

**The Adoption of Web Based Marketing in the Travel  
and Tourism Industry: An Empirical Investigation in  
Egypt**

**By**

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**To Mum and Dad  
For everything**

**To my Husband  
For his passionate love and continuous support**

**To my Son  
For just being there**

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## **Abstract**

The main objective of this research is to increase academic understanding as well as provide managerial implications in relation to the determinants of the levels of web adoption for marketing purposes by small and medium sized enterprises (SMEs) in Egypt. Web adoption is specifically defined in this research as the ownership of a website to communicate and/or deliver travel services to a target market. Providing facilities for inquiry, reservation, communication and booking are examples of adoption of the web to provide travel services. This research is thus interested in how the web is being used to interact with customers. Additionally, the levels of adoption represent the different levels that SMEs go through in their adoption process starting with not owning a website to being a simple adopter to being a sophisticated adopter. Non-adopters do not own a web site. Simple adopters own web pages that have facilities for information provision and communication whereas sophisticated adopters own web pages that have facilities for online booking and completing a full transaction online. It is worth noting that the levels of adoption are interrelated and are not static but are part of a process of eEvolution.

This research provides an empirical contribution by studying the tourism sector as an example of a service industry and investigating the relative importance of the factors that determine the different levels of web adoption by SMEs in the context of a developing country. In order to achieve this objective, the research integrates existing theories in order to develop a conceptual framework for the determinants of Web adoption in the tourism sector. Besides Roger's model of innovation adoption, the Resource-based view of the firm, a theory that deals specifically with firm resources and capabilities, is used to provide valuable information about the firm-specific factors that are thought to have an influence on innovation adoption. The model developed in this research is based purely on existing research and it integrates different theoretical perspectives. In addition, the researcher empirically tests this framework using both qualitative and quantitative data from travel agents in Egypt

This research is divided into three main parts. The first part (chs. 2 &3) introduces the literature where the concept of Internet marketing is presented and the key themes of research on Internet marketing are discussed. A literature review on Internet adoption by firms is then presented and the gaps in literature highlighted. The key literature includes defining the web as an innovation and organizational adoption of innovation. The different ways in which innovation adoption has been studied are discussed and a classification of the different factors influencing innovation adoption is made. A review of the existing research on the factors influencing technological innovation adoption by organizations is then provided. Finally, Internet adoption including the web by SMEs is discussed.

The main gaps identified are lack of research on SMEs adoption of the web from a level perspective (i.e. distinguishing between use for communication versus use for transactions), lack of research on innovation adoption in developing countries, too much focus on consumer adoption in comparison to organizational adoption of innovations, shortage of research on innovation adoption from a level perspective and a need to identify the critical factors that affect each level of adoption. A conceptual framework (ch.4) is then presented, based on integrating existing theories and literature, and a series of hypotheses derived.

The second part starts by discussing the tourism sector in Egypt (ch.5) which is selected to be the research context and then outlines the methodology (ch.6). This research relies on triangulation with a mixed methods research approach which combines both qualitative and quantitative analysis. The qualitative work provides depth to the analysis. It is used to compare with the proposed model in an attempt to provide a more complete picture of the investigated phenomenon. The quantitative work tests the hypotheses and indicates generalizability of the results. It consists of descriptive analysis, factor analysis and regression analysis. Both logistic and multiple regression were conducted in this research.

The third part of the research is concerned with the analysis of empirical results presented in four chapters. Chapter 7 deals with a small scale content analysis on travel agents' websites to measure the evolution of services provided on these sites over a period of two years. Chapter 8 includes details of the qualitative work conducted in this research which consisted of 12 in-depth interviews with travel agents in Egypt and provided a basis for triangulating the findings from the quantitative analysis. Chapter 9 includes the descriptive analysis of the data as well as the reliability and validity tests on the measurement instrument. Chapter 10 presents the findings and the interpretations of the hypotheses testing.

The contribution of this research is a synthesis of Roger's innovation adoption model with the Resource-based View of the firm (RBV) to produce a revised conceptualisation for the adoption of innovations which is empirically tested for developing country SMEs in the context of tourism in Egypt. The key findings of this research are that management factors are important for the initial adoption decision by firms whereas marketing capabilities are important for more sophisticated adoption. As for perceived innovation attributes, relative advantage and complexity were found important for the initial adoption decision whereas perceived risk was found important for more sophisticated adoptions. This suggests that different factors affect the different levels of adoption. The main contributions of this research to theory are: first,-innovation attributes are not the whole story when studying firms' adoption of the web, firm resources also affect firms' adoption decision. Second,-different factors affect different levels of adoption thus when studying innovation adoption by firms, it is important to consider the adoption process as a continuous process that consists of different levels rather than a dichotomous process of adopt vs. non-adopt.

The main contribution at the context level is that this is the first research to be conducted in Egypt which represents an important extension to the Web adoption studies that focused largely on developed countries. Additionally, the results of this research can be transferable to countries that share similarities with Egypt and may also be of relevance to SMEs in other sectors in Egypt as will be explained later.

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# **Chapter One**

## **Introduction to the Research**

### **1.1 Introduction**

The broad topic of this thesis is the adoption of the web for marketing purposes by firms in the travel and tourism industry. It is important to specify from the beginning that this research is only interested in the active use of the web for marketing purposes, i.e. in the interaction with customers. Thus for convenience, wherever web adoption is mentioned in this thesis it will be in relation to marketing activity. Particularly this study focuses on the determinants of web adoption by Egyptian travel agents. The main purpose of this introductory chapter is to provide an overview of the purpose of this research, its design and its implementation. The chapter is divided into three main parts: the importance of this research, the research objectives, and finally the main structure of the research.

### **1.2 The Importance of the Research**

The purpose of this thesis is to study the adoption of a medium which is relatively innovative for the context of this study, which is the web in the marketing of a service, namely travel and tourism within a specific national context, namely Egypt. The study particularly addresses the factors that affect web adoption by Egyptian travel agents in order to increase the academic understanding and the managerial implications in the field of innovation adoption with particular attention to the nature of the innovation and the context of study. This thesis further attempts to demonstrate that it is preferable to study web adoption by travel firms in terms of levels (or extent of adoption) rather than as a simple dichotomy and seeks to identify the critical factors affecting these different levels.

Internet technology has a direct impact on companies, customers, suppliers, distributors and potential entrants into an industry (Porter, 2001). Since the emergence of the Internet many studies have been conducted on how this innovation will affect the nature and future of marketing activities (Shunk et al., 2007; Yadav and Varadarjan ,2005; Beheshti et al., 2006). Given the importance of the Internet in general and for the marketing

function in particular there has been a growing focus in the marketing literature over the past decade on understanding the determinants of web adoption by individual consumers and more recently by firms. Knowledge of the factors that affect the adoption of a rapidly diffusing innovation such as the web is particularly important in order to enhance drivers and overcome challenges to web adoption to make maximum use of the web and thus capitalize on the opportunities created by it.

As mentioned above, although research on technological innovation adoption has been largely focused on the individual consumer as the adopter of innovations, more recently there has been a focus on the organization as the unit of adoption. This is the focus of this research which is to study marketing focused, web adoption in a business to business context. Businesses have different decision making processes from consumers and thus their adoption decisions may be influenced by different factors and it is important to study these. Existing research on web adoption by firms has tended to focus on studying adoption as a dichotomous variable and neglects the fact that the adoption of a complex innovation like the web is likely to comprise of a series of levels (Houghton and Winklhofer, 2002). Relatively few studies have focused on studying web adoption from the perspective of levels or extent of adoption (Brand and Huizingh, 2008; Molla and Licker, 2005; Aguila-Obra and Padilla-Melendez, 2006; Houghton and Winklhofer, 2002). Additionally, all of these studies have been conducted in a developed country context. This present research will examine the levels of web adoption by firms and will synthesize a model from existing literature and seek to identify empirically, the factors that influence different levels of adoption.

This research studies web adoption in small and medium sized enterprises (SMEs). SMEs have been chosen for this study for a number of reasons. First, web adoption research has largely focused on large organizations. Rather fewer studies have focused on web adoption in a small business context. Small firms have different characteristics than larger ones including limited resources and more flexible structure (Hausman, 2005) which are likely to affect their adoption decisions. Second, smaller firms have been much slower than larger ones in adopting the web and e-commerce and also relevant research

has been slower in developing (Fillis and Wagner, 2007). Third, there is a shortage of research on the factors affecting the levels of web adoption by SMEs. Most of these studies focused on the barriers that small companies can face in their adoption of the web as well as the benefits they can realize. Only a limited number of researchers have attempted to analyze the factors that lead these small companies to either adopt or not adopt the web and the levels of web adoption by these companies. Fourth, small firms are important to the global economy and a large number of companies worldwide fall under SMEs and thus it is worth studying whether the same factors that affect web adoption by large companies also affect SMEs' adoption. Finally, SMEs represent the largest group within the tourism industry in Egypt and are recognized as different in terms of their characteristics from larger ones, so it would be helpful to study that group separately.

It is thus worth noting that the majority of travel agents in Egypt fall under the heading of SMEs. Size here is defined in terms of number of employees. Only a few travel agents can be categorized as large companies with more than 50 employees. The role of travel agents in Egypt is to provide travel services to tourists. The majority of travel agents conduct inbound tourism which is to attract tourists from abroad. Other travel agents focus only on outbound tourism and particularly carrying out religious tours such as Hajj and Omra. Since the majority of travel agents are SMEs they are usually owned and managed by one person who is the owner and the general manager at the same time. Management structure vary, but commonly there is a tourism manager (reporting to the general manager) who overviews all tourism transactions conducted by the company including bringing tourists and managing the touristic programs offered, etc. Under the tourism manager are all different departments' managers including the marketing manager who is specifically responsible for marketing the company's travel services.

This research studies web adoption in a service context and focuses on the tourism industry as the field of application. The tourism industry is one of the major industries in the service sector. Being a large contributor to GDP and employment in many countries, the service sector is one of the most important sectors in the global economy. Many statistics show that the travel industry is one of the fastest industries growing on the web

thus it is worth studying the factors that lead firms to adopt the web in this industry. The close match between the nature of the tourism product being information intensive and the characteristics of the web offering global reach and multimedia capability indicates that the web is becoming an increasingly important means for promoting and distributing tourism. The tourism industry is a global, dynamic and information intensive one with a high growth potential on the web. The tourism industry is in more and more need of capturing the opportunities and coping with the challenges posed by the electronic market. The rapid increase in sophisticated customers who require specialized and interactive products places huge demand on the tourism industry to take advantage of the information technology revolution and re-engineer the entire business processes of the industry (Buhalis, 1998). Therefore, knowledge of the factors that affect firms' adoption of the web in the tourism industry will surely provide valuable information to help enhance the competitiveness of such a global industry. Existing research in tourism has largely focused on the impact of ICT on tourism rather than the adoption of ICT by tourism businesses (Buhalis and Licata, 2002; Buhalis and Zoge, 2007; Zelenka, 2009).

Egypt has been chosen to implement the empirical part of this research for a number of reasons. First, to the researcher's best knowledge, this is the first research to be conducted in Egypt on Web adoption in the tourism sector where no previous empirical or conceptual work exists. Thus this research represents an empirical contribution in that regard. Second, studying a developing country like Egypt represents a valuable extension to innovation adoption studies that have been primarily focused on developed countries. Web technology has played a big role in the economic development of developed countries (Ghosh, 1998; Raisinghani, 2000) but less so in developing countries (Al-Hajiri and Tatnall, 2008). Several studies (Kaynak et al., 2005; Stockdale and Standing, 2004; Taylor and Murphy, 2004) have suggested that much of the literature related to web and e-commerce adoption has been undertaken in developed countries. They argue that directly transferring these findings to developing countries is not justifiable because the driving forces for firms' adoption of the web and e-commerce vary widely from location to location (Kartiwi and MacGregor, 2007). Businesses in developing countries face different challenges from those in developed countries (Molla and Licker, 2005) and it

would be really useful to discover whether the same factors influence adoption as in developed countries. Third, Egypt is one of the top countries worldwide in terms of tourism growth potential, and thus is expected to make large benefits by adopting the web. The uniqueness and large diversity in the tourism portfolio that Egypt offers to tourists including heritage and seaside tourism are factors that can lead to a large increase in the tourist inflow if properly marketed over the web. It is therefore important to consider what factors can lead tourism organizations in Egypt to adopt the web not only for information provision but also for more interactive levels such as marketing and actually selling a travel service fully online. Gaining knowledge of the drivers and barriers to Web adoption by Egyptian travel agents could provide valuable information that would help enhance the competitiveness of the tourism industry in Egypt.

It is important to mention at this point that this research will target Egyptian travel agents, both adopters and non-adopters of the web who are involved in inbound tourism. Travel companies whose line of business is to carry out religious tours only are excluded from the survey. The reason why these are excluded is because they tend to do relatively little active marketing for their travel services but rely on the fact that religious tours are done anyways and are internally driven by people. Accordingly, the web is typically viewed as less important in order to attract tourists. It is worth noting that the majority of travel agents in Egypt are SMEs. Although there were some attempts to study the factors that affect web adoption in small businesses, these were few and were mostly focused in developed countries. Businesses in developing countries face different challenges from those in developed countries (Molla and Licker, 2005). It is important to extend these studies to less developed countries, particularly when studying a global industry such as the tourism industry. Studying a developing country such as Egypt provides a valuable extension to the innovation adoption literature that has been largely focused on developed countries. In addition, there is a shortage of research in the area of web adoption in the tourism industry in general and in Egypt in particular. To the researcher's knowledge, there is no conceptual or empirical work that discusses web adoption in the tourism sector in Egypt. However, there is one research conducted by Mavromatis and Buhalis (2003) that more generally investigated the activities and usage of web by Egyptian tourism

organizations. This research studied the benefits/barriers as well as incentives for web use by tourism businesses in Egypt.

The original contribution of this research lies in its focus on identifying the strength and relevance of the factors that affect the different levels of web adoption by small and medium sized enterprises, which is an area that has received little attention in literature. Additionally, studying the provision of a highly intangible service like the travel service over the web, will contribute to the existing research in tourism that has focused mainly on the impact of ICT on tourism. Finally, this study seeks to make an original contribution toward the current body of knowledge on web adoption by investigating the concept in the travel industry in Egypt which presents an important extension to the web adoption studies that focused largely on developed countries. It is worth mentioning at this point that this research includes three pieces of empirical work being one major quantitative survey, a small piece of qualitative work in the form of in-depth interviews and a small scale content analysis on travel agents' websites.

The specific objectives of the research are illustrated in the following section.

### **1.3 The Objectives of the Research**

The primary objective of this research is to examine the determinants of web adoption by firms and in particular, small and medium sized enterprises. The research's main aim is to provide empirical contributions through selecting the tourism industry as the field of application and through studying web adoption from a business to business perspective. This is done with specific reference to the tourism industry in Egypt. General research objectives are thus as follows:

1. Describe the evolution of web adoption among travel agents in Egypt in order to understand the prevailing pattern of activity.
2. Develop a theoretical framework for web adoption in the business to business context by integrating Roger's model of Innovation adoption with the Resource-based View of the firm in order to identify key antecedents of web adoption.

3. Empirically test the determinants of web adoption by travel agents in Egypt, i.e. empirically test the research framework in order to suggest the generalization of the results.

These research objectives are expected to contribute to knowledge in both theory and context. Contribution to theory will be through integrating RBV along with Roger's innovation attributes to study organizational adoption of the web. Integrating RBV along with Roger's perceived innovation attributes provides a novel theoretical framework for systematically evaluating the impact of firms' characteristics on the adoption decision. Previous studies have included various factors under firm characteristics but have not necessarily done that in a systematic fashion and the theory has not been well developed. This theoretical framework will help understand whether innovation attributes are the whole story when studying organizational adoption or whether organizational factors are also significant. Another contribution to theory will also be through testing the research framework to discover whether different factors affect different levels of adoption. Additionally testing the framework will provide an empirical contribution at the context level, Egypt which represents an extension to the web adoption studies from developed to developing countries and where there is no previous empirical work conducted. The results of this research could be generalized to countries that share similarities with Egypt in terms of nature of tourism product provided, culture, and level of web adoption as will be explained later. Another contribution at the context level will be through the first research objective that aims to describe in detail the way the web is being used by travel agents through the features provided on their web sites and how these evolve over the period of the study in order to understand the prevailing pattern of activity. This survey will show whether Egyptian travel sites are simple or sophisticated in terms of the features they provide and also the degree to which they are static or dynamic.

## **1.4 Chapter Outlines**

This section presents the structure of this research. In order to achieve the research objectives, this thesis includes, besides this introductory chapter, ten chapters. The research chapters are summarized as follows.

**Chapter 2:** This chapter focuses on reviewing the overall Internet marketing concept that is relevant in this research. The chapter aims to provide a background to the study by providing a review of the different themes of study that exist in literature on Internet marketing. The chapter begins by providing a conceptualization of Internet marketing. This includes how different authors defined Internet marketing in literature. The chapter then explains the characteristics of Internet marketing brought to it by the unique characteristics of the web. Following that the chapter discusses the key themes of existing research on Internet marketing. Five key themes are particularly discussed that are Internet marketing functions, field of application or context, conceptual foundations and strategy, consumer issues and the business perspective. In reviewing the key themes of literature on Internet marketing the chapter identifies gaps that exist and that form the foundation for the next chapter. In particular the level of web adoption by small and medium sized enterprises is identified as an area that needs more research and this is explored in chapter 3.

**Chapter 3:** this chapter presents a literature review of the factors that affect market focused Internet adoption, including the web, by firms. The chapter begins by defining the innovation construct and then discusses the adoption of innovations by organizations. The business to business context of this research is emphasized in this regard. The web as a marketing innovation is then discussed. The chapter then presents the key themes of research on innovation adoption including the studies on innovation adoption and particularly the web, from a level perspective. Following that the chapter presents a literature review of the factors that are relevant to organizational adoption of innovations, which are similar to the web. These factors are grouped into four main categories that are: innovation characteristics, organizational factors, individual factors and external factors. Thereafter, Internet adoption, including the web, by small and medium sized enterprises (SMEs) is discussed and finally gaps in literature are highlighted.

**Chapter 4:** This chapter discusses the conceptual framework of the research. It starts by discussing the key innovation adoption models in literature and in particular Roger's

theory of innovation adoption. Besides Roger's model, the technology acceptance model and the resource-based view of the firm are also discussed. Following that the chapter provides a review of existing empirical research results on the factors influencing technological innovation adoption, including the web, by organizations. The chapter then presents the proposed conceptual model for this research which is developed based on three sources that are Roger's innovation adoption model, the resource based view of the firm as well as theoretical and empirical foundations in previous innovation adoption literature. Based on this conceptual model the research hypotheses are derived and discussed.

**Chapter 5:** This chapter focuses on providing background information on the industry on which the empirical work will be conducted which is the tourism industry in Egypt. The chapter starts by providing an overview of the use of the web in the tourism industry in general including importance, benefits and challenges of web use in tourism. Following that the importance of the tourism sector in Egypt as well as the problems and challenges are presented. The different roles of key tourism institutions are then described. An overview of the current performance of the tourism industry in Egypt is then presented. The status and use of the Internet and particularly the web in Egypt are then explained.

**Chapter 6:** This chapter deals with the research methodology adopted in this research and the reason for adopting it as well as the tools and methods used in implementing the research. The chapter starts by briefly discussing the philosophy behind the methodology. This research relies on triangulation with a mixed methods research approach combining both qualitative and quantitative research methods. Thus the two methodologies used are quantitative research employing survey methods and qualitative research in the form of in-depth interviews with travel agents, which will be explained in details in the chapter eight. Additionally, a small scale content analysis is conducted to study the evolution of web adoption among travel agents in Egypt.

The research design is then discussed including the different methods used by the researcher to collect data, the structure of the questionnaire, its design and administration.

The measurement of the dependent and independent variables are discussed in details in this regard. Following that the sampling issues are explained focusing on the choice of research population, the sampling unit selection and the sample size. Finally, the techniques used to check the validity and reliability of measurement scales are discussed.

