sign-on Security System is regarded as a combination of authentication and authorisation models that permit authorised people's activities, prevent unauthorised actions, and give assurance that the on-line privacy is fully guaranteed. On-line privacy refers to "the protection of information via Internet from unauthorised invasion" (Bart *et al.*, 2005: 135; Bansal *et al.*, 2009: 404).

On the other hand, the consumers must have certain security measures such as using anti-virus software, using a safe browser, making purchases through verified on-line stores, and using complex passwords. Finally, the consumers should find in on-line stores the components that verify the credibility of payments standards such as Secure Electronic Transaction (SET) and Secure Socket Layer (SSL) (Bhiogade, 2002: 85; Omariba *et al.*, 2012: 442). Companies offering services related to e-commerce should also develop the necessary mechanisms that would ensure the privacy of the customers,

a secure transfer of electronic funds through co-operation with third-party purchasing systems, and the implementation of Internet seals (Kerkhof and Van Noort, 2010: 701; Kimery and McCord, 2002: 2).

Due to the fact that the on-line commerce transactions are made in a virtual environment, the managers of an e-company should apply tight privacy and security measures to ensure that the company's assets and shopper's sensitive information are well protected from unauthorised access, or hacking.

Furthermore, a crucial strategic issue that verifies an e-company's credibility and boosts the e-buyer's trust is the displaying of a comprehensive policy regarding privacy, refunds, shipping etc., logos of payment methods, and communication facilities (e.g. email form, mail address, telephone) with e-retailer (Liao and Keng, 2013), which the Egyptian market urgently needs.

Moreover, an e-company should give its customers the opportunity to assess its credibility. This aim can be accomplished by allowing samples ordering. In this way, customers can be sure of the quality of products.

The company should send an e-mail, or SMS to each customer to verify transaction deal after each checkout process. The customers should also feel that they have the control of their dispatched order, in case that they receive informative messages during the route. Hence, all of these measures reinforce the adoption of on-line shopping, by making the e-shoppers feel safe while they purchase e-products. When an order is made in a safe and secure manner, the reputation of the e-business is increased through the

word-of-mouth. As a result, a company benefits when its customer benefits from a fair and mutual co-operation.

This can be achieved through short and long-term goals. The short-term goals should focus on winning the trust of potential shoppers. By determining the age, sex, educational background and income level, the e-company should assess the e-buyers' motivation, personality, attitudes, morals, ethics, and beliefs. This highly important information will be used to determine the e-buyers' profile and help the e-company draw-up an effective strategy plan. In order to fulfill such vision, an e-company should estimate what are the perceived risks (the buyers' fears), and accordingly which strategy measures it has to follow to eliminate them.

Further, the on-line shopping platform's Effort Expectancy (EE) is considered as one of the key factors that affects Egyptians' intention to adopt B2C. Therefore, the local on-line sellers need to hold regular clarification workshops to teach the people how to use on-line shopping and explain its main benefits to the participants.

In the meantime, the Social Influence (SI) has a positive effect on the intention to use on-line shopping. Accordingly, the marketers should not target potential customers only, but they should attract their family members and friends too.

Research results have revealed that On-line Interactivity (OI) affects the adoption of B2C e-commerce in Egypt. Thus, the e-company managers should always ensure that interactivity is maintained through considering their on-line shops and websites attributes. It is worth mentioning that interactivity does not only help boost the Egyptian consumers' adoption of e-commerce, but also helps create a value to the on-

line sellers themselves. For example, a recent research has shown that value is not created exclusively by the firm but also by the inter-actions between and the joint activities that are being shared by different actors, including the customers (Groenroos, 2012; Prahalad and Ramaswamy, 2004; Ramaswamy, 2011; Wu and Fang, 2010).

In line with the factor of On-line Interactivity (OI), the following section presents two implications that on-line marketers and managers should take into consideration to affect a larger scale B2C adoption among Egyptian consumers. First, the managers and marketers can add enjoyable stimuli to their website pages to make them more attractive to consumer. Furthermore, the marketers should make their sites easy to navigate, and provide fast and accurate information to the customers and visitors about the products on display.

Second, the marketers should design websites that interact with the customers and meet their needs. For example, there should be high quality photos that show the product's features and attributes. Besides, giving a detailed view of the products, these photos should be subjected to various options such as colour, enlarging and rotation. Moreover, the marketers should further allow customisation options. For example, an on-line seller of ready-to-wear clothes could enable their customers to custom fit a product to their body measurements. Such option increases interactivity and the Egyptian customers' satisfaction.

Furthermore, it has been found that satisfaction positively affects the adoption of on-line shopping among the Egyptian consumers. Therefore, the managers should develop customer-oriented strategies at the post-sale stage to increase the consumers'

satisfaction levels. For example, the marketers can lure consumers into visiting their website pages regularly by providing price reduction, exclusive offers and special promotions to ensure re-purchasing. It is well-known that building a lasting and trusting personal relationship is critically important to most Egyptian consumers, who prefer to establish strong relationships before making any purchasing orders because they have an emotional personality, which can be easily attracted to specific services that are based on the first social contact with customer service representatives (Katz, 2007).