**Chapter 7:** This chapter discusses the results of a small scale content analysis conducted on Egyptian travel agents' websites. This survey addresses the first research question on the evolution of web adoption among travel agents in Egypt. It does that by identifying the status of web adoption by travel agents through the features provided on their web sites and how this status evolves over the time of the study. This is the first of three pieces of empirical work. This content analysis consists of a small scale survey done on 39 Egyptian travel agents web sites to study the evolution of travel services on these sites over a period of two years.

**Chapter 8:** This chapter discusses the qualitative work conducted in this research which consists of 12 in-depth interviews with travel agents in Egypt and the findings derived from these interviews. The chapter starts by presenting a profile of the respondents interviewed including their size, date of web adoption and their level of adoption. Three levels of adoption are considered being non adoption, simple adoption and sophisticated adoption. Following that the process of data analysis of these interviews is discussed. The main discussion of the findings from these interviews based on each factor and its effect on the three adoption decisions is then discussed. The factors are discussed under the three key themes that resulted from reviewing the literature and in line with Rogers (1962) diffusion of innovation model and the resource-based view of the firm. The chapter concludes by relating the findings of this qualitative work to the conceptual model developed in chapter four.

**Chapter 9:** this chapter focuses on the quantitative analysis conducted in this research. Its purpose is to provide preliminary insights about the data through descriptive analysis and to test the internal validity and reliability of the measurement scale through factor analysis and Cronbach alpha. The chapter starts by providing a discussion of the data

collection process including its difficulties. Descriptive analysis of the data follows. This includes general overview of the cases through frequency analysis. The demographic characteristics of the sample are then presented followed by an overall descriptive analysis of the data. Following that an independent sample t-test is conducted for adopters versus non-adopters and for simple versus sophisticated adopters to determine whether there are differences among these groups with regard to web adoption factors. The chapter then presents the validity analysis of the measurement scale through factor analysis. Finally the reliability of the measurement instrument is also tested through Cronbach alpha.

**Chapter 10:** This chapter presents the main findings of the research and the results of hypotheses testing. The chapter starts with a discussion of the analysis approach used in this research and the techniques used to analyze data which are logistic regression as well as multiple regression and the reason for using these types of regression. The factors that emerged from factor analysis were quite different from those in the conceptual model which led to the development of two different models for analysis being the imposed and emergent models. Following that analysis of whether the data meets the assumptions of the regression technique is presented. Based on the two models, emergent and imposed, the researcher tests the hypotheses and analyzes the results using logistic regression and multiple regression. Finally, a discussion of the important findings of this research is presented.

**Chapter 11:** This chapter provides a summary of the main findings of the research and discusses the theoretical and managerial implications. The limitations of the study as well as areas for future research are also discussed.

## **Chapter Two**

### **Internet Marketing: Concepts and Main Issues**

#### **2.1 Introduction**

The aim of this chapter is to contribute to the second research objective by outlining the key literature on internet and particularly web adoption and identifying the gaps within the established literature. In doing that, this chapter provides an overview on the topic of this research and sets the scene for the following chapter. The chapter begins by defining Internet marketing as a concept and discussing the different opinions that exist in literature on the impact of the Internet on the marketing function. Following that the unique characteristics of web marketing will be discussed. The chapter will then provide a detailed discussion of the four key themes in the existing literature on Internet marketing and in doing so identify the research gaps that exist. .

The advent of the Internet and specifically the web has prompted much attention and research from both academics and practitioners in the past decade. After the emergence of the Internet many studies were concerned with how it will affect the nature and future of the marketing discipline and activities. A lot of the early studies proposed that the internet will lead to a “marketing revolution” (Rayport and Sviokla, 1994; Hoffman and Novak, 1997; Aldridge et al., 1997; Hamel, 1998; Nour and Fadllala, 2000; Kenny and Marshall, 2000). Many authors thus attempted to study the impact of the internet on various aspects of marketing. Various opinions exist concerning the expected impact of the internet on firms in general and on the marketing function in particular. Porter (2001) argues that implementing internet technology by firms is not a matter of an option but is vital if firms want to remain competitive. He explains that companies should start thinking about how to complement their traditional marketing strategies with internet technology in order to gain competitive advantage in the electronic marketplace. Similarly, Brodie et al. (2007) explain that the success of e-marketing largely comes from the support and enhancement of existing marketing practices and thus both should be integrated together. Additionally, while Day and Bens (2005) view the transformational

impact of the Internet on marketing as being modest, they explain that those firms that can integrate and align the Internet with their overall strategy can create unique and lasting competitive advantage. Although early studies proposed a revolution in marketing as a result of the Internet, the dominant thinking now is that the Internet should be an integral part of the marketing practice.

This internet revolution is also true in the tourism industry where it is becoming easier than ever before to travel around the world and stay in touch with people who live far away. More and more travellers are using the web to fulfill their travel-related tasks, ranging from seeking information and tips, making travel transactions to fostering relationships with people from all over the world and finding travel companions (Wang et al., 2002). The technologies including the web have affected the way tourism organizations conduct their business, and particularly the way they distribute their products (Buhalis, 1998; Buhalis and Licata, 2002). More and more consumers can undertake their entire tourism product search and booking online and thus they require flexible, personalized, accessible, interactive products and communications with tourism organizations. It was even found that the web has a positive impact on destination satisfaction through satisfaction with the information sought on the Net (Castaneda et al., 2007). Therefore, tourism organizations need to make use of the new technology to adopt innovative methods and enhance their competitiveness (Garces et. al, 2004).

## **2.2 Conceptualization of Internet Marketing**

Internet marketing, online marketing, electronic marketing, web marketing, or digital marketing are all different names that have been used interchangeably in the literature to refer to marketing that occurs via the hyper media of the Internet. Some researchers viewed the internet as a new channel of distribution that affects the marketing function mainly in the area of transferring goods and services (Pitt et al., 1999; Doherty and Ellis-Chadwick, 2000; Anderson and Anderson, 2002). Nagi (2003) defined electronic marketing as “the transfer of goods and services from sellers to buyers that includes one or more electronic methods or media”. Other researchers argued that the Internet is a

medium and a market in itself and that it affects marketing in a much broader context than distribution. Barwise and Farley (2005) defined Internet marketing to include “internet advertising and sponsorship, marketing websites and extranets, e-mail marketing, online promotions and incentives and new media.” They thus focused on the interactive nature of the Internet in marketing communication and promotion. Stewart and Pavlou (2002) added that the internet is a new marketing channel for interactive marketing that allows new forms of communication with the customer and affects elements of the marketing mix such as distribution, product design and pricing.

It is obvious from the above that what researchers understand by internet marketing is quite diverse. They are talking about a more interactive, more personalized, better targeted form of marketing. What is important to realize is that although there is wide diversity in interpreting how the internet will affect marketing, internet marketing forms an extension to traditional marketing but through a different medium that possesses different characteristics. The following table (2.1) is an illustration of these unique characteristics of Internet marketing that are brought to it by the inherent characteristics of the web.

**Table (2.1): Characteristics of web marketing**

Characteristics	Authors	Comment
1-Interactive,two-way communication model is applied.	Song and Zinkhan, 2008; Yadav and Varadarjan, 2005; Fiore et al., 2005; Hoffman and Novak, 1996/1997; Hamel, 1998; Aldridge et. al, 1997; Varadarajan & Yadav, 2002; Rowley, 2001; Venkatraman and Henderson, 1998, Doren et al., 2000; Parsons et al., 1998; O’Connor and O’Keefe, 1997; Hodkinson et al., 2000; Chaffey, 2000.	Communication between the company and its customers occurs in two directions, from the company to the customers and from the customers to the company. This is a departure from the traditional mass communication models that assume a passive consumer. In web marketing, the consumer chooses whether or not to interact with the firm, initiates the interaction whenever he/ she wants and exercises much more control over the content he/she interacts with.
2-Customized , one-to-one marketing	Yadav and Varadarjan, 2005; Day and Bens,	The interactive nature of the internet provides an alternative to mass

	<p>2005; Hoffman and Novak and Chatterjee, 1996; Weiber and Kollmann, 1998; Bakos, 1998; Shama, 2001; Hamel, 1998; Bitner et al., 2000; Hodgkinson et al., 2000; Watson &amp; Zinkhan, 1997; Venkatraman and Henderson, 1998; Chaffey, 2000.</p>	<p>media communication by allowing a more personalized communication that can serve the needs of individual customers. With the Increased “addressability” of this communication (Blatterberg and Deighton, 1991), firms are able to send content to smaller groups of customers or even to individual customers. Consumers can enter into a “dialogue” communication with firms whereby their information and preferences can be known. The internet’s ability to capture information about consumers from their previous online purchases or navigational behavior further enhances its ability to provide more customer tailored products and services.</p>
<p>3-Consumer as a partner rather than a target.</p>	<p>McKenna, 1995; Hoffman and Novak, 1997; Zinkhan, 2002; Urban et. al, 2000;</p>	<p>Web marketing allows a shift in channel power in favour of end consumers. This shift has significant implications for consumer participation in the marketing process. Consumers can now assume new roles including not only participation in idea generation and product design but also in the marketing communication effort itself. The interactivity of the web and the information readily available to the consumer further enforces this increasing power of the consumer.</p>
<p>4-Information-intensive</p>	<p>Jepsen, 2007; Bakos, 1991; Shama, 2001; Anderson and Anderson, 2002; Varadarajan, &amp; Yadav, 2002; Pitt et al., 1999; Vijayasathy, 2002; Evans and Wurster, 1999; Breitenbach and Doren, 1998.</p>	<p>Consumers can access a great deal of information about companies, products, competitors and prices through the web at their convenience and 24 hours a day, 7 days a week. Thus consumers’ information search cost is diminished through the electronic marketplace. Although being information-intensive, internet marketing fails to demonstrate product variety as a physical store does and does not convey the “live”</p>

		experience associated with physical shopping.
5- Dynamic	Zhang et al., 2005; Ainscough and Luckett, 1996; Zinkhan, 2002; Rayman-Bacchus and Molina, 2001; Venkatraman, 2000; Breitenbach and Doren, 1998; Berthon et al, 1997; Joines et al., 2003.	Hypermedia is much more dynamic in comparison to traditional media. It is possible to make last minute changes and additions both quickly and simply. Information on the internet can be continuously updated and expanded at a relatively lower cost. This feature allows internet marketing to be flexible in meeting changing needs within the market. This dynamism of web marketing facilitates as well the provision of online customer support and online customer feedback.

Having demonstrated the key features on internet marketing, the next section will provide an overview of the key lines of research in existing literature on internet marketing.

### **2.3 Internet Marketing: Key themes in existing literature**

Existing literature on internet marketing can be described as diverse and somehow fragmented with many attempts to discover the impact of the internet on the various aspects of marketing. After an extensive review of literature on internet marketing, it is suggested that the key themes of existing research can be classified under four main categories that are: Internet marketing functions, conceptual foundations and strategy, consumer issues and the business perspective. This section will illustrate the key lines of research under each of these categories.

It is worth mentioning at this point that the studies conducted under these key themes have several things in common. First, these studies had a main focus which was to identify the impact of the Internet on the different areas of the marketing practice. Second, the early thinking in these studies was that the Internet will have a transformational impact on marketing. Third, these studies were mainly conceptual in nature with researchers trying to propose how and in which areas the will Internet have its largest impact. However, as more empirical studies have been conducted recently

under these key themes, this thinking has changed. The dominant thinking now is that existing marketing practices and the Internet should be integrated together to gain competitive advantage in the electronic marketplace.

### **2.3.1 Marketing functions through the medium of the Internet**

Researches that deal with Internet marketing functions cover the main functions of marketing which are the elements of the marketing mix being promotion, distribution, pricing and product. This is one of the extensively researched areas in internet marketing with a particular emphasis given to distribution. Researchers attempted to discover how the internet will impact elements of the marketing mix and the expected changes as well as the new expected roles that may result from incorporating the internet into these marketing functions. The following paragraphs will include a brief background on internet marketing research covering these functions highlighting the evolution in thinking on how the Internet will affect the elements of the marketing mix.

There has been a lot of debate in literature on whether the Internet will threaten the existence of intermediaries and companies will therefore interact directly with their customers without the assistance of retailers or wholesalers or whether intermediaries' role will be intensified and will change to meet the new opportunities offered by the electronic marketplace (Benjamin and Wigand, 1995; Hoffman and Novak, 1996; Bakos, 1998; Sakar et al., 1998; Anderson and Anderson, 2002; Chircu and Kauffman, 1999; Pitt et al., 1999). Although the early thinking was more toward the elimination of intermediaries and the direct interaction between suppliers and end consumers, there is consensus nowadays that intermediaries will remain but will assume new roles to fit the new technology.

The term “disintermediation” describes the bypassing process whereby the ultimate supplier of the product or service skips intermediaries and sells directly to the end customer (Harrison, 2004). Hoffman and Novak (1996) argue that the web provides an efficient channel for advertising, marketing and even direct distribution of certain products and information services thus implying that it may as well act as a substitute for

traditional channels. Additionally, Ghosh (1998) sheds light on how the internet presents an opportunity for an organization to control the electronic channel. He argues that the traditional reasons for having many suppliers in an industry are not relevant on the internet and contends that the web is a natural concentrating medium. He further explains that an organization can control the channel by becoming the site that can satisfy all the different needs of customers. On the contrary, Sakar et al.(1998) explain that electronic marketplaces will lead to a new class of intermediaries called cybermediaries to be created that will operate in electronic markets to facilitate the exchanges between producers and consumers by meeting the needs of both.

Although different opinions exist on the intermediation versus disintermediation effect of the internet on distribution, more and more researchers are reaching a consensus on that intermediaries will not disappear and at the same time will not remain the same. New forms of intermediaries, cybermediaries will be created and will assume new roles that are adapted to the new technology in order to meet the changing needs of buyers and suppliers. In fact, many researchers argue that the Internet has created an entirely new type of intermediary (Smith and Manna, 2004). Luo and Donthu (2007) explain that recent evidence of online retailing suggests that disintermediation predictions were short-sighted and that cyber intermediaries will continue to add value in the producer and consumer chain, benefiting both producers and consumers. Thus a more reasonable view of the effect of the Internet on distribution channels is that it will alter but not abolish middleman (Shunk et al., 2007).

Promotion and communication via the internet is an area that has also received considerable attention from researchers. There is a consensus among studies that the unique characteristics of the Internet provide firms with a lot of opportunities and advantages in terms of communication at both the B2B and B2C levels.

Several studies attempted to identify key features of electronic media that are believed to bring a major change in the way firms communicate with their customers. The interactivity of electronic media, one of its key features, is argued to have a considerable

impact on how businesses interact with their customers (Alba et al, 1997, Hoffman and Novak, 1996, Stewart and Pavlou, 2002). Yadav and Varadarjan (2005) conceptualize interactivity as a characteristic of computer-mediated communication that involves bidirectionality, timeliness, mutual controllability and responsiveness of the communication as perceived by both firms and consumers. The promotional strategies that are more suitable to these unique characteristics of the WWW have also been studied. (McCoy et al., 2007; Doren et al., 2000; Breitenbach and Doren, 1998; Rowley, 2001). Being the main vehicle of communication in internet marketing, web sites have received considerable attention in research. Areas explored include online quality factors of web-based information systems including information quality, system quality and service quality necessary to maintain web sustainability, how to measure web sites' effectiveness, the different levels of interactivity of web sites, how to draw traffic to web sites, how to turn website visitors into buyers and how to measure websites' success (Schlosser et al., 2006; Hong, 2007; Lin, 2007; Baraglia and Silverstri, 2007; Belanger et al., 2006; Nelson, et al., 2005; DeLone and McLean, 2003, 2004; Hoffman et. al, 1995; Hoffman and Novak, 1996; Berthon et al., 1997; Watson and Zinkhan, 1997; Dholakia and Rego, 1998; Luna et al., 2002; Stewart and Pavlou, 2002; Zeithamal et al., 2002; Davidoff et al., 2000).

Pricing on the internet has focused mainly on how this new channel will affect prices. Whether the internet will turn competition down to prices and there will be no chance for companies to differentiate their offerings or whether the internet will create new ways in which companies can differentiate their products is one of the areas tackled (Smith, 2002). Since one of the most significant changes in internet markets is the dramatic decrease in consumer search costs (Bakos, 1997), it is argued that consumers will benefit from this at the expense of retailers by being able to quickly compare prices and product offerings of many retailers until they find a best deal (Smith, 2002). Since customers can find price information in online markets easily and inexpensively, it is expected that online price dispersion will be small. Whether price dispersion or price sensitivity is higher in the online market when compared to the offline markets and the drivers of price dispersion have thus been areas of focus in pricing on the internet (Clemons et al, 2002;

Smith and Brynjolfsson, 2001). Research findings reflect opposing views in this regard with some arguing that the internet will provide more competitive markets due to the price information availability (Bakos, 1997), while others (Clemons et al., 2002; Pan et al, 2002) arguing that price dispersion is still substantial in electronic markets and not narrower than in conventional markets, a matter that indicates that electronic markets are not more competitive. More recent empirical studies found that that there are significant price differences and persistent price dispersions in online markets (Ancarani and Shankar, 2004; Baye et al., 2003). Researchers are attempting to discover the reasons for price differences and persistent price dispersions in online markets (Xing et al., 2006; Iyer and Pazgal, 2003).

The literature about products and the Internet has focused to a large extent on the suitability of various product types to the online markets. There is a consensus among researchers that both the characteristics of the product and the fit between the product and the electronic medium are important to consider when considering the suitability of the product to the online market.

Steinfeld et al. (2005) based on an empirical B2B study explain that the characteristics of the product can influence the way an online channel might be used due to variations in factors such as physical properties of the product, the value of the product and the frequency with which the product is purchased. Similarly, Alba et al (1997) recognized the importance of product types in their comparison of the benefits and costs to consumers of six retail options including the internet. They concluded that product and consumer characteristics will both influence the evaluation and selection of a particular medium. Moreover, Phau and Poon (2000) studied the factors that affect the types of products to be purchased over the internet. They found that products and services that are not costly, are frequently purchased, are intangible and are relatively more differentiated than others are more likely to be purchased via the internet. Vijayasarathy (2002) found that intangible products are more likely to be sold via the internet than tangible ones. Some of the widely used variables in determining the potential selling success of different products over the web are the standardization level of the product, how

experimental the purchase of the product is and the risk inherent in purchasing the product (Alba et al., 1997; Poon and Joseph, 2000). Based on a B2C empirical study , Moon et al. (2008) indicate that customers can select from various product attributes ending up with a final product that represents their individual preferences and thus online retailing must take into consideration the importance of personalization of product offerings. The above studies have a common theme which is that any study of the internet that fails to recognize product differences would be misleading and that the concept of fit or congruence between product and channel characteristics is a valid one.

### **2.3.2 Conceptual foundations and strategy**

Another group of researchers attempted to lay down the conceptual foundations and theory related to marketing on the Internet (Hoffman and Novak, 1996; John et al., 1999; Achrol and Kotler, 1999; Hoffman and Novak, 1997; Samiee, 1998; Keeny and Marshall, 2000; Mckenna, 1995; Rayport and Sviokla, 1994; Baker et al., 1998; Allen and Fjermestad, 2001; Porter, 2001). The main aim of this line of research was to discover whether the marketing concepts and theories that govern the marketing decisions in the traditional context are similar or different from those in the electronic context.

It is necessary to mention however that this research was done at an early stage but has become less popular for researchers now after the Internet has already been implemented in all different fields and thus this line of research has become less of an issue.

Hoffman and Novak (1996) attempted to conceptualize the role of marketing in hypermedia computer-mediated environments. They assert that hypermedia present a fundamentally different environment for marketing activities than traditional media. According to them, advertising and communication models have to be adapted and reconstructed to meet the inherent characteristics of the web. In addition they argue that customer interaction will also change as customers will assume more roles in the design of products and development of marketing strategy. Achrol and Kotler (1999) made a similar attempt when they studied the role of marketing in network economy. They

emphasized that the philosophy of marketing is likely to retain its core values and beliefs—those that espouse that customer welfare is the ultimate goal of all marketing activities. Successful networks will be more customer-focused and market-driven and will deliver better value and satisfaction than ever before. However, in network organizations, marketing is pushed closer to being an agent of the customer as opposed to the agent of the firm or seller. Similarly, Baker et al. (1998) claimed that the internet technology is changing the focus of marketing, enabling more interaction than ever before and building of relationships. Moreover, Allen and Fjermestad (2001) claimed that the internet has significant implications for the whole marketing mix, including advertising, research, sales, promotion, distribution and customer support. Porter (2001) on the other hand, argued that the internet will not change the basic rules of business; the existing value chain model still applies but needs to be modified in light of the internet and electronic technologies.

Although the above mentioned studies aimed to explore the marketing concepts and theories in the electronic era, most of these studies were theoretical in nature and need to be tested in order to actually determine which aspects of marketing are really changing as a result of the new technology.

Moving to strategy, a lot of the early work done tried to identify the different strategies needed by firms to cope with the challenges posed by the Internet and that would help firms achieve sustainable competitive advantage in the electronic marketplace. However, now that strategy has been put into practice it is becoming more apparent that sustainable competitive advantage is not derived through the use of the Internet only but through an alignment between a firm's existing strategy, distinctive capabilities and processes, and the Internet. The following paragraphs discuss some of the researches that focused on studying the relationship between strategy and the Internet.

Early researchers focused on examining how will the marketing strategy change as a result of the opportunities and threats created by the electronic medium. As for developing competitive advantage in the marketplace, Porter (2001) explains that

Internet technologies provide better opportunities for companies to establish distinctive strategic positioning. He explains that the internet affects operational effectiveness and strategic positioning in different ways. Whereas the internet makes it more difficult for companies to sustain operational advantages, it opens new opportunities for achieving or strengthening a distinctive strategic positioning. Sustaining operational effectiveness is difficult since once a company establishes a new best practice, its rivals tend to copy it quickly. This leads to competitive convergence which results into many companies doing the same things in the same ways. Customers end up making decisions based on price, therefore undermining industry profitability. Thus one of the main challenges of competing in the market space is the ability to create sustainable competitive advantage. Porter (2001) stresses that if a company can not be more operationally effective than its rivals, the only way to generate higher levels of economic value is to gain a cost advantage or price premium by competing in a distinctive way and that without a distinctive strategic direction, speed and flexibility lead nowhere. He asserts that when it comes to reinforcing a distinctive strategy, the internet provides a better technological platform than previous generations of IT. In a similar attempt to determine the impact of the internet on strategy, Varadarajan and Yadav (2002) developed a conceptual framework that highlights the role of the internet as an enabler and driver of competitive marketing strategy. According to them, competing in the electronic marketplace requires viewing the marketing strategy from a broader scope and recognizing the potential of the internet in enhancing the effectiveness of a firm's marketing strategy.

More recent studies focused on how the Internet will help firms gain competitive advantage. Javalgi et al. (2005) indicate that Internet firms that offer unique value derived through technology will be able to leverage their e-commerce competencies for sustainable competitive advantage, global expansion and market dominance. Additionally, Beheshti et al., (2006) contend that integrating information and electronic technology into business processes and strategies and actually implementing it can provide a unique opportunity for the firm to sustain or enhance its competitiveness by lowering costs, boosting sales, and improving customer service and supply/chain distribution. Moreover, Based on an empirical B2B study, Singh et al.(2007) found that

multinational companies based in the US and Australia use the Internet as a tool to enhance their competitive intelligence, stream line operations and enhance their marketing processes.

Thus, it is obvious from the above that the Internet is seen has having the potential to allow firms to leverage their competitive advantage and enhance their marketing processes.

### **2.3.3 Consumer Issues**

Existing research on internet marketing has focused on its implications for consumers. A recent study by Schibrowsky et al. (2007) on the state of internet marketing research found that out of a total of 902 Internet marketing articles published between 1992 and 2004, the three most researched areas were consumer behaviour with 253 articles or 27% of all articles, internet strategy with 201 articles or 22% and internet communications with 155 articles or 17% of all articles.

Specific consumer research foci include, but are not restricted to, consumers' choices among different channels and what drives them to the online channel (Choudhury and Karahanna, 2008; Frambach et al., 2007; Montoya-Weiss and Grewel, 2003;; Kaufman-Scarborough and Lindquist, 2002; Poel and Leunis, 1999; Shoenbachler and Gorde, 2002; Reibstein, 2002; Alba et al.,1997), web characteristics and implications of that on interactions with consumers (Fiore et al., 2005; Hoffman and Novak, 1997; Hoffman and Novak and Chatterjee, 1995; McKenna, 1995; Keeny and Marshall, 2000; Chaffey, 2000); typology of online customers (Kau et al, 2003; Mathwick, 2002), consumer motivations for web use including perceived benefits and risks of online shopping and use of technology (Jose-Cebezudo, 2008; Im et al., 2008; Forsythe, 2006; Joines et al, 2003), consumer search behaviour and purchasing process via the web (Jepsen, 2007; Pavlou and Fygenson, 2006; Rowley, 2000; McGaughey and Manson, 2001; Bruce, 1999), how to attract customers to web sites and how to retain them (Boehm, 2008; Hoffman and Novak, 2000; Parsons et al, 1998; Reibsten, 2002 ), how to reach customer satisfaction and loyalty in the online market (Anderson and Srinivasan, 2003).

These studies focused on the impact of internet marketing on consumers and thus aimed to discover how to create business via this new electronic medium and how to regulate the relationship between firms and customers via the web to capitalize on the opportunities created. According to Niininen et al. (2007), the Internet has changed the way goods and services are purchased and has empowered customers on three levels. First, customers can now make more informed purchases as information is more accessible to them, second; customers can interact with other customers from different parts of the world and exchange opinions through e-word of mouth. Finally, the internet has allowed more personalized interaction between companies and their customers and thus allowed the provision of tailor made products (Niininen et al., 2007). In addition to the above mentioned studies, another line of research focused on finding out what factors actually lead consumers to adopt the internet. These studies considered the impact of innovation characteristics such as relative advantage, ease of use, perceived risk, and consumer characteristics such as demographics and innovativeness on adoption (Arts et al., 2005; Steenkamp and Burgess, 2002).

### **2.3.4 The Business Perspective**

Just as there has been a lot of focus on the consumer, considerable attention has also been devoted in the E-marketing literature to the firm. Among the areas that have been extensively researched is the type of activities that firms can perform in the virtual world and whether these are replicable to the traditional offline activities given the unique characteristics and the opportunities created by the web. It is thought that companies can perform any activities they do in the offline market in the online market. This includes taking and placing orders, finding new business opportunities, communicating with other business partners and consumers, receiving and disseminating information, bypassing traditional channels and augmenting traditional markets and others (Eder and Darter, 1998; Palmer and Griffith, 1998; Palumbo and Herbig, 1998).

However, besides understanding the tactical level activities that firms can perform over the web, it is important to understand the strategic value of the e-marketing environment and the implications of that on the firm. There are some optimistic views saying that the

web can be used to enhance companies' positions in strategic areas such as innovation, production and service management, management of market segments and niches, research and development and others (Karakaya and Karakaya, 1998; Kambil, 1995; Prakash, 1996).

Besides identifying the activities that firms can do in the online context, other researchers were concerned with finding out the advantages and disadvantages of firms going online in an attempt to understand the benefits that companies can realize and the problems they may encounter from going online. Some of the outlined advantages include achieving international visibility, being exposed to global business opportunities, ability to conduct personalized and interactive advertising, tightening customer relations by encouraging dialogue, increased efficiency in the business-to-business transactions, better order tracking, and reaching a larger audience (Day and Bens, 2005; Paul, 1996; Rosen and Howard, 2000). Additionally, information and communication technologies have dramatically improved communication, sales and information methods for companies (Lapierre and Denier, 2005; Wang et al., 2006). On the problems side, some of the most commonly cited disadvantages are privacy and security issues, the difficulty of setting prices at the international level, problems of disintermediation, channel conflict intensified competition, cultural differences and the lack of socialization ( Poon, 2008; Pollach, 2007; Beheshti et al. ,2006; Zittrain, 2007; Day and Bens, 2005; Paul, 1996; Rosen and Howard, 2000).

Research has also attempted to discover the implications of the online context for business to business transactions. The areas researched include the factors behind the survival and profitability of B2B e-markets, the value added functions that intermediaries provide, disintermediation and re-intermediation and how must intermediary roles evolve to sustain profitability (Day et al., 2003; Senn, 2000; Day and Bens, 2005; Carr, 2000; Yoo at al.,2002). Beheshti et al. (2006) discuss how e-business allows companies to share information with their suppliers, buyers and partners, and to better plan and manage supply and demand. Companies can also present better customer service and reduce costs of production and distribution of products and services. Erickson and Rothberg (2002)

explain how B2B e-networks offer firms with concrete efficiency advantages through aligning participants along a firm's value chain, encouraging cooperation and communication between everyone from raw material suppliers at one end to salespeople with direct customer contact at the other.

Another area that has been studied under the business perspective is the adoption of the Internet by firms and what factors affect firms' adoption of the Internet. Additionally although most researchers examined whether adoption of the Internet occurs in mere dichotomy of adopt versus non-adopt, few researchers studied adoption from a stage perspective ranging from simple ownership of a web page to having a fully interactive online facility and actually conducting transactions online. The next chapter provides an extensive review of the literature on technological and particularly Internet adoption by firms.

Researchers have also examined the implications of the online context on small and medium sized enterprises (SMEs). Areas researched include the opportunities created by this new medium for small firms such as international market access, increased visibility and improved domestic market performance (Lefebvre et al., 2005; Coviello and McAuley, 1999; Keogh et al., 1998) as well as the barriers such as the lack of financial and non-financial resources, lack of the appropriate skills, under investment in staff training and poor knowledge of the Internet start up process (Lefebvre et al., 2005; Fillis and Wagner, 2007 ). To a lesser extent there has been a focus on the factors that affect the adoption of technological innovations including the Internet by SMEs (Bengtsson et al. 2007; Bharati and Chaudhury, 2006; Lynskey, 2004).

## **2.4 Conclusions**

A review of the key themes of existing literature on Internet marketing, suggests that research efforts have focused on determining the impact of the Internet on the marketing practice by studying various aspects of marketing and finding how they are being affected. The important point to note here is that although a hugely transformational

impact on marketing was expected when the Internet first emerged in the early 1990s, the dominant thinking now is that Internet marketing practices should be built upon already existing marketing principles and that Internet marketing should be viewed as complementary to traditional marketing.

An area that has received little attention in research and that is not less important than the areas already tackled is web adoption for marketing purposes by small and medium sized enterprises (SMEs in a developing country context. In particular, there is a need for further research to understand the reasons why these companies adopt or not adopt the web and the way they use web sites to interact with customers. Discovering factors that lead SMEs to adopt the web will provide information on how to enhance drivers and overcome challenges to web adoption by these firms in order to make maximum use of the web.

Although there is a plenty of literature on adoption of new technology including the Internet, only a handful of studies looked specifically at the tourism industry. Being a global, dynamic and information intensive industry, the tourism industry is in more and more need to capture the opportunities and cope with the challenges posed by the electronic market. Therefore, knowledge of the factors that have an impact on firms' decision to adopt the web in the tourism industry will surely provide valuable information to help enhance the competitiveness of such a global industry.

Having discussed the key themes of internet marketing literature and outlined the areas that need more research, this chapter has contributed to the second research objective and set the scene for the following chapter. Chapter 3 will discuss Internet adoption by firms with a particular focus on small and medium sizes enterprises.

# **Chapter Three**

## **Internet Adoption by Firms**

### **3.1 Introduction**

The aim of this chapter is to contribute to the second research objective by identifying and carefully outlining the commonly cited factors that have been studied in literature and that have impacted technological innovation adoption by organizations. The chapter begins by defining the innovation adoption construct and then moves to explain organizational adoption of innovations. The web as an innovation will then be defined. Key themes of innovation adoption literature will then be presented. The levels of innovation adoption, particularly the web, as proposed by different researchers, will then be illustrated in a table and a graph. Following that a literature review on technological innovation adoption including the web will be illustrated and the main factors that affect web adoption by organizations identified. A review of empirical research results on the factors influencing technological innovation adoption by organizations will then be provided. Finally internet adoption including the web by small and medium sized enterprises (SMEs) will be discussed and gaps in literature highlighted.

### **3.2 Defining the Innovation construct**

Rogers (1962, p.13) seminal text defined an innovation as “an idea perceived as new by the individual.” Rogers and Shoemaker (1971) and Rogers (1983) broadened this definition to include an “idea, practice or object that is perceived as new by an individual.” These definitions have been used more often in literature to refer to the consumer as the potential adopter of the innovation. Later on, the innovation definition was broadened to include the individual or any other unit of adoption under study (Rogers, 2003, p.12). It is worth noting that the key to defining an innovation is the perception of the product by potential adopters (Robertson and Gatignon, 1986). Thus if the idea, practice or object is perceived as new to the individual or unit of adoption, it is considered as an innovation to them (Lockett and Littler, 1997).

From an organizational perspective, an innovation has been defined as an idea or behaviour, whether a system, policy, program, device, process, product or service, that is perceived as new to the adopting organization (Damanpour and Evan, 1984). Dewar and Dutton (1986) gave a more general definition being any product, service or system perceived as new by the adopters in an organization. Thus they also emphasized individual adopters within these organizations rather than the organization as a whole.

Despite the various studies on the topic of innovation, there is still a lack of agreement on a single definition for innovation (Wan et al., 2005). This might be due to the fact that there is difficulty in agreeing on a method to measure innovation (Ravichandran, 1999). Kimberly (1981) describes three uses of the term innovation: innovation as a process; innovation as discrete items including products, programs or services and innovation as an attribute of firms (i.e. innovativeness). Additionally, researchers further broke down innovation into different types being technical and administrative, product and process and, radical and incremental which complicated the process of defining an innovation due to the varying definitions provided in different studies (Damanpour, 1987; Kimberly and Evansiko, 1981; Gopalakrishnan and Damanpour, 2000; Ravichandran, 1999).

This research uses Roger's (2003, p.12) definition of innovation which is "an idea, practice, or object that is perceived as new by an individual or other unit of adoption." This definition is a broad and general one that emphasizes the perception of newness by the unit of adoption for something to be considered an innovation.

### **3.3 Organizational innovation adoption**

The focus of this research is on the adoption of innovations by organizations. Organizations have different decision making processes from consumers, who have been heavily focused on in innovation research, and thus the factors influencing businesses adoption decisions maybe different. For example, organizational adoption decision maybe affected by the characteristics of the organization such as size, level of IT knowledge of employees and others that are unique to the organization. Identifying why and how organizational adoption of technological innovations occurs is fundamental for

ensuring successful adoption (Swanson and Wang, 2005). There has been a focus in the past years to analyze the factors that led to technological innovation adoptions by firms (Bayo-Moriones and Lera-Lopez, 2007; Dubelaar et al., 2005; Ferneley and Bell, 2006; Lefebvre et al., 2005). It is worth noting, however, that these factors have been chosen pragmatically and not based on a theoretical framework pertinent to the organization. A discussion of these factors is included in section 3.6. At this stage it is important to acknowledge the different ways that researchers used to define and explain how innovation occurs in organizations.

Utterback (1971) explained that innovation behaviours often start when organizational members recognize either a need for change that is usually triggered by performance gap, or a new opportunity appears, for example new technology that promises to enhance organizational performance. Zaltman et al. (1973) added to this by arguing that performance gaps initiate a need for change and thus lead to the search for an innovation which may be perceived as a solution. They mentioned that performance gaps may be perceived as a result of an environmental opportunity or a threat as well as a weakness/strength within the organization. According to them, organizations innovate in order to close this perceived performance gap. Thus, it can be concluded that innovation occurs as a result of an existing performance gap or a need for change or both.

Different opinions exist concerning when an innovation should be considered as being adopted. Aiken et al. (1980) explained that an innovation is considered adopted when a new idea is proposed, or a decision for its adoption is taken. Damanpour (1987) on the other hand, argued that an innovation does not occur when a new idea is generated, but rather when the new idea is implemented. An innovation is not considered implemented when the decision for its adoption is made, but rather when its actual implementation by organizational members has started. Damanpour (1987) explains that organizations adopt innovations in order to maintain or enhance their performance, thus innovations cannot influence performance until they have actually been put into use. Damanpour (1991) later defined the adoption of an innovation to encompass “the generation, development, and implementation of new ideas, products, services or processes.” In general, innovation is

seen as consisting of three phases that are initiation, adoption and implementation (Rogers, 1983). Initiation focuses on the awareness of an upcoming change either due to internal or external pressure. This usually leads to innovation adoption which involves commitment of required resources to the innovation that is being considered. Finally, implementation or the delivery of the innovation takes place (Pervan et al., 2005).

### **3.4 The Web as an innovation**

The Web is viewed as a computer mediated communication including information dissemination and retrieval that involves data exchanges taking place on a global collection of computer networks using TCP/IP protocol suit for data transfer (December, 1996; Brock and Zhou, 2005).

The web is regarded as an innovation of unique characteristics. First, the web is not a simple innovation; instead it is a group of separate innovations (Prescott and Conger, 1995; White et al., 1998). Companies can choose which of these innovations they can make use of and in what sequence. The web being a combination of innovations can imply that each group of innovations can serve different roles and purposes within the marketing activities of a firm (Houghton and Winklhofer, 2002).

Second, the Web is regarded as a “discontinuous innovation””, that is, an innovation which changes existing patterns of production or consumption or creates new patterns of consumption (Robertson, 1971). The Web can thus be regarded as a new service that utilizes technology and that is perceived to have significant consequences for existing production or consumption patterns within a society.

### **3.5 Literature Review on innovation adoption**

This section will highlight the key themes of research on technological innovation adoption including the web and the areas that have been focused on as well as the gaps.

Innovation has been conceptualized in literature in different ways and studied from several perspectives. Distinctions have been made between studies of adoption versus diffusion of innovations (Kimberly, 1981), innovations at different levels of analysis (e.g. individuals, organizations or societies), innovation as a dichotomous variable indicating either adoption or non-adoption versus as a process of distinct and separate stages (Houghton and Winklhofer, 2002). The following provides a review of the key themes of research in innovation adoption literature.

### **3.5.1 Innovation adoption as a dichotomy**

A substantial amount of research studied technological innovation adoption in general and web adoption in particular as a dichotomous variable reflecting adoption versus non-adoption and attempted to identify the factors that are facilitators of innovation (Premkumar, 2003; Sultan and Chan, 2000; Premkumar & Roberts, 1999; Teo and Ranganathan, 2004; To and Ngai, 2006; Frambach, et al., 1998; Malhotra and Singh, 2007) as well as the characteristics of adopters versus non-adopters (Goode & Stevens, 2000). The outcome of these researches has been an identification of a large number of variables as possible determinants of innovation adoption by organizations. A detailed discussion of these factors and how they have been grouped in literature is provided in section 3.6.

Some researchers have attempted to relate determinants of innovation adoption to the type of innovation. Damanpour (1987) studied the organizational factors that influence three different types of innovations that are technological, administrative and ancillary innovations. His results indicated that organizational factors are a better predictor of technological innovations than administrative or ancillary innovations, an outcome similar to that which Kimberly and Evansiko (1981) found in their study of factors influencing technological and administrative innovations in hospitals. The factors that influence radical versus incremental innovations have also been studied and similar results were found enforcing the argument that the factors that affect innovation adoption are influenced by the type of the innovation. Product versus process innovations also varied in terms of their adoption determinants (Gopalakrishnan and Damanpour, 2000).

Other researchers (Daniel& Grishaw, 2002; Lynn, 1999) attempted to relate these factors to the size of the organization. Daniel& Grishaw (2002) based on an empirical study of 1291 companies in the UK (613 large and 678 small co.) found that adoption intentions and benefits realized vary between large and small companies. The use of e-commerce for responding to competitors, providing enhanced customer services and improving relations with suppliers was more significant for small companies than for larger ones. As for the benefits realized, they found that a significantly greater proportion of smaller companies thought that the internet has helped them find new customers, improve and personalize their customer interactions and be more available than larger companies.