Furthermore, it has been found that the Social Influence (SI) has a very positive effect on the Egyptian consumers' adoption of B2C. In this regard, the on-line vendors should bolster the 'word of mouth' activities from satisfied Egyptian customers. For example the on-line sellers and traders can contribute to increasing the adoption of B2C e-commerce in Egypt by adding more website possibilities and options such as (a) 'the Tell a Friend Option', (b) 'the Share Your Opinion Review', (c) 'the Send a Discount Coupon to a Friend', (d) 'Let a Friend Know About our Special Offer', and (e) 'Get a Premium Service or Discount for Sending the Contacts of a New Customer'.

In fact, satisfying customers is very valuable to the on-line vendors as a previous research has confirmed that customers will not re-purchase from an on-line shop if their queries or complaints were not answered (Lovelock and Wright's, 2002). Additionally, Smith and Blend (2005) have revealed that dissatisfied customers will report a poor customer service experience to seven or nine friends. Once a customer is lost, it costs six times more to gain a new customer than it will cost to keep an existing one (Hennig

and Walsh, 2003). Therefore, the on-line vendors should maintain their customers fully satisfied.

8.9 Chapter Summary

This chapter has discussed the findings of this study, which were presented in Chapters Seven and in the light of the prior literature relating to business-to-consumer (B2C) adoption. The aims of this chapter were evaluating whether the research objectives were met, answering the research questions, and discussing the practical and theoretical implications. After the empirical investigation, the result of this study has suggested that the proposed model reveals five significant predictors of intention to adopt Effort Expectancy (EE); Hedonic Motivation and Facilitating Conditions (HM & FC); Social Influence and On-line Satisfaction (SI & OS); On-line Trust (OT); and On-line Interactivity (OI) to contribute to scientific knowledge.

Furthermore, the chapter introduced (UTAUT 3) as the new conceptual model for B2C adoption based on the development of UTAUT 2 model, and it has interpreted the research findings in relation to previous literature in the same field to capture the theoretical and practical contributions of this study that will be identified in the following chapter.

CHAPTER NINE

CONCLUSION

9.1 Introduction

After performing the research analysis in Chapter Seven and discussing the research hypotheses in light of the research findings, this chapter presents the research's theoretical and practical contributions as well as recommendations to on-line vendors and marketers, and the Egyptian government. It also presents the research limitations and future research directions.

9.2 Contributions to knowledge

This research has contributed to the body of theoretical knowledge through the introduction of the first conceptual framework model, which specifies the validated factors that influence the Egyptian consumers' adoption of B2C e-commerce in Egypt. Hence, the present study contributes to the literature by being the first empirical examination of B2C adoption factors in Egypt. Accordingly, the researcher named it (UTAUT 3).

Furthermore, the implications of this research are the first of their kind in Egypt as it developed the UTAUT2 as conceptual framework for B2C e-commerce adoption within an Egyptian context to give significant insights into the understanding of B2C e-commerce adoption by the local consumers.

The findings of this study enhance the understanding of the factors that affect Egyptian consumers' adoption to B2C e-commerce. In an attempt to identify the contributions

of this study, the researcher has adopted the Corley and Gioia's (2011) diagram, which offers a guide to studies' theoretical contributions, while capturing contributions to originality and utility dimensions.

According to Corley and Gioia (2011) both originality and utility are divided into sub-categories. Originality can be categorised as either (1) advancing understanding incrementally, or (2) advancing understanding in a way that provides some form of revelation. The utility dimension is labelled as (1) practically useful, and (2) scientifically useful. For elaboration, studies can be categorised as original if they managed to "advance our understanding of a theory (Corley and Gioia, 2011: 16).