In general it can be argued that mixed results exist for some determinants of innovation adoption indicating positive relationship at times, negative or no relationship at others. One of the factors, around which there is much controversy, is organizational size. Whereas earlier studies suggest that adopters tend to be larger than non-adopters due to the more financial and human resources which they possess and can allocate to the adoption process (Montazemi, 1988), some recent studies found that adopters tend to be smaller than non-adopters due to the structural flexibility which allows them to cope with changing environments and thus facilitates the adoption process (Damanpour, 1992).

A main criticism of this line of research is that it assumes that innovation adoption occurs as a dichotomy and ignores the fact that adoption may occur as a process of different levels. It thus ignores the fact that IT innovation adoption is an ongoing organizational process rather than an isolated event and thus it normally has multiple levels (Cooper and Zmud, 1990; Wolfe, 1994). This leads us to the next line of research that has been tackled by small number of researchers and that is explained below.

### **3.5.2 Level of innovation adoption**

This line of research views innovation adoption as consisting of different levels of adoption (Tornatsky and Fleischer, 1990). Since the introduction of disruptive technologies such as the Internet and e-commerce is often followed by a series of

incremental innovations, the adoption of such technologies is not a binary process, but one that involves multiple levels (Brand and Huizingh, 2008). According to Huizingh and Brand (2009, p.268) complex innovations like the Internet and e-commerce are considered as “multi-level phenomena” and their adoption involves more levels than simply “did not implement” and “did implement”. Relatively few researchers have studied this model of levels of adoption in a web context (Hamill and Gregory, 1997, Daniel et al., 2002; Houghton and Winklhofer, 2002; Doherty et al., 2003; Dholakia and Kshetri, 2004; Molla and Licker, 2005; Aguila-Obra and Padilla-Melendez, 2006; Huizingh and Brand, 2009) and those who have examined web adoption as consisting of different levels have tended to concentrate on a developed country context. Additionally, these studies have other limitations such as acknowledging the existence of different levels but not attempting to study the factors that affect these different levels (Hamill and Gregory, 1997), and not attempting to quantitatively test these factors (Houghton and Winklhofer, 2002).

The Internet is viewed as a cluster of innovations (Prescott and Conger, 1995) and thus different innovations consist of different levels of adoption (Daniel et al. 2002; Jones et al., 2003; Teo and Pian, 2003). These studies explain that a more basic use of the web is adopted before more advanced applications are developed. There is a significant difference between basic and advanced use of the web and this difference impacts the adoption process (Bengtsson et al., 2007). The following paragraphs provide a discussion of these studies that have considered the innovation adoption process as a series of different levels.

In their empirical study on the adoption of advanced Internet based marketing operations by Swedish firms, Bengtsson et al. (2007) explain that basic use of the Internet includes online presentation of the firm, its products and services and simple information exchange via email. On the other hand advanced use of the Internet includes two-way interaction and data processing, online ordering and payment, gathering feedback from customers and integrating the homepage into the firm’s internal functions. They, however, did not study the factors that affect these different levels of adoption.

Based on an empirical study on 45 SMEs, Dholakia and Kshetri (2004) found that internet adoption occurs in phases and that the influence pattern of determinants factors varies with the phase of adoption. They found, for example, that firm size has a significant impact on website ownership but no impact on selling on the Internet. On the other hand they found that prior technology use had a significant impact on both website ownership and selling on the Internet.

Hamill and Gregory (1997) in their survey on the impact of Internet marketing on the internationalization of SMEs, developed a five-level scale ranging from passive adoption to proactive adoption, to differentiate between the SMEs in terms of their extent of Internet adoption. They however, did not attempt to discover the factors that may affect the adoption at these different levels. While this research provided valuable insights into the fact that web adoption consists of different levels and that identifying the level at which SMEs exist is an important starting point, it did not address the reasons why some SMEs are at early levels of web adoption and why others are at more advanced levels. It thus did not address the factors that affect different levels of web adoption by SMEs.

In their empirical study of e-commerce adoption among 678 small and medium sized enterprises in the UK, Daniel et al. (2002) found four clusters of adopters namely developers, communicators, web presence and transactors. A detailed explanation of these levels is present in the following table (3.1) and shown in graph 3.1. Their findings suggested that these four clusters represented a set of sequential levels through which SMEs passed through in their adoption of e-commerce. Therefore each cluster included the activities of the previous one as well as new activities unique to it. While this research provided valuable insights into the fact that adoption consists of different levels and that these levels are interrelated and sequential, it did not address the factors behind the existence of these different levels and what do firms need to move from one level to the next.

Houghton and Winklhofer (2002) followed the same approach by developing a model of internet adoption among 23 exporting SMEs in the UK consisting of six levels. Contrary to what Daniel et al. (2002) found about adoption levels being sequential, Houghton and Winklhofer (2002) argued that internet adoption levels do not necessarily occur in a particular sequence and some levels may as well be skipped.. They also discussed that each level consists of a continuum of adoption activities ranging from low to high. Thus a web site for example could be as basic as a blank page or could be sophisticated to allow online buying and selling to occur. They found that the factors affecting Internet adoption among the exporting SMEs differ according to the extent of adoption. Considering the innovation characteristics, for example, they found that at the message level, relative advantage was the most significant factor whereas in the seeking information level, complexity was significant and in the publishing level the sense of fatalism was significant. While this research provided valuable insights into the existence of different factors behind the different levels of internet adoption, it did not attempt to quantitatively test these factors to provide generalizable results. A detailed explanation of these levels is present in the following table (3.1).

Based on an empirical study on 127 Dutch SMEs, Huizingh and Brand (2009) found that e-commerce adoption occurs in stepwise (multiple levels) and not in a binary fashion. Using variables from Roger's innovation adoption model, and investigating the difference between companies at basic and advanced levels of e-commerce, they found significant differences between basic and advanced adopters with respect to their knowledge, potential value, implementation and satisfaction with e-commerce.

Teo and Pian (2003), in their study of firms' adoption of the Internet in Singapore, proposed a model of Internet adoption ranging from levels 0 to 4. A company at level 0 has an email account but does not have a web site. Level 1 indicates internet presence whereby companies have made the adoption decision but the implementation is still in process. The second level of internet adoption, prospecting, involves limited use of the Internet through providing company information over the web. Level 3, business

integration, involves incorporating the internet into the business model and finally level 4 which is business transformation, aims to transform the business and thus represents the highest level of Internet adoption. They found that top management support does not have a significant effect on the level of Internet adoption. This result is similar to that of Thong (1999) both indicating that top management support is important for the decision to adopt or not adopt, but are not significant for levels of adoption because top management is already aware of the importance of the internet and that there is little difference in top management support among the different levels of adoption (Teo and Pian, 2003). In testing the effect of firm size on the same model of levels of web adoption they found that larger firms, measured in terms of number of employees, number of IT employees and revenue turnover, are more involved in web adoption levels 3 and 4 whereas smaller firms stay at levels 0, 1 and 2 (Teo and Pian, 2004).

The following table and graph illustrate examples of studies that have examined innovation adoption and internet in particular from a level perspective.

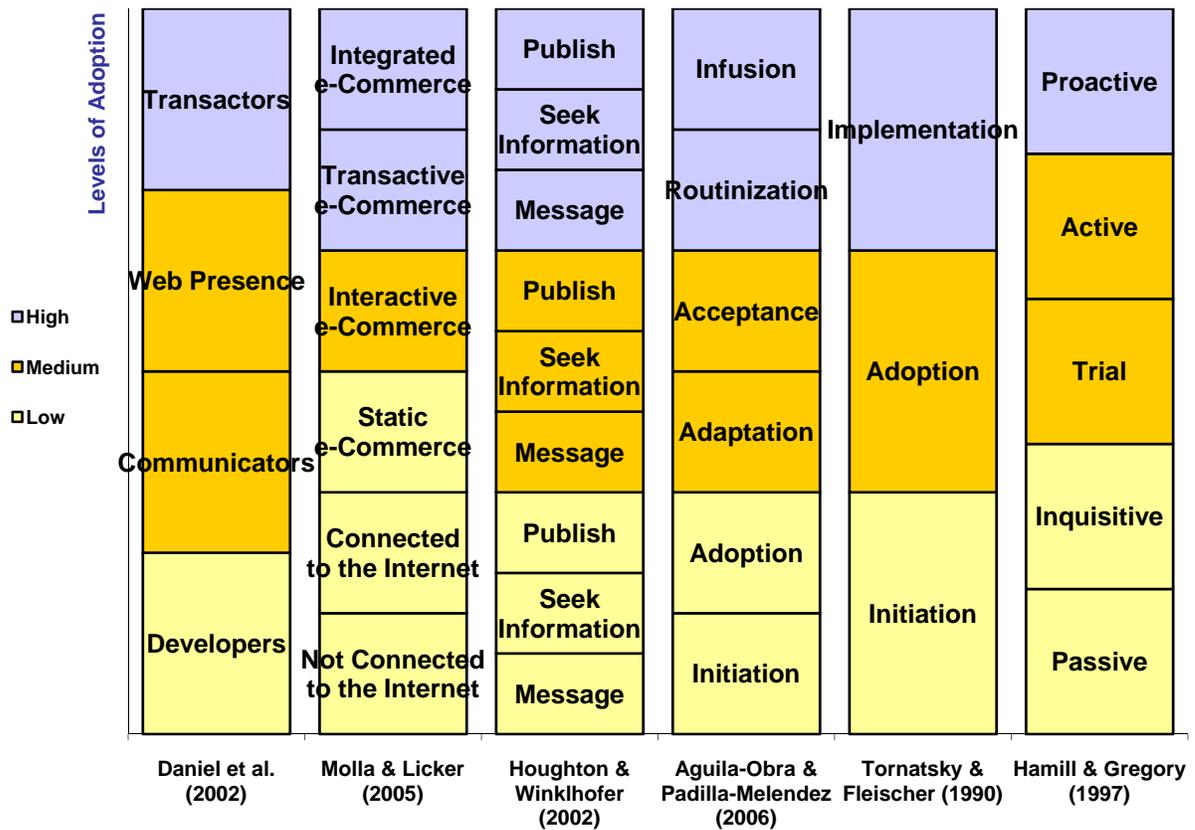
**Table (3.1): Levels Model of Innovation Adoption**

<b>Authors</b>	<b>Innovation</b>	<b>Adoption Level</b>	<b>Description</b>
Daniel, E., Wilson, H. and Myers, A. (2002).	Internet	1-Developers	Main activities include developing email communication with customers and suppliers, providing information about the company's products and services, and using the web for advertising.
		2-Communicators	Main activities include the above activities and in addition extensive use of the web to communicate with customers and suppliers, to find external information and to exchange documents among employees.
		3-Web presence	Main activities include the above activities and in addition taking and receiving orders online.
		4-Transactors	Main activities include the above activities and in addition taking orders online, providing after sales service and undertaking recruitment online.

Molla, A. and Licker, P. (2005)	e-commerce	1-Not connected to the Internet	No e-mail
		2-Connected to the Internet	e-mail exists but no web site
		3-Static e-commerce	Publishes basic company information on the web but without any interactivity.
		4-Interactive e-commerce	Accepts queries, e-mail and form entry from users.
		5-Transactive e-commerce	Online selling and purchasing of products and services including customer service.
		6- Integrated e-commerce	The website is integrated with suppliers, customers and other back office systems allowing most of the business transactions to be conducted electronically.
Houghton, K. and Winklhofer, H. (2002).	Internet	1-Message (e-mail)	Activities at the message level could range from no email capability or use of email for internal communication only to use of the internet for video conferencing or distributing the products such as software via email.
		2-Seek information (Market intelligence)	Activities at the seek information level could range from no seek information capability to use of internet as a minor source of export market research to use of internet as a main source of export market research.
		3-Publish (Advertising)	Activities at the publish level could range from no web site published to web sites developed and aimed at the export market to virtual demonstrations of products or catalogues.
Aguila-Obra, A. and Padilla-Melendez, A. (2006); Cooper and Zmud (1990)	IT	1- Initiation	Active or passive search for opportunities.
		2-Adoption	Negotiations for backing IT implementation.
		3-Adaptation	Applying IT and revising organizational procedures.
		4- Acceptance	Company members are encouraged to use the IT.
		5-Routinization	The use of the IT becomes standard.
		6-Infusion	Efficiency is increase as a consequence of the IT use.
Tornatsky and	Technological	1-Initiation	The initiation level involves gathering

Fleischer, 1990.	innovations		information about the innovation under consideration as well as evaluating this information.
		2-Adoption	The adoption level involves making a decision about whether the innovation will be used or not.
		3-Implementaiton	The implementation level involves actually introducing the innovation into the company.
Hamill and Gregory, 1997.	Internet	1-Passive	Adoption at this level involves very little knowledge of the Internet and no serious consideration to its business potential.
		2-Inquisitive	This level involves cautious assessment of the feasibility of establishing an Internet connection.
		3-Trial	The trial level includes companies at the experimental level who are using the internet only partially.
		4-Active	The level involves companies who have internet access but are not yet exploring the full potential of the web.
		5-Proactive	The level involves companies with full access to the web and who are also utilizing its full potential.

**Graph (3.1): Levels Model of Innovation Adoption**



Author

It is obvious from the above discussion and research results that the determinants of innovation adoption and Internet adoption can vary according to the stage or level of adoption that is being considered. This emphasizes the importance of taking the level approach into consideration when studying web adoption.

### 3.5.3 Diffusion of innovations

Another line of research that has been extensively studied by a large number of researchers concentrates on the diffusion of innovations. Diffusion research studies the spread of an innovation through a population of potential adopters. Rogers (2003, p.5) defines diffusion as “the process in which an innovation is communicated through certain channels over time among the members of a social system.” The objective of diffusion research is to depict the successive increases in the number of adopters of an innovation and predict the development of a diffusion process already in progress (Mahajan and

Muller, 1979). Diffusion research thus deals with the growth in the level of demand for an innovation (Norton and Bass, 1987). One of the well known models of diffusion of innovations is the Bass (1969) model of first-time demand and that focuses on the timing of innovation adoption. Factors that have been found to affect diffusion of innovations include: adopter characteristics, the social network in which the adopter exists, innovation characteristics, external/environmental characteristics, the process by which the innovation is communicated and the influence and attributes of those promoting an innovation (Rogers, 1983). A classification of adopters that are thought to have different adoption patterns (innovators, early adopters, early majority, later majority and laggards) has also been an outcome of diffusion research (Tornatzky and Fleischer, 1990).

According to Rogers (1983) the main elements of the diffusion of innovations are: an innovation, communication channels, time, and social system. It thus becomes obvious that the adoption process of an innovation lies at the heart of the diffusion paradigm (Frambach, 1993). Three main areas that have been covered extensively in diffusion research are: 1- the distribution of adopters over time, 2- innovativeness and adopter categories and 3-the individual adoption process (Brancheau and Wetherbe, 1990). The following is a brief explanation of each area:

#### *The distribution of adopters over time*

This focuses on the rate of diffusion which indicates the relative speed with which the innovation is adopted by members of a social system. It is usually measured by the number of individuals who adopt an innovation during a specified period of time. According to Rogers (1983) adopter distribution over time follows a bell-shaped curve.

#### *Innovativeness and adopter categories*

Rogers (1962) defined innovativeness among individuals as “the degree to which an individual is relatively earlier in adopting new ideas than the other members of his social system.” Building on the same concept, Rogers and Shoemaker (1971) grouped adopters of innovations into five categories based on their innovativeness namely innovators, early adopters, early majority, late majority and laggards. The level of innovativeness of each

of these categories, according to Rogers and Shoemaker (1971) is determined by three factors: socioeconomic status, personality variables, and communication behaviour. Earlier innovators, when compared to late ones, are characterized by more education, higher social status, greater exposure to mass media channels of communication, greater exposure to interpersonal channels of communication, greater change agent contact, greater social participation and more cosmopolitanism. Studying individual consumers' innovativeness, Li and Buhalis (2006) based on a survey on 634 Chinese Internet travellers, found that age, area of residence, length of time using Internet and adequate self-efficacy were among the factors influencing e-shopping adoption by Internet travellers in China. Studying organizational innovativeness, Hausman (2005) found that individual characteristics of decision makers in small firms such as educational level and experience of the owner have an effect on the innovativeness of these firms. Additionally, Harrison and Waite (2005) studied whether there are significant differences among financial services companies' adopter groups being innovators, early adopters, early majority, late majority and laggards in terms of the overall factors influencing web site adoption. They determined the adopter groups based on the number of years that the company had a website. They found that there are significant differences such as the observations that innovators and early adopters are mainly larger firms with larger turnovers and that they seem to have a clearer vision for developing the web site and are making more advanced use of it. They also found that the early majority adoption decision was mainly influenced by competitors and appear to be operating a "copy-cat" strategy.

#### *Individual adoption process*

Rogers and Shoemaker (1971) explained that individual innovation adoption does not occur as an instantaneous decision but is rather a process that consists of different stages. They developed four stages that they think a person goes through in the adoption of an innovation: knowledge, persuasion, decision and confirmation. They called this the "innovation-decision process" and defined it as "the mental process through which the individual passes from knowledge of an innovation to a decision to adopt or reject and to confirmation of this decision." The first three stages involve information gathering and

forming an attitude toward the innovation and are input to the adoption decision while the last stage involves actual buying the innovation and putting it into use (Brancheau and Wetherbe, 1990).

Having provided a review of the key themes of research in innovation adoption literature, the following section will deal with the factors that were found in literature to be relevant to technological innovation and particularly web adoption.

### **3.6 Factors influencing innovation adoption**

This section includes a literature review of the factors that are relevant to organizational adoption of innovations in general which may be relevant to the adoption of the web for marketing. It is thought that innovations that are highly technological and complex in nature are similar to the web and thus can be used as a base for comparison. The web is regarded as highly technological because it relies basically on transferring computer technology of bits and bytes into text, pictures and videos. In addition, the web is regarded as a complex innovation because it is not only one innovation in itself but a combination of different technologies and thus different innovations (Houghton and Winklhofer, 2003). Companies can choose which of these innovations they can make use of and in what sequence.

It is worth noting that research on organizational innovation adoption has identified a large number of variables as predictors of innovation adoption. Jeyaraj et al. (2006) in their review of empirical researches conducted on innovation adoption between the years 1992-2003 found that a hundred variables have been used as predictors of organizational adoption. The following tables list the factors that have been most commonly cited by different researchers and that have been particularly used to predict technological innovation adoption. These factors can be grouped into four main categories that are: innovation characteristics, organizational factors, individual factors and external factors. This grouping or something similar to it has been used by a number of researchers especially those studying the adoption of innovations by small firms (Premkumar and Roberts, 1999; Thong, 1999; Frambach et al, 1998; Frambach and Schillewaert, 2002;

Al-Qirim, 2007; Lertwongsatien & Wongpinunwatan, 2003). Table (3.2) shows the factors most commonly researched under each category.

**Table (3.2) Factors Influencing Innovation Adoption**

<b>Innovation characteristics</b>	<u>Relative advantage</u>
	Compatibility
	Complexity
	Trialability
	Observability
	Cost
	Trialability
	Perceived risk
<b>Organizational characteristics</b>	Organization size
	Organization age
	Organizational type
	Market Orientation
	Organizational learning
	Marketing capabilities
	IT knowledge
<b>Individual characteristics</b>	Work experience (tenure)
	Educational level
	Top management support
	Attitude and personality
	Response to risk
	CEO characteristics
<b>External factors</b>	Competition
	Government support

The first category relates to the innovation being adopted. Rogers' (1962), seminal text, indicated that the attributes of the innovation itself, as perceived by the adopters, have an effect on the rate of its adoption. The attributes that he discussed are: relative advantage, compatibility, complexity, trialability and observability. These attributes, have been extensively tested by different authors to determine their impact on the adoption of various innovations by consumers and more recently by organizations. Mixed results exist for the same factors indicating positive relationship at times, negative or no relationship at others. This variability in research results might be due to the context of each study. The particular nature of the innovation studied might have an effect on the factors affecting its adoption. In addition to Rogers (1962) attributes, other researchers have attempted to come up with other innovation characteristics that also have an impact on adoption. Bauer (1960), for example, has identified perceived risk to be a characteristic that also has an effect on innovation adoption. Table (3.3) provides an illustration of these factors.

**Table (3.3): Innovation characteristics**

Factor	Author	Explanation	Comment
Relative advantage	Rogers, 1962; Daniel & Grimshaw, 2002; Lockett & Littler, 1997; Premkumar & Roberts, 1999; Thong, 1999; Frambach et al., 1998; Sultan & Chan, 2000; Cragg & King, 1993; Black et. al, 2001; Al-Qirim, 2007; To and Ngai, 2006; Chong and Pervan, 2007; Lin, 2008; Al-Hajri and Tatnall, 2008.	Relative advantage deals with how potential adopters perceive the innovation in comparison to the ideas that have been previously implemented (Rogers, 1962). If the innovation is perceived to be better than the ideas it supersedes then the innovation has a relative advantage. Economic gains, improved services level, accessibility, availability are some dimensions of relative advantage as identified by different researchers (Lockett & Littler, 1997; Rogers, 1962).	A majority of the researchers have found relative advantage to be a significant factor in determining innovation adoption with a positive relationship. The very limited studies that did not find a relationship between relative advantage and innovation adoption have related that to the particular nature of the organization/ respondents that they are studying (Sultan & Chan, 2000).

Compatibility	Rogers, 1962; Tornatzy and Klein, 1982; Lockett & Littler, 1997; Thong, 1999; Frambach et al., 1998; Sultan & Chan, 2000; Black et al., 2001; Beatty et al., 2001; Teo and Pian, 2003; Grandon and Pearson, 2004; Li and Buhalis, 2006; Saffu et al., 2008; Lin, 2008.	Compatibility reflects the degree to which the innovation is consistent with current systems, previous experiences and existing values of potential adopters. Perceived compatibility of innovation has been found to positively affect the rate of adoption. (Rogers, 1962, Tornatzy and Klein, 1982).	Compatibility did not always show consistent results with regards to its effect on innovation adoption. Some researchers found a significant positive relationship (Black et al., 2001; Lockett & Littler, 1997) while others found no relationship (Sultan & Chan, 2000). The researcher thinks that this variability in results may be due to the particular nature of the innovation or the organization studied.
Complexity	Rogers, 1962; Lockett & Littler, 1997; Premkumar & Roberts, 1999; Thong, 1999; Frambach et al., 1998; Sultan & Chan, 2000; Black et al., 2001; Beatty et al., 2001; Li and Buhalis, 2006.	Complexity refers to the degree to which the potential adopters perceive the innovation to be difficult to understand and implement (Rogers, 1962).	A majority of researchers found a significant negative relationship between complexity and innovation adoption indicating that the more difficult the innovation is perceived by potential adopters, the slower its adoption. Only few studies found no significant relationship between complexity and adoption (Sultan & Chan, 2000; Beatty et al., 2001).
Trialability	Rogers, 1962; Black et al., 2001; Chong and Pervan, 2007.	Trialability reflects the degree to which an innovation can be tried on a limited basis before it is actually adopted (Rogers, 1962).	Trialability has not been tested in most of the researches on innovation adoption. Researchers expect a positive relation between trialability and innovation adoption although negative relation was also found (Chong and Pervan, 2007).

Observability	Rogers, 1962, Chong and Pervan, 2007.	Observability relates to the extent to which an innovation is visible to potential adopters (Rogers, 1962).	A positive relationship exists between observability and the rate of innovation adoption.
Cost	Doherty et al., 2003; Premkumar & Roberts, 1999; Lockett & Littler, 1997; Cragg & King, 1993.	Cost reflects the financial expenses that the potential adopters have to assume in adopting and implementing the innovation.	Researchers have found a negative relationship between cost and innovation adoption.
Perceived risk	Bauer, 1960; Ostlund, 1974; Lockett & Littler, 1997; Frambach et al., 1998; Black et al., 2001; Doherty et al., 2003.	Perceived risk may reflect the risk of error associated with using the innovation or security issues related to the innovation (Lockett & Littler, 1997).	Studies showed a negative relationship between perceived risk and innovation adoption. Perceived risk maybe more relevant in a service context where the service can not be easily evaluated before adoption (Black et al., 2001).

These studies provided valuable insights into the significance of perceived innovation attributes on the adoption of innovations. They found that the innovation adoption decision is affected by attributes of the innovation as perceived by the adopter unit and tested for the direction of relationships between each attribute and innovation adoption. However, the majority of these researches studied adoption as a dichotomous variable and did not attempt to measure the effect of each of these attributes on the level of adoption. The few studies that studied innovation adoption as a process of different levels did not attempt to study the factors that affect the adoption of each of these levels (Daniel et al., 2002). Other limitations include small sample size, variability in operationalizing the dependent variable internet adoption and context specific studies making generalizability of results quite difficult.

The second category of factors that influence innovation adoption deals with characteristics of organizations. Many researchers studying innovation adoption have focused on highlighting the factors pertinent to the organization that positively or negatively affect its adoption of innovations (Houghton & Winklhofer, 2002; Doherty et.

al, 2003; Premkumar & Roberts, 1999). Table 3.4 provides an illustration of the most commonly researched organizational factors.

**Table 3.4: Organizational Characteristics**

Factor	Author	Explanation	Comment
Organization size	Malhotra and Singh, 2007; Hong and Zhu, 2006; Bayo-Moriones and Lera-Lopez, 2007; Bruque and Moyano, 2007; Tan et al., 2007; Bengtsson et al., 2007; Fabiani et al., 2005; Harrison and Waite, 2005; Bajwa et al. 2005; Salavou et al., 2004; Premkumar & Roberts, 1999; Scupola, 2003; Drury & Farhoomand, 1999; Yao et al., 2002-2003; Thong, 1999; Frambach et al., 1989; Goode & Stevens, 2000; Kimberly & Evanisko, 1981; Damanpour, 1992 & 1987.	Organization size is one of the factors that has been frequently associated with innovation adoption. Size indirectly reflects the resources owned by the firm; financial and human. One of the most common measures of size is the number of employees (Kimberly and Evanisko, 1981). Other measures include fixed assets (Thong, 1999) and annual revenues (Hamill and Gregory, 1997).	Research results on the influence of organization size on innovation adoption have been inconsistent. While some researchers argue that size is one of the best predictors of innovation adoption with larger firms being more successful at innovation because of better access to resources i.e. financial and human (Lind, Zmud and Fischer, 1989), others claim that smaller organizations are more likely to adopt innovations because of structural flexibility (Damanpour, 1992).
Organization age	Malhotra and Singh, 2007; Salavou et al., 2004; Palvia et al., 1994; Kimberly & Evanisko, 1981; Goode & Stevens, 2000; Howcroft & Mitev, 2000; Evans, 1987; Raymond, 1985; Hurley and Hult, 1998.	Age has been used interchangeably in literature to refer to the either the company or staff. Age has been measured mainly in terms of the number of years that the organization has been in business.	Studies on ecommerce adoption have showed either negative or no relationship between age and organization innovation. Goode & Stevens, 2000 found that www adopters tend to be younger than non-adopters. They believe that this due to the more flexible structure of younger organizations that may not yet have had

			substantial infrastructure in place and this are in search for new technologies. This is contrary to earlier studies that indicate that age reflects more experience (Evans, 1987) and greater capacity to fund the adoption of innovative systems (Raymond, 1985).
Organizational Type	Bayo-Moriones and Lera-Lopez, 2007; Goode & Stevens, 2000; Drury & Farhoomand, 1999; Premkumar & King, 1994; Reich & Benbasat, 1990.	Organization type refers to the industry in which the organization operates. This may include manufacturing, retail or service industries. Businesses in different sectors have different information processing needs, and those in more information intensive sectors are more likely to adopt technological innovations than others in less information-intensive sectors (Yap, 1990).	Researches indicate that the industry in which the company operates has an effect on its information requirements and thus on its adoption of technology. (Premkumar & King, 1994; Reich & Benbasat, 1990). Service organizations, being information-intensive industries have been found to large adopters of www technology than other industries (Goode & Stevens, 2000).
Market Orientation	Jimenez-Jimenez et al., 2008; Salavou et al., 2004; Verhees and Meulenber, 2004; Leskovar-Spacapan and Bastic, 2007; Hurley and Hult, 1998.	Market orientation of the firm involves the activities of market information acquisition and dissemination and the coordinated creation of customer value.	Studies show a significant positive relationship between market orientation and innovation adoption.
Organizational learning	Lin, 2008; Jimenez-Jimenez et al., 2008; Salavou et al., 2004; Calantone et al., 2002; Akgun et al., 2007; Real et al., 2006;	Organizational learning refers to organization activities of crating and using knowledge to enhance competitive advantage (Calantone et	Studies show a significant positive relationship between organizational learning and innovation adoption.

	Hurley and Hult, 1998 ; Cohen and Levinthal, 1990 ; Mezas and Glynn, 1993.	al., 2002).	
Marketing capabilities	Poon and McPherson, 2005; Weerawardena and O’Cass, 2004; Weerawardena, 2003.	Marketing capabilities refer to the integrative processes designed to apply the collective knowledge, skills and resources of the firm to the market-related needs of the business, enabling the firm to add value to its goods and services and to meet competitive demands (Day, 1994).	Studies show either a significant positive relationship between marketing capabilities and innovation adoption or an insignificant relation (Weerawardena and O’Cass, 2004).
IT knowledge	Premkumar & Roberts, 1999; Thong, 1999; Scupola, 2003; Cragg & King, 1993; Goode & Stevens, 2000, Palvia et al., 1994; Lertwongsatien and Wongpinunwatan, 2003.	IT knowledge in literature is used to refer to either the knowledge of the manager or the employees.	Studies show a significant positive relationship between IT knowledge within the organization and innovation adoption

In addition to these main determinants of innovation adoption by organizations, other factors have been also studied but to a lesser extent. The following is a brief discussion of some of these factors.

Kimberly and Evanisko (1981) studied the effect of organizational structure on technological innovation adoption. Under organizational structure, they studied centralization, size, specialization, functional differentiation and external integration of an organization. They found that high adopting organizations tend to be large, are specialized, are highly differentiated, and are decentralized. A similar result was reached by Bajawa et al. (2005) based on an empirical study on the adoption and use of collaboration information technologies by 344 organizations in the US, Australia and Hong Kong, who found that there is a negative relationship between centralization of decision making and adoption of information technologies and that the degree of cross functional integration within the organization had a positive effect on information

technologies adoption. Additionally, Wan et al. (2005), based on an empirical study, found that decentralized organizational structures had a positive effect on firms' innovation in Singapore. They recommend that managers should pay attention to the power and benefit of decentralizing decision-making authority to lower-level managers and that this provides more flexibility for firms to be the first in introducing innovations. These results emphasize the significant effect of decentralization on innovation adoption. Damanpour (1987) added to these factors, the professionalism of an organization measured in terms of the education and experience of its members and the organizational slack measured in terms of the difference between the resources that the organization possesses and what it requires for its operations. He found that these two factors had a positive and significant effect on the adoption of technological innovations.

Other researched studied demand and supply factors and their effect on innovation adoption. Demand factors focused on the characteristics of the target market and its impact on the company's decision to adopt or not adopt an innovation. Doherty et al. (2003) for example, found that the Internet target segment was an influential factor when considering Internet adoption by UK retailers. Empirical evidence suggested that the characteristics of this target segment including their internet access, internet awareness, computer literacy, age and gender were all significant attributes that affected the internet adoption decision of retailers. Thus the main factor that affected these retailers' decision to adopt the internet was the likelihood of their target segment's adoption of the internet. Considering the supply side or the role of vendors in influencing innovation adoption by firms, Santos and Peffers (1998) found that marketing efforts by hardware and software vendors, to be one of the factors that significantly influenced ATM adoption among banks in the US between. They argue that this factor and others could have significant implications for the adoption of ecommerce among merchants in the US. They think that vendor influence has a particular importance in that respect since merchants wait for a technology that is guaranteed by vendors to be secure. Here lies the marketing role of vendors. Frambach et al (1998) building on the same idea of the role of the supplier in influencing innovation adoption, examined the effect of the marketing strategies conducted by suppliers on the adoption of electronic banking by organizations in

Netherlands. They found that the marketing strategy pursued by suppliers of the innovation had a significant and positive influence on adoption. The extent to which a supplier has implemented a strategy focused at positioning the innovation in the marketplace or has devoted effort to reducing the risk of adoption of the innovation had a positive effect on the probability of adoption.

Studying the impact of partners' cooperation along the supply and value chains, Boeker and Huo (1998) examined the influence of four organizational factors being forward integration, backward integration, product diversity and size on the timing of adoption of microcomputers by personal computer companies during the period from 1972-1986. Their results indicated that companies that had both backward integration with PC suppliers and forward integration with PC distributors were faster at adopting microcomputers than others. Product diversity which reflected the number of markets targeted also had a positive effect on the timing of microcomputer adoption. Thus these three variables speeded up the adoption decision. Size, measured in terms of the number of employees had no effect on the timing of microcomputer adoption by PC companies.

To conclude, besides the commonly cited factors affecting organizational adoption of innovations as shown in table 3.4, other factors such as decentralization, demand and supply factors, and supply and value chains partnerships do have an impact on innovation adoption by firms, These studies provided valuable insights into the importance of studying the characteristics of the organization besides innovation attributes when the adopter unit is the organization. These studies showed us that organizational factors have a significant influence on the innovation adoption decision. A main criticism of this body of research is that the choice of organizational factors has been done in a random and adhoc fashion and not in any systematic way or based on a well-developed framework like Roger's model and perceived innovation attributes. It thus becomes less clear what specific characteristics affect companies' innovation adoption decision and how these characteristics affect the innovation adoption decision by firms. Additionally, these studies studied adoption as a dichotomous variable and not as a process of different levels.

The third category of factors that influence innovation adoption deals with characteristics of decision makers within potential adopter organizations, who are entitled to make the innovation adoption decision. Indeed, much of the early work on innovation adoption by end users has really focused heavily on the characteristics of individuals. Research has attempted to identify the characteristics of innovators and early adopters of innovations, particularly the socio-economic and demographic characteristics of innovators. Researchers found that early adopters of innovations are more educated, are younger and earn higher incomes (Lockett and Littler, 1997; Kimberly & Evanisko, 1981; Brancheau & Wetherbe, 1990). Additionally, the characteristics of individuals such as their attitude toward change, risk propensity, innovativeness, opinion leadership and others have an influence on their innovation adoption decision (Lockett and Littler, 1997; Thong, 1999; Tabak and Barr, 1996). It is thought that this emphasis has been greater for B2C than B2B research where the adopter of innovations is an individual but there is evidence that individual characteristics do have relevance for organisational decisions. Individual characteristics may be particularly influential on innovation adoption when small size businesses are under study. In small size businesses usually the owner or manager makes the innovation adoption decision and thus his/her characteristics impact his/her receptiveness to change. Table 3.5 illustrates commonly researched individual factors from both organizational (Thong, 1999; Sultan and Chan, 2000) and consumer adoption literature (Lockett & Littler, 1997; Kimberly & Evanisko, 1981; Brancheau & Wetherbe, 1990)

**Table 3.5: Individual characteristics**

Factor	Author	Explanation	Comment
Work experience (tenure)	Sultan & Chan, 2000; Kimberly & Evanisko, 1981; Souitaris, 2002; Wahid and Furuholt, 2004.	This can be used to indicate the number of years that the person has spent in the job.	Mixed results exist for the relationship between work experience and innovation adoption. Some researchers found a positive relationship while others found no significant relationship.
Educational	Bayo-Moriones and	Reflects the number of	Mixed results exist for

level	Lera-Lopez, 2007; Lyskey, 2007; Li et al., 2006; Lockett & Littler, 1997; Brancheau & Wetherbe, 1990; Kimberly & Evanisko, 1981; Rogers & Shoemaker, 1971; Souitaris, 2002; Wahid and Furuholt, 2004.	years of formal education that the person has had.	the relationship between the level of education that decision makers have and their response toward innovation adoption. Although it has been found that the higher the educational level of an individual, the more receptive he is to an innovation (Rogers & Shoemaker, 1971; Kimberly & Evanisko, 1981), some researchers found a non significant relationship between these two variables (Lockett & Littler, 1997).
Top management support	Bruque and Moyano, 2007; Bengtsson et al., 2007; Doherty et al., 2003; Beatty et al., 2001; Bharati and Chaudhury, 2006; Premkumar & Roberts, 1999; Corbitt, 2000; Sultan & Chan, 2000; Cragg & King, 1993; Grover & Goslar, 1993.	Top management support is important for creating a supportive climate and providing the required resources for the adoption of new technology (Premkumar & Roberts, 1999).	A majority of studies showed a significant positive relationship between top management support and innovation adoption.
Attitude and personality	Garau Vadell and Orfila-Sintes, 2008; Tan et al., 2007; Corbitt, 2000; Schillewaert et al., 2005; Lockett & Littler, 1997; Rogers & Shoemaker, 1971.	Maybe used to refer to the attitude of decision makers toward change, the innovativeness and dynamism of decision makers, the internal personal communication exposure they have, mass media exposure they have which may translate into new ideas,	Innovators are thought to have more favourable attitude toward change, are more dynamic and more innovative. They are more involved in interpersonal communication and are more exposed to mass media.
Response to risk	Wan et al., 2005; Sultan & Chan, 2000; Lockett & Littler, 1997.	Indicates the attitude of decision makers toward risk associated with the adoption of an	Research results indicate that adopters tend to be more venturesome than non-

		innovation.	adopters.
CEO characteristics	Thong, 1999; Li et al., 2006; Yu, 2006; Teo and Ranganathan, 2004.	This may indicate the innovativeness and IT knowledge of the CEO which are thought to influence innovation adoption. CEO characteristics are thought to be particularly relevant in small companies where they are more influential since the CEO is the main decision maker in such companies.	Research results show a significant positive relationship between CEO characteristics and innovation adoption indicating that the CEO can act as a catalyst for such adoption.

These studies provided valuable insights into the importance of studying individual characteristics when the adopter unit is an organization. This is because the adoption decision is made by individuals within organizations whose characteristics do affect the adoption decision. This is particularly relevant when dealing with SMEs where the owner or manager is usually the decision maker. Thus these researches shed light and empirically tested the significance of different individual characteristics on the organizational adoption decision. However, individual factors studied have been chosen randomly and not in any systematic way or based on a well developed framework and thus it is not clear which individual factors are particularly relevant to organizational based studies. Additionally, similar to the previous sets of factors, these studies studied adoption as a dichotomous variable and not as a process of different levels. Therefore, we do not have evidence related to which individual factors affect which level of adoption.

The last category of factors deals with the environment in which the business operates. This environment can either have a positive or negative effect on the organization's decisions to adopt innovations. Two external factors that have been frequently researched in this area are competitive pressure and government support. Table 3.6 provides an explanation of these factors.

**Table 3.6: External factors**

Factor	Author	Explanation	Comment
Competition	Moriones and Lera-Lopez, 2007; Chong and Pervan, 2007; To and Ngai, 2006; Yang and Liu, 2006; Doherty et al.,2003; Premkumar &Roberts,1999; Thong,1999; Daniel &Grimshaw ,2002; Scupola ,2003; Frambach et al., 1998; Gatignon & Robertson, 1989; Kimberly & Evanisko ,1981.	Competitive pressure may occur as a result of other companies' adoption of the innovation or of customers' demand for the innovation. Competition results in environmental uncertainty and thus increases the organization's need for and the rate of innovation adoption (Ettlie & Bridges, 1989).	Several studies found that competition can act as a catalyst for innovation adoption, thus has a positive relationship with adoption (Premkumar &Roberts, 1999; Scupola, 2003; Gatignon & Robertson, 1989). However, other studies (Moriones and Lera-Lopez, 2007; Thong, 1999; Frambach et al., 1998) did not find a significant relationship between innovation adoption and competition. Authors in these studies explained that this might be related to the unique nature of the innovation they studied.
Government support	Corbitt, 2000; Scupola, 2003; Howcroft and Mitev, 2000.	Refers to the government initiatives taken to encourage the adoption of the innovation	Only a few studies in literature considered the influence of the government on innovation adoption. Howcroft & Mitev, 2000 indicated that this factor is complex and affected by demand side factors.