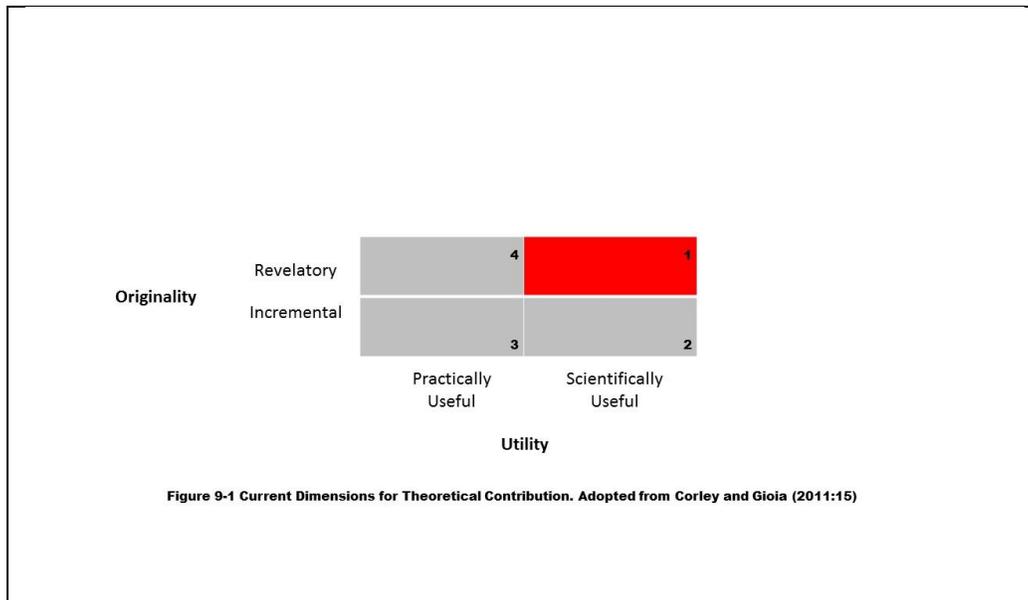
The researcher has adopted the above-mentioned diagram to specify the type of contribution of this study. It is equally important to elaborate on some dimensions: Van de Ven identified the incremental originality as a "good theory is precisely practical because it advances knowledge in a scientific discipline, guides research towards crucial questions, and enlightens the profession of management" (1989: 486).

On the other hand, utility indicates that the contribution "must be seen as useful as well as improving the current managerial practice of organisational practitioners" (Corley and Gioia, 2011: 18). Utility considers that a theory is practically useful or scientifically viable (Corley and Gioia, 2011). In their view, a Scientific utility is perceived as an advance that improves an idea and enhances its potential to be operationalised and tested. Practical utility, moreover, means that theory can be applied to the problems that managers encounter. Furthermore, Corley and Gioia (2011) introduced the Figure

(9.1), which provides a framework for scholars to assess whether the research will be seen as making a theoretical contribution. (*Please refer to page 275*).

Accordingly, this study will adopt the Corley and Gioia's framework in presenting its contribution. According to Figure (9.1), studies that display both original, revelatory insight and scientific usefulness (Quadrant 1) clearly stand out as most likely to pass muster with editors and reviewers (assuming that they also satisfy other desirable criteria). Research that only fits one of the dimensions well—scientifically useful but without adequate originality (Quadrant 2), or revelatory insight without adequate scientific usefulness (Quadrant 4) - present a challenge to both author and editor and usually must undergo significant revision, at minimum, if they are to be seen as making a significant theoretical contribution and, thus, become acceptable for publication. Finally, papers that score low on both dimensions (Quadrant 3) are likely to be rejected, or receive a firm rejection decision after the first round of reviews (Corley and Gioia, 2011:18).

This study fits within Quadrant 1 because it reflects an original, revelatory insight and scientific usefulness. Therefore, it adds a real valuable contribution. Accordingly, the following section presents the theoretical and practical contributions of this research.



9.3 Theoretical Contribution

As specified in Figure (9.1), this research incorporates fits within Quadrant 1 because it reflects an original, revelatory insight and usefulness. This section presents the theoretical contributions of this study.

Traditionally there were three main approaches to the study of B2C: “Formulation of barriers and drivers to e-commerce adoption, applications of technology acceptance models to B2C-related themes, and marketing segmentation” (Pardas *et al.*, 2013: 314, 315). This study has focused on investigating the “drivers” to B2C adoption, the factors that influence its adoption among Egyptian consumers. It has applied the UTAUT2 as a technology acceptance model. Thus, the study has tackled two joint attitudes of B2C research approaches.

In the meantime, this study contributes to a body of knowledge in B2C literature in many ways. The research findings have also added to the current body of literature

because it has been obvious from the literature review that previous research papers on Egyptian B2C adoption was very limited, fragmented and lacked the empirical approach. Accordingly, this study advances previous research with a deeper and thorough understanding based on empirically tested factors that affect the adoption of B2C e-commerce by Egyptian consumers. Further, these findings have provided a rich basis for future research directions, and have provided insight to the study of B2C in Egypt as an example of developing countries.

It is the first empirical study of its kind in Egypt because it has also developed the extended Unified Theory of Acceptance and Use of Technology (UTAUT2). Consequently, it is the first Egyptian empirical research that investigates a set of new constructs that are related to B2C adoption in this Arab country. Further, this study extends the original theory of UTAUT2 as the researcher has proposed the following new constructs to be empirically tested: On-line Satisfaction (OS), On-line Interactivity (OI), On-line Security (OSY) and On-line Trust (OT) in addition to the original UTAUT2 constructs: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), Facilitating Conditions (FC), and Habit (HT), in what the researcher calls (UTAUT 3).

Moreover, this study provides empirical evidence that consumers' demographics and experience with on-line purchasing do not affect their B2C adoption in Egypt. Previous research papers, however, have given mixed results regarding the effect of users' demographics and their B2C adoption of e-commerce. Although the review of traditional literature underlines the importance of consumer's age and gender in the

B2C adoption, the results of this study have revealed that both gender and age do not affect Egyptian consumers' B2C adoption. The latter point is considered a contribution to the existing literature as there was an obvious lack of previous studies that investigated the gender role in the adoption of B2C by Egyptian consumers.

This study's theoretical framework has also contributed to the body of literature. The intention to purchase and adopt B2C have previously been analysed by means of the application of two models, specifically the UTAUT model (San Martín and Herrero, 2012) and the TAM model (Bigné *et al.*, 2010; Herrero and San Martín, 2012; Izquierdo-Yusta and Calderon-Monge, 2011; Kim *et al.*, 2009; Ryan & Rao, 2008). Consequently, it is important to highlight that both the UTAUT and the TAM models have been suitable for application in the organisational context to understand the factors that affect the employees' acceptance and/or use of ICTs, but not within the consumer context for the purpose of explaining specifically the acceptance and/or use of ICTs by consumers (Rodríguez and Trujillo, 2014: 71). This thesis has developed the UTAUT2 model for the purpose of studying the acceptance and adoption of e-commerce by Egyptian consumers, and evoked a new model: (UTAUT 3)

Accordingly, the UTAUT2 model integration into this thesis is considered a contribution to the literature and study of B2C research in Egypt in one hand, and the developing countries in the other.

9.4 Practical Contribution (Utility)

As the on-line vendors are in regular process of targeting new on-line consumers, knowing the factors that affect Egyptian consumers' adoption of B2C is of great value

to retailers to help them adjust their strategies and adopt new marketing techniques to satisfy their present local consumers and target new ones. Furthermore, this study provides marketers with some recommendations to help them understand the implications of the factors affecting Egyptian consumers' adoption of B2C, now that the local consumers have certain reservations about B2C. The lack of trust and negative perceptions surrounding security and privacy is a great challenge that faces Egyptian consumers, especially when it comes to reveal and give personal and financial information on-line, or doing business with people they have never seen or met before (El Gawady, 2005; Kamel & Hussein, 2002).

9.5 Recommendations for On-line Vendors and On-line Marketers

This section provides on-line vendors and marketers with insights and recommendations to market-linked segmentation in relation to demographics. The results of this research, moreover, have revealed that gender, age and experience do not moderate the relationship between the established adoption factors and the intention to adopt B2C e-commerce. Accordingly, the Egyptian marketer should develop marketing strategies that integrate genders and age groups and even focus on off-line shoppers as prospect clients.

Furthermore, this study gives adequate insight to on-line vendor designers as collecting enough data that suits the would-be consumers is a starting point for designing on-line vendors. The research results strongly recommend that on-line shops should be more

inter-active and provide a level of entertainment to their consumers as it has been proven that interactivity and Hedonic Motivation (HM) have had a strong effect on B2C adoption. Therefore, it is recommended that the local on-line vendor designers should consider interactivity, which can be achieved through integrating more options that customise pictures and products to customers' need. Further, as indicated in the discussion chapter, consumers who exhibit a high degree of pleasure while shopping spend longer time visiting the on-line shops and are more likely to choose the same stores for re-purchases (De Wulf *et al.*, 2006; Novak *et al.*, 2000). Thus, the on-line designers should ensure that their websites provide joy during on-line purchasing process.

In addition, the on-line vendors should respond effectively and swiftly to consumers' inquiries and complaints. It has been observed in Egypt that the majority of on-line shops such as *Souq.com* and *Jumia.com* lack the professional image details and interactivity with their current customers. Furthermore, the on-line vendor designers should try to strike a balance between the content of the website and the time of its download. Therefore, the designers should consider the fact that the Internet in Egypt is notoriously slow and thus, preventing download of large photos and activate longer processes.

Accordingly, the on-line vendors must ensure a swift and satisfactory response to their customer requests and complaints. Furthermore, the on-line customers should be able to communicate with their peers and the seller to make the provided information more

relevant and credible (Ballantine, 2005; Noort *et al.*, 2012; Kim *et al.*, 2007). Furthermore, the on-line vendors should encourage their customers to post their reviews with detailed contents, which allow more objective evaluations of websites and products (Kim, 2015). The on-line marketers need to introduce systems or methods with which they can encourage customers to give relevant reviews, respond immediately to negative word of mouth, and reply properly to after-use comments. Moreover, some on-line vendors should even give bonus points for posting customers' reviews (Kim, 2015).