These studies provided valuable insights into the importance of studying external factors such as the competitive pressure that firms face within the industry and the government support provided to adopt an innovation. Competitive pressure has been found to have a positive influence on the decision to adopt among small firms (Chong and Pervan, 2007). As more competitors adopt the Internet, small firms are more inclined to follow the same trend in order to maintain their competitive positions. However, these studies have only studied adoption as a dichotomous variable and thus have not studied the effect of external factors on different levels of adoption. Also, only few studies considered the role of the government in encouraging or hindering the adoption of the Internet. Moreover, the small sample size and the particular context of study of some of these researches may affect the generalizability of the results.

Having provided an explanation of the different factors affecting innovation adoption, the following table (3.7) provides a review of empirical research results on the factors influencing technological innovation adoption, including the web, by organizations.

**Table (3.7): Empirical studies on the factors affecting innovation adoption**

***1-Innovation characteristics***

<b>Authors</b>	<b>Sample</b>	<b>Innovation considered</b>	<b>Finding</b>
<b>A- Relative Advantage</b>			
Chong and Pervan (2007)	115 small businesses in Australia	e-commerce	+
To and Ngai (2006)	140 companies in different sectors	Online retailing	+
Al-Qirim (2007)	129 SMEs in New Zealand	e-commerce	+
Lockett and Littler(1997)	593 UK bank customers	direct banking	+
Premkumar & Roberts(1999)	78 US small rural companies	Internet	+
Thong(1999)	166 small businesses in Singapore	IT	+
Frambach et al. (1998)	247 organizations in Netherlands	Electronic banking	+
Sultan and Chan (2000)	231 individuals in 11 US software companies	IT	N.S.
Black et el. (2001)	Six focus groups comprising 3 segments of internet users in the UK	Financial services	+

Houghton and Winklhofer (2002)	In-depth interviews with 23 UK exporting SMEs	Internet	+
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### **B- Compatibility**

Grandon and Pearson (2004)	100 SMEs	e-commerce	+
Teo and Pian (2003)	159 firms in Singapore	Internet	N.S.
Beatty et al. (2001)	286 firms	Web	+
Lockett and Littler(1997)	593 UK bank customers	direct banking	+
Premkumar & Roberts(1999)	78 US small rural companies	Internet	N.S.
Thong(1999)	166 small businesses in Singapore	IT	+
Sultan and Chan (2000)	231 individuals in 11 US software companies	IT	N.S.
Black et el. (2001)	Six focus groups comprising 3 segments of internet users in the UK	Financial services	+

### **C- Complexity**

Lockett and Littler(1997)	593 UK bank customers	direct banking	-
Premkumar & Roberts(1999)	78 US small rural companies	Internet	N.S.
Thong(1999)	166 small businesses in Singapore	IT	-
Frambach et al. (1998)	247 organizations in Netherlands	Electronic banking	-
Sultan and Chan (2000)	231 individuals in 11 US software companies	IT	N.S.
Black et el. (2001)	Six focus groups comprising 3 segments of internet users in the UK	Financial services	-
Houghton and Winklhofer (2002)	In-depth interviews with 23 UK exporting SMEs	Internet	-

### **D- Trialability**

Chong and Pervan (2007)	115 small businesses in Australia	e-commerce	-
Lockett and Littler(1997)	593 UK bank customers	direct banking	-
Black et el. (2001)	Six focus groups comprising 3 segments of internet users in the UK	Financial services	+

### **E- Observability**

Chong and Pervan (2007)	115 small businesses in Australia	e-commerce	+
Black et el. (2001)	Six focus groups comprising 3 segments of internet users in the UK	Financial services	N.S.

### **F- Cost**

Doherty et al. (2003)	20 UK retailers	Internet	-
Lockett and Littler(1997)	593 UK bank customers	direct banking	-

Premkumar & Roberts(1999)	78 US small rural companies	Internet	-
Scupola (2003)	7 SMEs in Southern Italy	internet	N.S.
Cragg and King (1993)	6 US small manufacturing firms	IT	-
Poon and Swatson (1999)	23 small businesses around Australia	Internet	N.S.
Auger and Gallagher (1997)	141 SMEs in different sectors	Internet	-

### **G- Perceived risk**

Doherty et al. (2003)	20 UK retailers	Internet	-
Lockett and Littler(1997)	593 UK bank customers	direct banking	-
Frambach et al. (1998)	247 organizations in Netherlands	Electronic banking	N.S.
Black et el. (2001)	Six focus groups comprising 3 segments of internet users in the UK	Financial services	-
Sathye (1999)	589 personal and business bank clients	Internet	-

## *2-Organizational Characteristics*

<b>Authors</b>	<b>Sample</b>	<b>Innovation considered</b>	<b>Finding</b>
<b>A- Size</b>			
Malhotra and Singh (2007)	88 banks in India	Internet	+
Bayo-Moriones and Lera-Lopez (2007)	337 Spanish firms	ICT	+
Harrison and Waite (2005)	217 companies	Internet	+
Fabiani et al. (2005)	1500 manufacturing firms	ICT	+
Bruque and Moyano (2007)	Qualitative survey on 15 SMEs in Spain	IT	+
Bengtsson et al (2007)	378 Swedish manufacturing firms	Internet	+
Salavou et al. (2004)	150 manufacturing firms in Greece	Product innovation adoptions	-
Premkumar & Roberts(1999)	78 US small rural companies	Internet	N.S.
Thong(1999)	166 small businesses in Singapore	IT	+
Drury and Farhoomand (1999)	313 firms in different sectors	EDI	+
Yao et. al (2002-2003)	199 universities in USA	ATM	+
Scupola (2003)	7 SMEs in Southern Italy	internet	N.S.
Frambach et al. (1998)	247 organizations in Netherlands	Electronic banking	N.S.
Goode and Stevens (2000)	121 Australian businesses adopters and 88 non-adopters	Internet	N.S.

Kimberly and Evanisko (1981)	Hospitals in USA	IT	+
Boeker and Huo (1998)	longitudinal study from 1972-1986 on personal computer companies	IT	N.S.
Damanpour (1987)	75 public libraries in USA	IT	+

### B- Company age

Malhotra and Singh (2007)	88 banks in India	Internet	-
Salavou et al. (2004)	150 manufacturing firms in Greece	Product innovation adoptions	-
Palvia et al. (1994)	131 US very small businesses	IT	N.S.
Goode and Stevens (2000)	121 Australian businesses adopters and 88 non-adopters	Internet	-
Kimberly and Evanisko (1981)	Hospitals in USA	IT	+
DeTienne and Koberg (2002)	192 executives in three industries	Discontinuous innovations	N.S.

### C- Organization type/industry

Bayo-Moriones and Lera-Lopez (2007)	337 Spanish firms	ICT	+
Goode and Stevens (2000)	121 Australian businesses adopters and 88 non-adopters	Internet	+
Drury and Farhoomand (1999)	313 firms in different sectors	EDI	+

### D- IT knowledge (manager/ employees)

Lertwongsatien and Wongpinunwatan (2003)	175 SMEs in Thailand	e-commerce	+
Premkumar & Roberts(1999)	78 US small rural companies	Internet	N.S.
Thong(1999)	166 small businesses in Singapore	IT	+
Scupola (2003)	7 SMEs in Southern Italy	internet	+
Goode and Stevens (2000)	121 Australian businesses adopters and 88 non-adopters	Internet	+
Houghton and Winklhofer (2002)	In-depth interviews with 23 UK exporting SMEs	Internet	+

### E-Market Orientation

Leskovar-Spacapan and Bastic (2007)	156 companies	Innovation capability	+
Salavou et al. (2004)	150 manufacturing firms in Greece	Product innovation adoptions	+
Verhees and Meulenber (2004)	152 SMEs	Innovation capacity	+/- depending on innovativeness of the

			company
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### F- Organizational learning

Akgun et al. (2007)	106 firms	product innovativeness	+
Lin (2008)	163 IS managers	e-business	+
Calantone et al. (2002)	187 technology companies	Firm innovativeness	+
Salavou et al. (2004)	150 manufacturing firms in Greece	Product innovation adoptions	+
Real et al. (2006)	140 industrial companies	Technological innovation	+
Hurley and Hult (1998)	9658 employees in 56 large organizations in the US	Innovation capacity	+

### G- Marketing capabilities

Poon and McPherson (2005)	151 technological based Asian firms	Product innovations	+
Weerawardena and O'Cass (2004)	326 manufacturing firms in Australia	Product innovations	N.S.
Weerawardena (2003)	324 manufacturing firms	Organizational innovation	+

### H- Staff workload

Corbitt (2000)	ethnographic study of one Australian financial company	Ecommerce	-
Cragg and King (1993)	6 US small manufacturing firms	IT	-

### I- Centralization

Sultan and Chan (2000)	231 individuals in 11 US software companies	IT	-
Bajawa et al. (2005)	344 organizations	IT	-
Wan et al. (2005)	71 companies in Singapore	IT	-
Kimberly and Evanisko (1981)	Hospitals in USA	IT	-
Gatignon and Robertson(1989)	25 senior sales officers from a range of industries	IT	N.S.

### J- Organizational slack

Damanpour (1987)	75 public libraries in USA	IT	+
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## 3-Individual characteristics

Authors	Sample	Innovation considered	Finding
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### A- Top management support

Bengtsson et al (2007)	378 Swedish manufacturing firms	Internet	+
Bruque and Moyano (2007)	Qualitative survey on 15 SMEs in Spain	IT	+

Bharati and Chaudhury (2006)	135 manufacturing companies	Technology adoption	+
Teo and Pian (2003)	159 firms in Singapore	Internet	N.S.
Doherty et al. (2003)	20 UK retailers	Internet	+
Premkumar & Roberts(1999)	78 US small rural companies	Internet	+
Corbitt (2000)	ethnographic study of one Australian financial company	Internet	+
Sultan and Chan (2000)	231 individuals in 11 US software companies	IT	+
Cragg and King (1993)	6 US small manufacturing firms	IT	+
Schillewaert et al.(2005)	229 sales reps from different sales organizations	IT	+

#### **B- Educational level of decision maker**

Bayo-Moriones and Lera-Lopez (2007)	337 Spanish firms	ICT	+
Li et al. (2006)	89 CIOs	IT	+
Lockett and Littler(1997)	593 UK bank customers	direct banking	N.S.
Kimberly and Evanisko (1981)	Hospitals in USA	IT	+
Brancheau and Wetherbe (1990)	18 large manufacturing and services co. in USA	IT	+

#### **C- Work experience**

Sultan and Chan (2000)	231 individuals in 11 US software companies	IT	N.S.
Kimberly and Evanisko (1981)	Hospitals in USA	IT	+
DeTienne and Koberg (2002)	192 executives in three industries	Discontinuous innovations	N.S.

#### **D- Attitude and personality of decision maker**

Tan et al. (2007)	134 Chinese SMEs	e-commerce	+
Lockett and Littler(1997)	593 UK bank customers	direct banking	+
Thong (1999)	166 small businesses in Singapore	IT	+
Corbitt (2000)	ethnographic study of one Australian financial company	Ecommerce	+
Schillewaert et al.(2005)	229 sales reps from different sales organizations	IT	+

#### **E- Decision maker's response to risk**

Wan et al.(2005)	71 companies in Singapore	IT	+
Lockett and Littler(1997)	593 UK bank customers	direct banking	N.S.
Tabak and Barr (1996)	1096 hospitals in USA	IT	+
Sultan and Chan (2000)	231 individuals in 11 US software companies	IT	+

#### **F- Opinion leadership**

Lockett and Littler(1997)	593 UK bank customers	direct banking	+
Sultan and Chan (2000)	231 individuals in 11 US software companies	IT	+
Brancheau and Wetherbe (1990)	18 large manufacturing and services co. in USA	IT	+

#### **G- CEO characteristics**

Li et al. (2006)	89 CIOs	IT	+
Teo and Ranganathan (2004)	108 firms	B2B e-commerce	+
Yu (2006)	115 Taiwanese SMEs	Internet	+
Thong (1999)	166 small businesses in Singapore	IT	+
Scupola (2003)	7 SMEs in Southern Italy	internet	+

### ***4-External factors***

<b>Authors</b>	<b>Sample</b>	<b>Innovation considered</b>	<b>Finding</b>
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#### **A- Competition**

Bayo-Moriones and Lera-lopez (2007)	337 Spanish firms	ICT	N.S.
Chong and Pervan (2007)	115 small businesses in Australia	Ecommerce	+
To and Ngai (2006)	140 companies in different sectors	Online retailing	+
Premkumar & Roberts(1999)	78 US small rural companies	Internet	+
Thong (1999)	166 small businesses in Singapore	IT	N.S.
Daniel and Grimshaw (2002)	1291 UK small and large firms	Internet	+
Scupola (2003)	7 SMEs in Southern Italy	internet	+
Frambach et al. (1998)	247 organizations in Netherlands	Electronic banking	N.S.
Kimberly and Evanisko (1981)	Hospitals in USA	IT	+
Houghton and Winklhofer (2002)	In-depth interviews with 23 UK exporting SMEs	Internet	+

#### **B- Government support**

Corbitt (2000)	ethnographic study of one Australian financial company	Ecommerce	-
Scupola (2003)	7 SMEs in Southern Italy	Internet	+
Howcroft and Mitev (2000)	37 UK general practitioners (GP).	IT	mixed

An examination of the literature reveals that a large number of variables are thought to be relevant to technological innovation adoption. Additionally, for some of these factors mixed results exist indicating a lack of consistency in research results. The following paragraphs discuss some of these results.

Regarding innovation characteristics, relative advantage generally showed a positive relationship with innovation adoption with only few studies (Sultan and Chan, 2000) finding a non significant relationship. Compatibility and observability showed mixed results, sometimes having a positive relationship and at other times having non significant relationship with innovation adoption. Complexity and perceived risk were sometimes found to be negatively related to innovation adoption and at other times no relationship was found. As for trialability, opposite results exist sometimes indicating a positive relationship and other times a negative relationship. Some researches studied cost as a separate factor under innovation characteristics. Results for this factor are variable also showing a negative or non significant relationship with innovation adoption.

Under organizational characteristics, a large number of factors has been studied as shown in the above table indicating that there is no consensus as to which are the relevant and important firm characteristics that affect innovation adoption perhaps because the theoretical framework has not been well developed, highlighting the importance of further research. One of the factors that has been extensively studied under organizational characteristics is size which has showed varied results in terms of its effect on innovation adoption. Some studies found a positive relationship, others negative or a non significant relationship (Malhotra and Singh, 2007; Salavou et al., 2004; Premkumar and Roberts, 1999). Organizational age has also been studied to find whether older or younger companies are more likely to adopt technological innovations. Mixed results exist for this factor showing a positive relation at times, and a negative or non significant relation at others (Kimberly and Evanisko; 1981; Malhotra and Singh, 2007). Organizational type or the industry in which the organization operates has also been studied and was found to have a positive relationship with innovation adoption (Bayo-Moriones and Lera-Lopez, 2007). IT knowledge, whether relevant to managers or employees, has also been found to

have a positive relationship with innovation adoption (Lertwongsatien and Wongpinunwatan, 2003). Three other organizational factors namely, market orientation, organizational learning and marketing capabilities have been found to have a positive relationship with innovation adoption (Leskovar-Spacapan and Bastic, 2007; Akgun, 2007; Poon and McPherson, 2005). It is worth noting, however, that besides these studies, only few have empirically tested the effect of these factors on innovation adoption. Under organizational characteristics a variety of other factors have been studied including centralization, staff workload, organizational slack and others.

Under individual characteristics top management support is a factor that has been extensively researched and has generally showed a positive relationship with innovation adoption. Besides top management support, CEO characteristics is a factor that has been consistently found to have a positive relationship with innovation adoption. Decision maker's attitude toward change and response to risk are two factors that generally consistently showed a positive relationship with innovation adoption. These results indicate that the characteristics of decision makers in organizations as well as the support they give to the adoption of innovations are important and influential factors on the adoption decision. A variety of other factors were studied under individual characteristics including the educational level of the decision maker, the work experience, opinion leadership and others.

Under external characteristics, the effect of competition or competitive pressure has been extensively studied. Mixed results exist for competition indicating positive, negative or a non-significant relationship. Besides competition, some studied the effect of government support on the adoption of innovations and again mixed results exist for this factor.

As can be seen from the above, innovation adoption literature involves a large number of variables that are thought to be relevant to technological innovation adoption. For some of these factors mixed results exist indicating a lack of consistency in research output or indicating the significance of the context of study. It is thus important to identify the critical factors that are relevant to a certain innovation and a certain market. This is the

aim of this research which is to identify the critical factors affecting web adoption by SMEs. This takes us to the next section which deals with Internet and particularly web adoption by SMEs.

### **3.7 Internet adoption by SMEs**

The previous section focused on the adoption of innovation in general. In this section, there is a specific focus on the factors that influence adoption by SMEs. As previously noted, innovation adoption research has focused more on the individual consumer as the adopter of innovations. As a rough indication, a simple search of the main journal databases found that around 530 consumer innovation adoption articles were published from 1998 through 2008 whereas around 320 firms' innovation adoption articles were published during the same period. Additionally, firms' Internet adoption research has focused to a large extent on large organizations. Internet adoption in many SMEs is manifested in websites which are viewed to provide the most value within an inherently marketing driven context (Marcolin et al., 2005; Martin and Matlay, 2003; Jones et al., 2003). While there is plenty of research that studied IT including the web and SMEs, there is limited research on adopting the web for marketing purposes. A few number of studies focused on the adoption of the web for marketing purposes in a small business context and these have been in developed countries (Houghton and Winklhofer, 2002; Maguire et al., 2007). While acknowledging the importance of studying the technology which has been the focus of previous studies, it is also important to focus on the use of this technology, i.e. the marketing utilisation of the web. It is important to study how small firms are using the web to interact with their customers.

SMEs have always been recognized as an important segment of the economy and will remain the backbone of economic development in many countries throughout the world (Chong and Lin, 2008). Buhalis and Peters (2004) indicate that small businesses dominate the tourism industry worldwide and are of critical importance for the competitiveness of tourism destinations. Creative use of the Internet may allow SMEs to capitalize on market opportunities (Maguire et al., 2007). Smaller firms have been much

slower than larger ones in adopting the Internet and e-commerce and also relevant research has been slower in developing (Fillis and Wagner, 2007). Most of these studies focused on the barriers that small companies can face in their adoption of the internet as well as the benefits they can realize. Others emphasized the importance of the internet especially for small businesses. Key themes include barriers to adoption (Kartiwi and MacGregor, 2007; Walczuch et al., 2000), benchmarking internet use (Webb and Sayer, 1998), the micro-enterprise and Internet use (Dandridge, 2000) and entrepreneurship and the Internet (Colombo, 2001). ICT including the web is believed to be the most cost efficient tool that can aid companies to gain bigger markets and be able to compete with their larger counterparts in attracting customers to their products and services (Tan et al., 2009). Only a limited number of studies have attempted to analyze the factors that lead small companies to either adopt or not adopt the web for marketing purposes and the level of web adoption by these companies.

Based on an empirical study, Hausman (2005) argues that small firms have different characteristic features than larger ones and thus it is important to study their innovative behaviour separately. Among these characteristics are less bureaucracy, more flexible structure, closeness to customers and therefore better identification of their unmet needs, more limited resources and larger influence of the owner or manager whose own innovativeness maybe the main determinant of the firm's innovativeness (Zhang and Morrison, 2007; Olson et al., 1995; Sivades and Dwyer, 2000; Thong, 2001; Verhees and Meulenber, 2004). Additionally, SMEs have centralized decision making, limited long-term planning, and there is more dependence on external expertise and services for information systems (Premkumar, 2003). Buhalis and Peters (2004) indicate that small businesses are not miniature versions of larger ones, but they have different structures, priorities and strategic objectives. The following discussion provides an illustration of some of the research that focused on studying the Internet including the web in small businesses.

Many authors have been looking at the use of ICTs in SMEs (Tan et al., 2008; Buhalis and Murphy, 2008; Hamill and Gregory, 1997). A vast majority on literature on Internet

and in particular web adoption in SMEs focused on the benefits realised as well as the barriers of adoption. Among these studies common themes exist.

Based on an empirical study of 406 SMEs in Malaysia, Tan et al. (2008) investigated the innovative characteristics, benefits and barriers of ICT adoption among SMEs. They found that ICT adoption provides low cost and effective communication with customers. However, security concerns represented a main barrier. In a conceptual study, Poon and Jevons (1997) were amongst the first researchers to realize the potential benefits that the internet could offer SMEs, suggesting that it creates an unprecedented opportunity for small businesses to engage in national and international marketing campaigns that previously would have not been affordable. Hamill and Gregory (1997) also realized the significant role that the internet could play in the internationalization of SMEs by offering a means for global sales and/or for disseminating company information as well as an effective promotional tool. They stressed that lack of adoption would result in a decrease in their competitive position. Based on an empirical study, Lefebvre et al. (2005) added that the increased visibility offered by web presence is one of the important motivations behind SMEs e-commerce initiatives. Although these studies provided valuable insights into the benefits and barriers of web adoption by SMEs, however, they did not attempt to find the reasons behind SMEs adoption of the web and the different levels of adoption that may exist. If reasons behind web adoption and levels of adoption are studied, more advanced adoptions could be encouraged.

Sillince et al. (1998) explored the role of the Internet in improving communication in their study of email adoption in SMEs. They found that e-mail allowed faster and more effective means of communication among adopters. They also found that email use resulted in efficiency gains and the ability to perform new tasks, such as sharing documents electronically as well as working at a distance. These findings are consistent with the exploratory study of e-commerce in SMEs undertaken by Poon and Swatman (1999) who also found that the most useful function of the Internet is as a medium for business communication through the use of electronic mail. Similarly, Poon (2000)

explains that among the main internet commerce benefits that can be realized by small companies as a result of their adoption of the Internet are competitive advantage over non-online competitors as well as quality information.

Dutta and Evrard (1999) found that SMEs were using the internet for a number of different activities including improved communication, access to information, marketing and transactions with customers and suppliers. Their findings have been reinforced by other empirical studies of SME adoption of the Internet, such as those by Daniel et al. (2002). Auger and Gallauger (1997) found that one of the main factors that led small companies in the US to adopt the internet is the desire to expand geographical coverage and hence add more customers and increase sales. This result was enforced later by Walczuch et al. (2000) who also found that the most important benefit of e-commerce adoption among SMEs in Netherlands can be described as “border-crossing” as the internet allows advertising all around the world and disappearance of distance. Thus it is obvious that small companies in different parts of the world agree that the internet provides them with an opportunity for international presence. The main barriers were concerns about whether the internet would lead to more efficiency or lower costs. According to Berranger et al. (2001), the major inhibitor of internet adoption among SMEs is that many SMEs do not possess the adequate physical and intellectual resources necessary to implement information and communication technologies.

Regional studies (Webb and Sayer, 1998; Geiger and Martin, 1999) have emphasized the importance of geographical context in considering Internet adoption in SMEs. Scupola (2003) based on in-depth interviews with 7 SMEs in South Italy, found that the most significant short-term direct benefits of ecommerce adoption were around the clock communication, administrative cost saving and time saving. As for the indirect long term benefits the most significant were the contribution to internationalization and increased market potential. Although this study results are restricted to a certain geographical area, it provides new insights by covering a less developed part of the world. Similarly focusing on a particular geographical area, Mavromatis and Buhalis (2003), based on a

empirical study on 76 tourism companies in Egypt found that among the main benefits for Internet use by tourism companies were the global reach 24/7 a day offered by the Internet, the increase in direct sales as well as the improvement in efficiency and effectiveness. Among the important barriers were privacy of information and security issues related to online payment. Although their research provides valuable contribution in terms of discovering the benefits/barriers as well as the incentives to use the Internet by travel companies in Egypt, it did not address the particular innovation (Internet) characteristics and whether these have had an effect on its adoption/non-adoption by travel companies. Moreover, the study did not attempt to discover whether travel companies merely adopt versus non-adopt the Internet or whether there are levels of adoption, i.e. information search, online sales and so on. If different levels are depicted it would be worthwhile to discover which factors affect which level. Finally, focusing specifically on travel agents who have been the earliest companies in comparison with other travel companies in Egypt on the Internet and increasing the sample size might provide more comprehensive insights into the factors that affect Internet adoption and can be more generalized. It is obvious from these authors' findings that the Internet has a long way to develop in Egypt and a lot of effort is needed to turn its use from merely information provision to more interactive levels and even complete transactions.

To sum up, the main benefits of web adoption as cited by these studies include low cost, effective communication, internationalization, increased visibility and increased market potential. Among the commonly cited barriers to web adoption are management's lack of awareness of the technology, security concerns, cultural barriers, problems in solving compatibility issues with existing IT system, lack of online payment process, difficulty of finding and training qualified personnel, lack of human interaction and lack of resources (Mavromatis and Buhalis, 2003; Poon and Swatman, 1997; Khan, 2004; Dedrick and Kraemer, 2001; Kaynak et al., 2005; Bolongkikit et al., 2006, Taylor and Murphy, 2004). This body of research has provided valuable insights into the benefits and barriers of web adoption; however, it is not without limitations. The majority of this research has been conducted in a developed country context. Benefits and barriers to web adoption may differ in different locations, thus firms in developed countries may place importance on

benefits/barriers which may not be the same as those in developing countries. Additionally, some of these studies employed small samples and were limited to only few industries or types of products (eg. Email adoption only) which places some constraints on the generalizability of the results. Moreover, some studies only focused on the companies that were already online and did not study the benefits and barriers perceived by those that made the decision to not go online

Besides studying the benefits and barriers of web adoption, other studies focused on the reasons behind web adoption. Houghton and Winklhofer (2002) believe that there are several reasons behind understanding the process of internet adoption in SMEs more clearly. First, initial internet adoption by SMEs does not necessarily imply continued and increasingly sophisticated use of the medium. The determinants that stimulate or hinder the level of adoption are not clearly understood. Second, knowledge of determinants encouraging internet adoption will assist in more focused efforts to stimulate adoption among SMEs. Among the researchers that focused on studying the factors that lead small companies to adopt or not adopt the Internet common themes exist.

The literature on SMEs adoption on the web emphasized the inherent characteristics and abilities of the owner/ manager as being key determinants of web adoption (Simmons et al., 2008; Bengtsson et al., 2007; Bharati and Chaudhury, 2006; Martin and Matlay, 2003; Barba-Sanchez et al., 2007). Based on an empirical study, Bharati and Chaudhury (2006) found that top management and customers were the main determinants for technology adoption by high-tech U.S. manufacturing firms. Similarly, in their empirical study on the adoption of advanced internet marketing operations by Swedish small, medium and large firms, Bengtsson et al. (2007) found that the presence of Internet champions, top management support and entrepreneurial support were the top three attributes that differentiated between firm adopters and non-adopters of advanced Internet-based marketing operations. Moreover, the entrepreneurial orientation of SMEs owners/ managers was found to have a strong effect on their adoption of the web (Fillis and Wagner, 2005; Elliott and Boshoff, 2007). Similarly, Martin and Matlay (2003) found that website adoption stemmed from the SMEs owners/managers who recognized

the importance and usefulness of websites in marketing. Bruque and Mayano (2007) based on their study on the determinants of information technology adoption and implementation in SMEs, found that top management support, growth experienced by the firm, attitude toward change and imitation of other firms were the main determinants. Their study however, was qualitative in nature and their model has been deduced in a particular geographical context thus limiting the generalization of their results. Similarly, Wilson et al. (2008), based on an empirical study on 678 SMEs in the UK found that top management support, management's understanding of business benefits of the internet and presence of IT skills were among the main reasons behind adoption of ecommerce and the internet by SMEs. Additionally, Yu (2006) in his empirical study on Taiwanese SMEs Internet adoption decisions found that CEO characteristics had an important influence. These results further emphasize the importance of individual managerial characteristics in the adoption decision made by small firms. All of these studies lead to one conclusion which is the owner or manager in an SME has an important influence on the web adoption decision. This might indicate that when studying web adoption, it is important to study the characteristics and willingness of SMEs owners/managers to adopt the web.

Besides studying the owner/manager, other studies on SMEs adoption of the web considered the perceived innovation attributes as well as organizational factors and their effect on the adoption decision.

Tan et al. (2008), based on an empirical study on SMEs in Malaysia, found that perceived innovation attributes namely; relative advantage, compatibility, complexity, observability and in addition security factors influenced internet adoption by SMEs. Similarly, Chong and Pervan (2007), based on an empirical study on 115 small firms in Australia, found that perceived innovation attributes and in particular; relative advantage, trialability and observability had a significant effect on e-commerce adoption by small firms. Additionally, A-Qirim (2007) based on an empirical study on 129 SMEs in New Zealand found that perceived innovation attributes particularly relative advantage had a positive effect on Internet adoption. Similarly, Kaynak et al. (2005), based on an empirical study on 237 manufacturing SMEs in Turkey found that perceived benefits including market

development, accessibility to international markets and efficiency of sales and promotion were among the main reasons behind SMEs adoption of the Internet.

Moving to organizational factors several studies attempted to outline the effect of organizational factors on SMEs adoption of the Internet and the web. Premkumar and Roberts (1999) studied the factors that affect the adoption of four types of communication technologies being e-mail, online data access, internet access and EDI among small rural companies in USA. They identified three groups of factors namely, innovation attributes, organizational characteristics and environmental characteristics that they thought are relevant to studying the adoption of these technologies among small companies. Under organizational factors they studied the effect of size and IT knowledge of employees where they found that they had a positive effect on adoption. Similarly, Bruque and Moyano (2007) found that size has a positive effect on IT adoption by SMEs. Similarly, and emphasizing the importance of organizational factors when studying firm's adoption of the Internet, Simmons et al. (2007) found that the lack of marketing capability had a strong influence on internet adoption by agri-food SMEs in the UK..

Fewer studies recognized the importance of considering the level of adoption when studying a complex innovation like the Internet. The following is a discussion of some studies on the level of adoption by SMEs.

Daniel and Grimshaw (2002) studied the adoption of E-commerce by UK SMEs from a stage perspective. They found that there are four stages or steps through which firms passed during the adoption of e-commerce namely; developers, communicators, web presence and translators. The first cluster of firms was developing their first e-commerce services, the second stage were using e-mail to communicate with customers and suppliers. Those at the third level of adoption had information-based websites and those at the most advanced stage has online ordering in operation and were developing online payment facilities. This study is very useful in terms of actually identifying different stages of adoption and determining the differences between them. However, the factors affecting the adoption of these different levels were not identified. Additionally, based on an empirical study, Premkumar and Roberts (1999) studied the factors that affect the

adoption of four types of communication technologies being e-mail, online data access, internet access and EDI among small rural companies in USA. They however dealt with Internet adoption as a dichotomous variable of mere adoption versus non-adoption and did not attempt to study the factors that affect the different stages of adoption. Contrary to the view that adoption of the Internet exists as a dichotomous variable, Houghton and Winklhofer (2002) studied the factors that affect the extent of Internet adoption by exporting SMEs. They developed a six stage model and studied the factors that affect the adoption of the first three ones. Based on in-depth interviews with 23 exporting SMEs in the UK, they found that the factors that affect each level vary thus enforcing the view that internet adoption should be studied in stages rather than a dichotomy. Their study however was based on qualitative work on a small number of firms. Thus, quantitative research needs to be conducted in order to evaluate the relevance of the factors that this research has identified. Also, in an attempt to study levels of web adoption, Bengtsson et al. (2007) acknowledged the existence of different levels of web adoption namely basic and the advanced levels. They argued that when compared to basic use, the advanced use of the web assumes more sophisticated two-way interaction and data processing, and includes online ordering and payment. They however focused only on discovering the factors that affect the adoption of advanced levels of the web according to the different sizes of the firm (small, medium and large) without studying the different factors that might affect basic versus advanced use of the web. Based on an empirical study on 127 Dutch SMEs, Huizingh and Brand (2009) found that e-commerce adoption occurs in stepwise (multiple levels) and not in a binary fashion. Using variables from Roger's innovation adoption model, and investigating the difference between companies at basic and advanced levels of e-commerce, they found significant differences between basic and advanced adopters with respect to their knowledge, potential value, implementation and satisfaction with e-commerce. All of these studies emphasize the importance of studying the level of adoption when considering a complex innovation like the web.

Although there were some attempts to study the factors that affect web adoption for marketing purposes in small businesses, these were few ones that were mostly focused in developed countries (Houghton and Winklhofer, 2002). Businesses in developing

countries face different challenges from those in developed countries (Molla and Licker, 2005). It is important to extend these studies to less developed countries, particularly when studying a global industry such as the tourism industry. Tourism is an industry with a high growth potential not only in developed but also in developing countries. Egypt, for example, is ranked among the top five countries worldwide in terms of tourism growth potential. Adding to this, tourism is a large contributor to economic development and foreign currency earnings in most countries. Given this importance of the tourism industry and the significance of the developing countries in terms of tourism growth potential, extending web adoption research to cover these countries will be a valuable contribution because it will provide knowledge as to how to increase the competitiveness of such an industry on a world wide scale through better management of web adoption factors.

### **3.8 Gaps in Literature**

After a thorough review of the innovation adoption literature and with a particular focus on the web, the following gaps have been identified and these will be addressed by this research:

- ❖ Research on innovation adoption has primarily focused on the individual consumer as the adopter of the innovation. Fewer studies focused on the business to business adoption of innovations. Businesses have different decision making processes from consumers and thus their adoption decisions may be influenced by different factors and is worth studying. Additionally, only few researches studied Internet adoption in small and medium sized enterprises.
- ❖ Internet adoption has been primarily studied as a dichotomy with only few studies taking the level of adoption into consideration. Internet adoption is more of a continuous process that consists of several stages rather than simply an adoption versus non-adoption decision. It is thus necessary to determine the factors that affect the different stages of internet adoption by firms.

- ❖ The technological innovation literature has identified many variables that are possible determinants of organizational adoption of an innovation. This large number of variables suggests that more research is needed to identify the important ones. Additionally, it is important to determine the significant factors affecting the different stages of adoption.
  
- ❖ Most of the innovation adoption literature has been implemented in more developed countries. It is important to extend this research to developing countries in order to see whether the same factors hold true there. Developing countries represent a significant part of the world. Understanding the challenges and drivers to internet adoption in these countries, particularly for a global industry such as tourism would help provide a more comprehensive view of how to manage these different factors with the ultimate aim to raise the competitiveness of such an industry worldwide.
  
- ❖ Innovation adoption literature has focused on product innovations with few researches focusing on adoption in a service context. Being a large contributor to gross domestic product and employment in most developed countries and also in many developing countries, the economic importance of the service sector can not be underestimated. Studying the tourism industry is particularly important as the tourism industry is an industry with a high growth potential in most countries and is a major currency earner. Increasing interest is being shown by many countries in the potential of global travel and tourism as an important contributor to economic development, measured in terms of investment, employment and balance of payments (Middleton and Clarke, 2001).

### **3.9 Conclusion**

This chapter has contributed to the second research objective by identifying and outlining in details the different factors that have been cited in literature and that had an effect on technological innovation adoption including the web by organizations. The chapter started by defining an innovation and then discussed organizational adoption of

innovations. The web as an innovation was then explained suggesting that it should be viewed as a cluster of innovations rather than a simple innovation. A literature review on innovation adoption including the key themes was then introduced. This involved discussing studies that have considered technological innovation adoption as a dichotomous variable versus those that have studied the level of adoption. Following that a classification of the factors that affect technological innovation adoption, as cited in literature was presented and discussed. These factors have been classified under innovation attributes, organizational factors, individual factors and external factors based previous studies as explained in the chapter. Finally, the chapter discussed the studies that have focused on Internet, and particularly web adoption by SMEs. Gaps in literature were highlighted and discussed.

# **Chapter Four**

## **Conceptualizing Internet Adoption by Travel and Tourism Companies**

### **4.1 Introduction**

The aim of this chapter is to contribute to the second research objective that deals with developing the conceptual framework of this research. This chapter develops a conceptual model of web adoption which can be applied to Egyptian travel and tourism companies, and the resulting hypotheses that will be subject to empirical testing and analysis in the following chapters. Three major sources will be used to develop the model namely, dominant existing innovation diffusion models and in particular Roger's theory of innovation adoption, the Resource-based view of the firm (RBV) and extant innovation adoption literature. It is worth noting that different theoretical frameworks for adoption such as the Technology Acceptance Model (TAM) will be examined before focusing on Roger's framework.

Before discussing these sources, it is important first to identify the key components of the innovation adoption decision that form the base of theorizing in this research. A key point to emphasize here is that, if we think about adoption, it involves the innovation, the decision maker and the external context. Thus, in conceptual terms, the adoption of innovations can be viewed as a decision that includes these three components. As for the innovation, perceived innovation attributes determine how the innovation is perceived by potential adopters. As for the decision maker, this might be either an organization or an individual consumer but in both cases, the characteristics of the decision maker might be expected to influence the decision. In this research the decision making unit characteristics will be divided into two sets of factors namely, the organization and the individual within the organization. Finally, the external context represents the broad environment in which the decision maker exists. The external context includes the competitive pressure exerted from external parties such trading partners, suppliers or customers to adopt an innovation. Researchers have also studied a number of different factors under external environment such as government support, culture, vertical linkages

to parent company and rivalry among competing firms (Premkumar and Roberts, 1999; Chong and Pervan, 2006; To and Ngai, 2006; Gong et al, 2006).

Given the previous explanation of the components of the adoption decision, it is worth noting that both likelihood and level of adoption, which are the different dimensions of adoption, are both regarded as adoption decisions. This research will thus use a single set of hypotheses to measure both likelihood and level of adoption because the same factors are seen as relevant to both decisions but the strength of their impact may vary. The generic aspects of the external context will not be part of the hypotheses in this study because we have a single market environment here where travel companies are operating within the same competitive structure and under the same environmental factors and thus there is no heterogeneity in terms of the external factors that they are exposed to. However, one element of external environment, culture, is seen to be of particular interest to this research as adoption of innovations is particularly affected by cultural acceptance or resistance to innovation. Culture may be regarded as part of the overarching environment but for the empirical study it is a given because this research is done within a national culture. The following section will discuss the impact of culture on innovation adoption and will give insights on how far the Egyptian culture might have acted as a barrier or catalyst to web adoption. It should be noted, however, that culture will not be directly tested in this research as the study deals with one national culture.

Roger's model of innovation adoption is a dominant model in this field that offers an established framework for measuring the adoption of various innovations and has been used successfully at both the consumer and organizational level. Thus Roger's model will be used as a basis for theorizing in this research as it will provide valuable information about the perceived innovation attributes that affect innovation adoption. Besides Roger's model, the Resource-based view of the firm, a theory that deals specifically with firm resources and capabilities, will be used to provide valuable information about the firm-specific (decision maker) factors that are thought to have an influence on innovation adoption. Finally, a literature review on innovation adoption shows all the different factors that have been used by researchers to study innovation adoption as well as providing empirical evidence about which ones were found significant. It is important to

mention at this point that the model developed in this research is based purely on existing research and it integrates different theoretical perspectives. A thorough review of relevant theory in the field of innovation adoption showed that there is adequate theory in this field to develop the model and thus no exploratory work was undertaken for the purpose of theory development.

This chapter is divided as follows. Section 4.2 discusses the impact of culture on innovation adoption with a particular emphasis on Egypt which represents the context of this research. Section 4.3 discusses the dominant theories of innovation adoption that exist with a particular emphasis on Roger's model of innovation adoption. Section 4.4 will discuss the relationship between consumer and firm innovation adoption studies highlighting the fact that innovation adoption research has largely focused on the consumer. Section 4.5 will explain the resource-based view of the firm being one of the sources used for developing the conceptual model of this study. Section 4.6 will introduce the proposed conceptual model and discuss how it was developed. Section 4.7 presents the hypotheses for the research and finally, section 4.8 concludes the chapter.