Moreover, the on-line vendors have to introduce new systems that support the image and videos that give comprehensive details about the on-line products to increase customers' interactivity (Rietjens, 2006). As pinpointed in the Discussion Chapter, it should be noted that increased interactivity boosts customer enjoyment, satisfaction and bolsters intention to purchase (Garrity *et al.*, 2005; Kim and Fiore, 2007).

As for Effort Expectancy (EE), the designers should maintain that on-line shops should facilitate an easy-to-use on-line paying process. Easy instructions and steps of payment must be clearly provided and easily performed. In addition, the marketers should emphasise that the easiness and simplicity of procedures for making an on-line order during the B2C marketing and promotion campaigns.

It has been stated previously in Chapters One and Three that only 600,000 Egyptians shop on-line out of a population of 85.55 million (The Future of the Internet Economy in Egypt, 2014). For these on-line shoppers, the most purchased product category is

electronic gadgets (Arab Advisors, 2012) followed by airline tickets and cosmetics, which constitute together the most popular on-line products in the country with a total of 40% of on-line transactions in Egypt (Payfort's Middle East State of Payment report, 2014). On the other hand, hotel reservations only make up to six per cent of the total on-line transactions in Egypt, while buying books on-line is higher than the regional average with eight per cent of Egypt's total on-line transactions (The Future of the Internet Economy in Egypt, 2014).

Accordingly, the on-line marketers should develop specific and thematic strategies and campaigns to promote for the least on-line purchased products. Moreover, adopting innovative methods for designing the websites, and conducting regular website assesment are important factors to maintain consumers and attract new ones (Bukhari, 2013).

The literature has shown that electronic gadgets, airline tickets and cosmetic are the most on-line purchased products in Egypt. In this regard, the on-line vendors should pay close attention to the factors that affect Egyptians' adoption of B2C now that the results of this study showed to maintain their present on-line consumers.

For more elaboration, the on-line sellers of the most purchased product categories have to ensure the sustainability of their customers' satisfaction, regularly check that hedonic motivations and facilitating conditions, and interactivity are well provided, offer a trust mechanism, and degree of ease associated with the use of their websites to their on-line shoppers.

By maintaining their present customers through providing the foresaid factors, the on-line vendors can further ensure the attraction of new segments of potential consumers because Social Influence has proved to be a major catalyst for the Egyptians' adoption of B2C. The SI factor influence has been referred to as the impact of others on purchase intentions (Charles Dennis, 2007; Rohm and Swaminathan, 2004). Accordingly, the satisfied customers can attract new consumers to on-line selling outlets.

9.6 Recommendations for the Egyptian Government

Furthermore, regarding the practical contribution to Egyptian policy-makers such as the Egyptian government, as stated in Chapters Two, Three and Eight, Egypt is a cash-based society and paper transactions are the dominant mode. Payment over the Internet still lacks general acceptance by the Egyptian consumers. The majority of on-line vendors still offers the option of cash upon delivery, which allows consumers to pay when they receive their ordered products. This is considered a good alternative for the Egyptian segments that do not have on-line credit cards.

Moreover, the Egyptian government should start promoting and protecting the rights of on-line consumers through the introduction of a legal system and infrastructure. Recently, the Egyptian Minister of Communications and Information Technology, Khaled Negm, has announced that his ministry is planning to expand Internet penetration from 34 per cent to 50 per cent by the end of 2016 (The Journal of the American Chamber of Commerce in Egypt, July 2015), a move that will positively contribute to B2C adoption by Egyptian consumers.

It is worth mentioning that there is an obvious lack of awareness regarding the rights of consumers, who adopt B2C. In the meantime, the local media should launch a comprehensive campaign to spread the on-line shopping benefits among the Egyptians. It has been noticed that the Egyptian media, especially after the January 25th 2011 Revolution, has played a key role in affecting Egyptians' perceptions and awareness regarding many issues. Therefore, it can be used as a tool to make the Egyptians aware of the benefits of B2C. Ad hoc talk shows and specialized TV and Radio programmes can be produced for serving this purpose.

It has been noted in Chapter Three that obstacles related to the skill level of population and the demand for e-commerce needs to be integrated into a strategic national plan to ensure a comprehensive diffusion of e-commerce applications. Therefore, the role of E-commerce Committee (ISE/E2C) needs to be re-activated as its major role was to motivate and spread awareness of e-commerce in Egypt. But, this role was not effective enough as it has been noted in Chapter Three.

Furthermore, the Cairo government should encourage people to trust credit card payment and bank transactions and adopt new payment methods. With only seven per cent of the population being banked and only eight million credit and debit cards issued, Egyptian users are challenged when it comes to on-line payments with over 65% relying on alternative payment methods such as pre-paid cards and bill presentment services and a 80% cash-on-delivery to 20% on-line credit card ratio (Payfort, 2014). In fact, as highlighted in the literature of this study, although the cash-on-delivery based transactions are convenient payment options for those who do not have credit cards. It

should be noted that cash as a payment method has heavily impacted the e-commerce eco-system (Anbari, 2013) because merchants who deal with the cash-on-delivery system as their main payment option, costs can range from \$10 to \$30 per shipment due to high product returns, re-stocking and re-shelving of undelivered products, cash-handling costs, thefts, and customers abandoning payments on delivery. Furthermore, merchants may wait weeks before they are able to settle their cash-on-delivery funds into their bank accounts (MENAP e-commerce overview, 2012). Accordingly, the Egyptian government should develop a strategic plan for credit card adoption as a major payment method.

9.7 Research Limitations

It is worth mentioning that B2C is a new idea in the Egyptian context and e-commerce practices are still informal and not widely spread as mentioned in the literature of this study. Therefore, the research sample was found with difficulty based on the qualifying criteria of the research as data collection was only confined to the Egyptian capital of Cairo, which comprises more than 50% of the on-line buying population (Payfort Report, 2014). Accordingly, empirical study did not cover other Egyptian governorates in the Nile Delta, Upper Egypt and Alexandria, which have on-line shopping activities as has mentioned in Chapter Three (The Future of the Internet Economy in Egypt, 2014).

Moreover, among the research limitations is that the present study has largely relied on quantitative methodology that resulted in limiting an in-depth view of the findings.

Therefore, more of qualitative methodology of data collection can be undertaken to gain a deeper perspective to the present study.

9.8 Future Research Directions

Some suggestions can be made for future research directions. This study can be replicated after observing some macro-developments in Egypt in terms of developing infrastructure and new legislation; thus it would be advised to re-evaluate the factors affecting B2C adoption here.

The literature has presented an overview regarding the B2C adoption in the Arab World's largest markets: Saudi Arabia, Kuwait, and United Arab Emirates (Payfort Report, 2014). Future research can replicate the study among these three countries to reach a comparative conclusions.

In Egypt, governorates in the Nile Delta, Upper Egypt and Alexandria, which comprise around 43% of the on-line buying population, can be considered for future research (The Future of the Internet Economy in Egypt, 2014). Furthermore, it will be useful to expand the sample by increasing and diversifying the number of Egyptian consumers. It will be useful as well to include a sample that has not adopted any type of B2C before to investigate its members' fears or the barriers to their adoption.

Moreover, future research can cover post-adoption stages of B2C. Generally, the research on post-adoption tackled two scopes of empirical investigation, namely, continuance intention and continuance usage (Li and Liu, 2014). Accordingly, a future

research can be conducted to investigate one of these two scopes among Egyptian consumers.

It is also recommended to apply the findings of this study in other Arab countries to produce an international sample and investigate possible differences in B2C adoption behaviour through empirically investigating the same constructs of this study to provide a comparative study in terms of empirically testing the following independent constructs: On-line Satisfaction (OS), On-line Interactivity (OI), On-line Trust (OT), On-line Security (OSY), Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Hedonic Motivation (HM), and Facilitating Conditions (FC). As noted in the literature of this study, the United Arab Emirates (UAE) was selected as a benchmark country within the Arab World due to its high level of IT adoption (Al-Maghrabi *et al.*, 2011). Accordingly, it can be integrated to the suggested comparative study.

In addition, the inclusion of other constructs is highly recommended; for example, constructs related to culture have not been considered in this study in particular. Therefore, any similar future research can examine constructs related to cultural attributes such as language, religion and traditions.

As specified in the literature of this study, previous research papers have sought to identify the positive consequences of trust such as loyalty and repurchase. But the question of what builds trust remains largely unanswered (Chang *et al.*, 2013; Kang

and Hustvedt, 2014). Accordingly, any future research can investigate the effectiveness of various trust building mechanisms.

It is worth mentioning that there are four on-line trust behaviours that can be integrated to future research directions that will be related to B2C. The identified on-line trust behaviours are: (1) willingness to depend on the website; (2) following the advice provided on-line; (3) providing personal information on-line; and (4) making an on-line purchase (Becerra, 2009: 938). In this regard, any future research can investigate the four stages of trust behaviour comprehensively, or can focus on each stage separately.

Other constructs related to the adoption of B2C research is the On-line Satisfaction. Future research can tackle new scopes of investigating On-line Satisfaction by investigating the effect of the word of mouth (WOM). In the marketing literature, the WOM is said to be important, particularly in the highly competitive on-line environment (Kim and Son, 2009). Moreover, technology acceptance research and internet applications are rapidly evolving (Al- Qeisi and Hegazy, 2015). Thus, technology research and particularly the B2C related-studies need to keep up with this base for new determinants.

Future research can also tackle the Electronic Service Quality measurement instrument (E-S-QUAL) (Parasuraman *et al.*, 2005), and its factor structure within the context of B2C in Egypt. The E-S-QUAL is a multiple-item general scale for measuring electronic service quality. It is proposed because it focuses on measuring the quality of the core

service attributes rather than the technical quality of websites that are measured by other models (Santouridis *et al.*, 2012). Santouridis *et al.*, (2012) verified E-S-QUAL factor's structure and confirmed the applicability of this scale to measure Internet service quality of on-line shops. For example, Santouridis (2012) conducted a survey on Greek customers of Internet shops to investigate the impact of e-service quality on satisfaction and trust, and determine the extent to which each E-S-QUAL dimension contributes to e-loyalty, e-satisfaction and e-trust. The results have revealed that e-quality is a major predictor of customer satisfaction.

Although this study has been found that gender and age do not moderate the relationship between the established adoption factors and the intention to adopt B2C e-commerce in Egypt. This may be due to the fact that B2C is still in its introductory stages in Egypt. Therefore, a future research could investigate these moderating factors at more advanced staged of B2C adoption in Egypt.

Although Egypt has the most gender equal population in the Arab World with a 51% male to 49% female ratio, the male-to-female ratio transacting on-line is almost double the population ratio with a 70% male to 30% female ratio. Accordingly, there is a pressing need to study the moderating effect of gender and incorporate it to future research (Payfort Report, 2014).

Regarding age as a moderating variable, although Chapter Five: *Hypotheses Development and Conceptual Model* and Chapter Eight: *Discussion* have reflected that age has different effects on on-line shopping in different studies, Zhou *et al.*, (2007) assert that this inconsistency across research findings may be a function of the lack of

a standard age categorisation scheme being used across studies. Consequently, future research should standardise age categories in line with the age categories that have been adopted in this study: 21 – 29; 30 – 39; 40 – 49; 50 – above, to overcome the inconsistent results of age effect on on-line shopping.

9.9 Final Conclusion

This thesis has contributed to the study of B2C e-commerce in Egypt through investigating the factors that affect its adoption among Egyptian consumers. The B2C e-commerce is still in its introductory stage in Egypt. This study proposed practical recommendations to on-line vendors and marketers and to the Egyptian government as well, who are solicited to co-operate to enhance the adoption of B2C in the Egyptian market, and may on the long run allow the local consumers to experience more satisfaction and thus contribute to adoption and eventually loyalty to B2C vendors.

Furthermore, the present study contributes to the literature by being the first empirical examination of B2C adoption factors in Egypt. In other words, this research makes a contribution to knowledge by identifying the most influential factors that affect e-commerce adoption among the Egyptian consumers. It is worth mentioning that the presented future research offers researchers original scopes for empirical investigation to further enrich the e-commerce-related literature.

The results of this study have identified positive and significant empirical evidence that the customers' Effort Expectancy (EE); Social Influence (SI) and On-line Satisfaction (SI & OS) do play an important role in the adoption of B2C among Egyptian consumers followed by Hedonic Motivation and Facilitating Conditions (HM & FC); On-line

Trust (OT), and On-line Interactivity (OI), which form the new model: UTAUT 3.
(Please refer to Table No. (8.4) presented on page 241 for the Beta value of each factor).

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APPENDICES

APPENDIX I

Maps for Egypt



Egypt's Map ¹

¹ Online. Available from: <http://www.worldatlas.com/webimage/countrys/africa/eg.htm>



Egypt's Location within the African continent ²

² Online. Available from: <http://www.worldatlas.com/webimage/countrys/africa/eg.htm>

APPENDIX II

Questionnaire

QF1: Have you ever bought product or service online in Egypt?

Yes

No

QF2: Are you Egyptian?

Yes

No

If you have answered NO to any of the above questions, I really thank you for your valuable time and effort, but there is no need for you to complete the questionnaire any further

Please choose all applicable options

Q1: From which of the following online Egyptian vendors have you purchased from?

Amazon.com

Egyptair.com

E-Bay.com

Expedia.com

Jumia.com

Nefsak.com

Offerna.com

Otlob.com

Styletreasure.com

Souq.com

Sukar.com

Dubizzle.com

Other, Please specify.....

Please give your opinions by circling the number that expresses the extent of your agreement or disagreement with each statement below in relation to your online purchasing

Each statement is accompanied by a 5-point scale where “1 = strongly disagree” and “5 = strongly agree”.

Q2: Intention to adopt B2C:

Please provide information about your intention to buy online by answering the following questions:

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am planning to increase my online buying	1	2	3	4	5
I suggest other people to buy online	1	2	3	4	5
I will continue to buy online rather than offline	1	2	3	4	5
I will regularly buy online in the near future	1	2	3	4	5

Q3: Social Influence

We would like to know the influence of social factors on your online buying in Egypt:

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
People who influence my behaviour (e.g. family and friends) think that I should buy online	1	2	3	4	5
People who are important to me (e.g. family and friends) think that I should buy online	1	2	3	4	5
People whose opinions that I value (e.g. family and friends) prefer that I buy online	1	2	3	4	5

Q4: Effort Expectancy

Please give your opinions by circling the number that expresses the extent of your agreement or disagreement with each statement below in relation to your online buying in Egypt:

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Learning to operate online buying is easy for me	1	2	3	4	5
It would be easy for me to become skillful at using online buying	1	2	3	4	5
I find online buying easy to use	1	2	3	4	5

Q5: Performance Expectancy

Please give your opinions by circling the number that expresses the extent of your agreement or disagreement with each statement below in relation to your online buying in Egypt:

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I find online buying useful in my daily life	1	2	3	4	5
Online buying will increase my chances to buy all the things I need	1	2	3	4	5
I can save time by buying online	1	2	3	4	5
Online buying helps to make purchasing decisions in the shortest time	1	2	3	4	5

Q6: Online Trust**We would like to know your trust towards online buying in Egypt:**

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The Egyptian online stores provide correct information about the items I want to buy	1	2	3	4	5
The Egyptian online stores provide enough information about the item I want to buy	1	2	3	4	5
The Egyptian online stores' are trustworthy	1	2	3	4	5

Q7: Online Security**We would like to know your evaluation of online security during your online buying in Egypt:**

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I am concerned about my security when I buy online	1	2	3	4	5
Online stores in Egypt will protect my e-payment and will not lead to transaction fraud	1	2	3	4	5
The risk associated with my online payment is low	1	2	3	4	5
<i>I feel safe to share my credit card while buying online</i>	1	2	3	4	5

Q8: Hedonic Motivation

Please give your opinions by circling the number that expresses the extent of your agreement or disagreement with each statement below in relation to your online buying in Egypt:

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Online buying is fun	1	2	3	4	5
Buying online is enjoyable	1	2	3	4	5
Buying online is entertaining	1	2	3	4	5

Q9: Perceived online interactivity

We would like to know about your perceived interactivity during online buying in Egypt:

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I can search easily through the online store	1	2	3	4	5
At the site of the online store, I can choose the way in which information is presented to me	1	2	3	4	5
I can change images easily at the online store to fit my choices	1	2	3	4	5
The site of the online store responds to my questions efficiently	1	2	3	4	5

Q10: Online Satisfaction**We would like to know about your satisfaction of online buying in Egypt:**

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The Egyptian online stores offer good quality service	1	2	3	4	5
The Egyptian online stores allow exchange or money refund for wrong deliveries	1	2	3	4	5
The Egyptian online stores offer good after sale services	1	2	3	4	5
The Egyptian online stores deliver my purchases in the expected time	1	2	3	4	5

Q11: Facilitating Conditions**We would like to know about the facilitating conditions during online buying in Egypt:**

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have the resources necessary to buy online	1	2	3	4	5
I have the knowledge necessary to buy online	1	2	3	4	5
I can get help from others when I have difficulties while buying online	1	2	3	4	5

Q12: Habit

We would like to know about your habit during online buying in Egypt:

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The use of online buying has become a habit for me.	1	2	3	4	5
I am addicted to using online buying	1	2	3	4	5
I must buy online	1	2	3	4	5

Q13: Experience

Approximately, how many times have you bought products from an online store in the past six months?

- a) Once
- b) 2-3 times
- c) 4-6 times
- d) More than 6 times

Q 14: Which of the categories below would best describe your age?

- a) 21 – 29
- b) 30 – 39
- c) 40 – 49
- d) 50 - above

Q 15: What is your gender?

- a) Male
- b) Female

Q 16: What is your current educational level?

- a) Undergraduate Student
- b) BA/BS Degree
- c) Master's Degree
- d) Doctorate Degree

THANK YOU

APPENDIX III

INFORMATION FORM



Dear Participants,

My name is Ibrahim Al Sahouly and I am currently studying for PhD degree at Salford Business School, Manchester, UK.

As part of my research, I am required to carry out primary research to understand Egyptian online consumer behaviour and to gain greater insight into the various online purchasing decisions that you as a consumer has made or intend to make.

I am carrying out this study with the help and guidance of my supervisor, Dr Tahir Rashid from Salford Business School, UK. If you have any questions concerning this questionnaire, research study or about your participation in this study, please feel free to contact me at: I.alsahouly@edu.salford.ac.uk

The questionnaire should take no longer than thirteen minutes, Please answer the questions to the best of your knowledge. Your response will be treated anonymously with great confidentiality and will not be shared with any third party.

Thank you for both your time and participation.

With my appreciation,
Ibrahim

APPENDIX IV

SURVEY CONSENT FORM



Questionnaire Survey Consent Form

I have read the Questionnaire Survey Information Sheet and understand what I am required to do. I am aware that my anonymity has been guaranteed and that I may withdraw at any point in the survey. I fully consent to my participation.

Signature:

Date:

N.B. This survey consent form will be stored separately from the completed questionnaire in secure location by the researcher.