## **4.2 Culture and innovation adoption**

According to Rogers (1983) the adoption rate of an innovation is influenced by the characteristics of the innovation, the communication channels used to communicate the benefits of the innovation; the time frame since the introduction of the innovation and the social system in which the innovation will diffuse. Therefore the social system in which an innovation diffuses has an effect on the adoption of the innovation. Within a particular social system factors like culture may have an effect on the adoption of an innovation. As part of the external context, culture is a factor that has been studied by various researchers to test its influence on innovation adoption (Wejnert, 2002; Yalcinkaya, 2008). Culture has been used to refer to the culture of the nation as a whole, the culture of specific groups within or across nations or the culture of organizations or even individuals. Culture has been particularly of interest in studies that focused on comparisons between different countries' adoption rates (Gong et al, 2006). Hofstede's (1980,1991) framework on differences between cultures on five dimensions namely;

power distance, uncertainty avoidance, individualism, masculinity and time orientation, has been used to distinguish national cultures in terms of their innovation adoption behaviours. For example, some researchers considered the difference between individualistic versus collectivist cultures in adoption behaviours (Agrawal and Haleem, 2002; Van et al., 2005). Differences in national culture have been found to explain some variations in the adoption of information technologies (Chau et al., 2002; Van Everdingen and Waarts, 2003). The following paragraph discusses some research findings on the effect of culture on innovation adoption.

In a cross country study on the effect of culture on adoption and acceptance of information technology, Bandyopadhyay and Fraccastoro (2007) found that the social influence based in culture provided additional explanatory power regarding consumers' intentions to use a technology. Similarly, based on a cross country analysis of ten European countries, Van Everdingen and Waart (2003) found that national culture has a significant impact on the adoption of innovations. Specifically, they found higher levels of uncertainty avoidance, masculinity and power distance are negatively related to adoption of innovation by firms, while long term orientation has a significant positive relationship. Similarly, Agrawal and Haleem (2003) found that cultural factors do play an important role in successfully implementing computer based information systems.

Egypt's culture might have an important influence on its adoption of the Web. Most notably, Egyptians usually have a cultural resistance to new ideas and do not consider new ways of doing business unless pushed to do so. Additionally, the market in Egypt generally operates in a very flexible fashion. How companies are using the web is very much based on their own attitudes and perspectives rather than based on a commonly agreed upon way of conduct. In his research, Hofstede (1980) did not specifically examine culture in Egypt; however, he did present findings related to Arab countries in general. Hofstede (1980) classified Arab speaking countries as demonstrating high power distance, moderately strong uncertainty avoidance, low individualism and moderate masculinity. This might give indication as to why Egypt is behind non Arab countries in Web adoption since these factors are negatively related to innovation adoption

(Everdingen and Waart, 2003). Uncertainty avoidance is particularly evident in Egypt whereby the majority of companies would not prefer to deal with ambiguous or uncertain situations and would like to wait and see what other companies are doing and how they have benefited from adopting an innovation. Similar to Hofstede's classification of Arab countries, Egypt demonstrates low individualism that discourages innovation since people are more likely to fit with and follow the group.

Although this is the common culture in Egypt, we can not say that there are not people who are willing to make change and try new and innovative ways to do business. They have the necessary level of awareness needed to take the risk associated with trying a new thing. However, in general, the culture in Egypt might act more as a barrier than a catalyst to the adoption of an innovation. As mentioned above, although a key element of the external environment, the direct effects of culture will not be tested in this research as the study is conducted within a single national culture. It was necessary however to highlight some of the common features of this culture as these may help to explain the overall level of web adoption in Egypt. The following section will provide a review of the theories of innovation adoption.

### **4.3 Theories of innovation adoption**

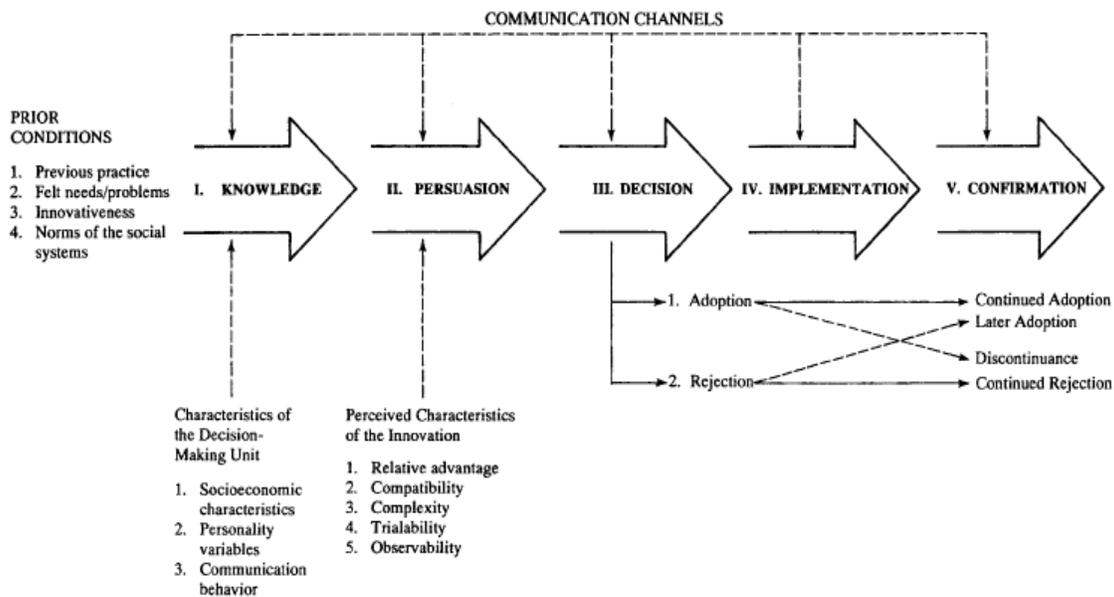
Before developing a conceptual model, there is a need to understand how the actual process of innovation adoption can be conceptualized. It is necessary to mention at this point that innovation adoption theories have been initially developed and directed toward the individual consumer and then were used for the organizational adopter. These theories have been primarily focused on final consumers but some have been used for organizations. This section will provide a review of these innovation theories and in particular Rogers's theory of innovation adoption which is a dominant model in this field. In addition, the Technology Acceptance Model (TAM), which is an attitude-behaviour theory that has been widely used in predicting individuals' acceptance of information systems, will be discussed.

### 4.3.1 Rogers's Theory of Innovation Adoption

#### 4.3.1.1 Rogers's Model of Innovation-Decision Process

As one of the dominant theories on innovation adoption, Rogers's (1962) model of innovation adoption can be applied successfully to a variety of innovations. Originally serving the social science area, and in particular rural innovation adoption, and directed toward the individual consumer, it has evolved throughout different decades to encompass technological innovations and to serve both consumer and business adoption units. The model is based on the innovation-decision process which is "the process through which an individual (or other decision-making unit) passes from first knowledge of an innovation, to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision" (Rogers, 2003 p.170). Thus implicitly this model views adoption as a staged process. Figure 4.1 illustrates the model.

**Fig 4.1: Stages in the innovation decision process by Rogers**



Source: Rogers (2003, p.170)

Each stage of the process consists of a series of different actions and decisions taken over time (Rogers, 2003). The following is a brief description of each stage.<sup>1</sup>

During the knowledge stage the decision-making unit gets exposed to the innovation's existence and starts to understand how it operates (Rogers, 2003). Factors that affect this stage include previous practice, needs and problems, innovativeness of the individual and norms of the social system. At the persuasion stage the "individual becomes more psychologically involved with the innovation" and thus starts to actively seek information about the new idea (Rogers, 2003 p.175). Perceived characteristics of the innovation: relative advantage, compatibility, complexity, trialability and observability are important in helping the individual form a favourable or unfavourable attitude toward the innovation. All but complexity are positively related to the adoption of an innovation by an individual. The perceived attributes of an innovation provide an important explanation of the rate of adoption of the innovation (Rogers, 2003 p.221). In addition to these five perceived attributes, other factors such as: the type of innovation decision, the nature of communication channels diffusing the innovation, the nature of the social system in which the innovation exists, and the extent of change agents' promotional efforts in diffusing the innovation, also influence the rate of adoption of an innovation (Rogers, 2003 p.221). It is worth mentioning, however, that among the five different factors that affect an innovation's rate of adoption, the five perceived attributes of an innovation have been most extensively studied and have been found to explain about half of the variance in innovations' rates of adoption (Rogers, 2003 p.222).

Moving to the decision stage, the individual decides whether to adopt or reject the innovation. According to Rogers (2003) trying the innovation on a small scale is an important part of the decision stage. The web, for example, can be used for communications only and not for conducting full online transactions. This might be considered as a process of trying in parts in this context.

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<sup>1</sup> It is worth noting that the notion of stages in Roger's model of innovation-decision process is used in a different context compared to what is used in this research. This research deals with the level of Internet adoption by examining simple versus sophisticated stages of adoption.

The result of the decision stage can be either adoption or rejection of the innovation. Rogers (2003) explains that two types of rejections; active or passive can occur. Active rejection involves rejecting the innovation after trying it whereas passive rejection or non-adoption involves not considering adopting the innovation in the first place.

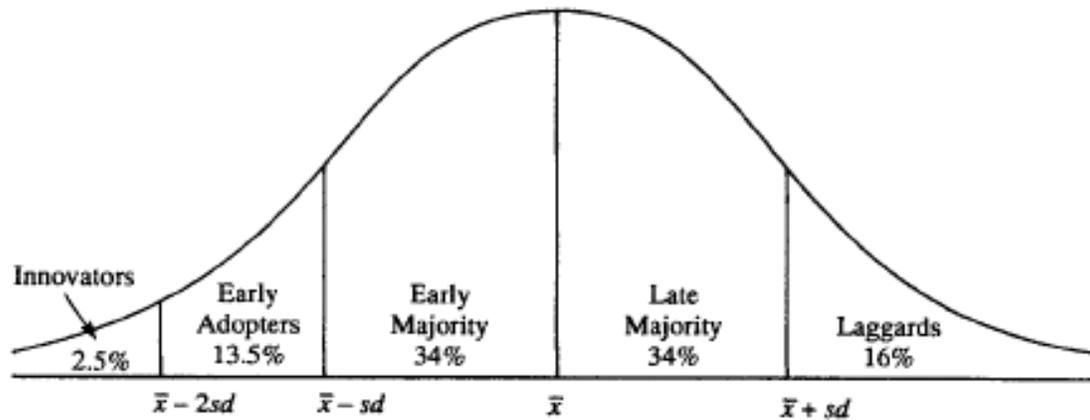
After deciding to adopt the innovation, implementation occurs when the individual actually uses the innovation. According to Rogers (2003) the implementation stage may take long time depending on the nature of the innovation. Finally at the confirmation stage, the individual seeks information to reinforce the already taken innovation adoption decision and to reduce dissonance. Discontinuation may occur at this stage if performance problems appear or if a better idea supersedes.

There is difficulty in obtaining empirical evidence to support the specified stages of the model because according to Rogers, “it is difficult for a researcher to probe the intrapersonal processes of individual respondents” (Rogers, 2003 p.195). In addition, individuals passing through the different stages may or may not recognize when one stage ends and the other begins (Rogers, 2003 p.195). It is important to mention however that Rogers’s model provides a suitable framework for studying technological innovations including the web and has been used by other researchers in this context as illustrated in the literature review.

#### 4.3.1.2 Rogers’s Model of Adoption Rates

In addition to the model of innovation decision process, Rogers provides a model of adoption rates based on the premise that not all individuals adopt an innovation at the same time and a way to categorize adopters. The criterion used for this categorization is *innovativeness* which he defines as “the degree to which an individual or other unit of adoption is relatively earlier in adopting new ideas than other members of a social system” (Rogers, 2003 p.280). Rogers classifies individuals into five categories that are: innovators, early adopters, early majority, late majority and laggards (Rogers, 2003 p.280). Figure 4.2 illustrates the adoption rates for these categories.

**Fig 4.2: Categorization of adopters based on innovativeness by Rogers**



Source: Rogers (2003, p.281).

The innovativeness dimension, as measured by the time at which an individual adopts an innovation, is used to distinguish between early and late adopters (Rogers, 2003).

#### 4.3.1.3 Modifications to Rogers's Model

As mentioned earlier Rogers's model of innovation adoption has been initially created to explain consumer adoption of innovations in rural societies. However, throughout different decades it has proved to be a suitable framework for explaining the adoption of different types of innovations by both consumers and organizations. When considering technological innovations, however, Rogers suggests that certain issues must be taken into consideration. He explains that a technology usually consists of two components being hardware and software. The hardware consists of "the tool that embodies the technology as a material or physical object" (Rogers, 2003 p.13) whereas the software consists of "the information base for the tool" ((Rogers, 2003 p.13). According to Rogers, whereas some technologies are hardware dominant, other technologies may be almost entirely based on information. Studying the diffusion of such software innovations is difficult since they have a relatively lower degree of observability, i.e. they can not be easily traced or observed (Rogers, 2003). Thus for an innovation highly based on software application such as the web, particular consideration is needed to account for this lack of observability explained by Rogers.

Rogers's model has been used in the study of either consumer or organizational adoption of tangible products (Thong, 1999; Sultan and Chan, 2000). Moreover, some studies focused on applying this model to service innovations (Lockett and Littler, 1997; Premkumar and Roberts, 1999; Doherty et al., 2003; Black et al., 2001; Frambach et al., 1998). It is important to further explore whether Rogers's model is also applicable to the business to business context or some adaptations are needed.

#### 4.3.1.4 Limitations of Rogers's Model

Rogers's model of innovation adoption is a dominant model in this field that offers researchers an established framework for measuring the adoption of various innovations by different decision making units. It is worth mentioning however that few limitations maybe apparent especially when applying the model to some innovations including the web.

The dichotomous adoption versus non-adoption decision doesn't take into consideration that adoption may occur in a series of levels (Davidoff et al. 2000). It is worth mentioning however that this dichotomy is much more about how researchers have operationalised adoption but not necessarily about how Rogers conceptualized it in the first place. It is worth noting however that Roger's notion of stages as explained earlier is different from the levels used in this research in that it relates to different stages in the decision making process as opposed to focusing on different levels of adoption once a decision has been made. The degree of adoption is particularly relevant when considering web site adoption which is the focus of this research, whereby adopters may assume different levels of adoption such as simple adoption whereby only basic services are provided on the web site or more sophisticated levels of adoption whereby more interactive features are provided. In their study on the adoption electronic banking by Dutch organizations, Frambach et al. (1998) mentioned that focusing on the adoption/non-adoption decision without taking into consideration the levels of adoption was a limitation to their study as they could have gained more insight into the adoption process by considering the levels of adoption.

Additionally, Premkumar and Roberts (1999), in their study on small rural companies' adoption of communication technologies, suggested that future research could identify factors that influence advanced levels of innovation adoption and that maybe different from those influencing initial levels. Moreover, and emphasizing the importance of considering levels of adoption, Thong (1999) found that the factors that affect the companies' likelihood of adoption are quite different from the factors that affect their extent of adoption. It is worth noting that this is similar to the concept of levels applied here in this research where both the likelihood and level of Web adoption by Egyptian travel agents are being measured. A single set of hypotheses is used in this research based on the argument that the same factors affect both the likelihood and level of adoption decisions but the strength of their impact may vary.

Therefore considering that the factors that affect early and late adopters of innovations are the same, as is the case in Rogers's diffusion curve may not hold true in all circumstances as is the case in these studies. Earlier adopters of an innovation maybe affected by a different set of factors than later adopters of the same innovation.

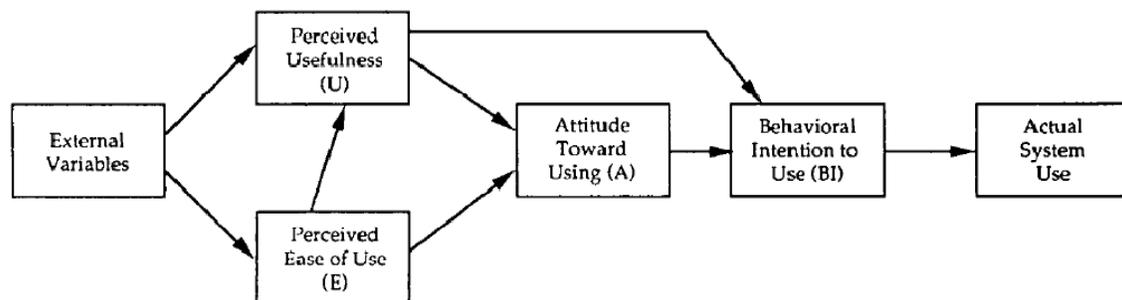
Having discussed Rogers's model of innovation adoption and highlighted its importance, adaptations and limitations, it is worth mentioning that although being a dominant framework in this field that has been used by many researchers in studying innovation adoption by both consumers and organizations, it is not the only useful innovation adoption model. The following section will discuss a technology acceptance model (Davis, 1986) that has also been used for specific technology related research.

#### **4.3.2 The Technology Acceptance Model (TAM)**

Besides Roger's model, attitude-behaviour theories such as the Theory of Planned Behaviour (TPB) and the Theory of Reasoned Action (TRA) have been used to explain consumers' adoption decisions (Shim et al., 2001; Yoh et al, 2003). Recently, an adaptation of The TRA, the Technology Acceptance Model (TAM), has been widely used in explaining and predicting individuals' acceptance of information systems (Venkatesh and Davis, 2000). Davis (1986) introduced TAM which specifically addresses the

determinants of computer acceptance among end users. TAM theorizes that an individual's behavioural intention to use a system is affected by two beliefs: perceived usefulness and perceived ease of use. Perceived usefulness is the extent to which a person believes that using the system will improve his or her job performance while perceived ease of use is the extent to which a person believes that using the system will be free from error (Venkatesh and Davis, 2000). TAM posits that both beliefs are of primary relevance to computer acceptance behaviours. TAM also suggests that perceived ease of use influences perceived usefulness because technologies that are easy to use can be more useful (Davis et al., 1989). The model thus states that perceived usefulness and perceived ease of use affect attitude toward use, which impacts behavioural intentions, which in turn impacts usage (McCloskey, 2003). In addition, TAM suggests that external variables such as individual differences and situational constraints are expected to affect user acceptance of technology as far as they mediate the two key belief constructs of perceived usefulness and perceived ease of use. Figure 4.3 illustrates the model.

**Fig 4.3: The Technology Acceptance Model (TAM)**



Source: Davis et al. (1989, p.985)

Although originally developed to predict individual consumer acceptance of information technology in the workplace and explain user behaviour across a broad range of end-user computing technologies and user populations (Davis et al., 1989), TAM has been applied recently by a range of studies to understand customers' adoption of e-commerce (Pavlou, 2003; McColoskey, 2003), and has also been used to study IT adoption among sales force (Schillewaert et al., 2005).

TAM has not been used in this research for a number of reasons. First, TAM is technology specific and particularly explains usage intentions and behaviours regarding

technology. Davis et al. (1989) used TAM to measure the use of text editor by MBA students; Jackson et al. (1997) used TAM to study the use of spreadsheet, database, word processor and graphics by students; Hu et al. (1999) used TAM to study the use of telemedicine technology by physicians. While this research studies the adoption of a technology which is the web in the travel industry, the main focus is not on the technology adopted per se but on the adoption for marketing purposes and the factors behind that.

Second, common criticisms of TAM are its simplicity and parsimony (Lee et al., 2003). Whereas TAM relies on perceived usefulness and perceived ease of use to measure acceptance of technology, other innovation adoption models like Roger's provide a richer and more comprehensive range of attributes that affect adoption. Roger's work on innovation attributes introduced relative advantage, compatibility, complexity, trialability and observability. Moore and Benbasat (1991) actually adopted the perceived usefulness and ease of use from Davis et al.'s (1989) TAM to measure relative advantage and complexity in their innovation diffusion model. Thus, although both perceived usefulness and ease of use are relevant in Roger's model, they have tended to serve as an addition to a wider range of other variables.

Third, research has shown that the influence of some factors on intention to use varies at different levels in the information system implementation process. Roger's model has recognized the notion of levels (although in a different way from the one used in this research as explained earlier) and that individuals are affected by different factors in these different levels. Thus, Roger's model was seen as more suitable than TAM in this research in applying the levels of adoption.

Fourth, an important limitation of TAM is considering information system to be an independent issue in organization dynamics. Research in the field of innovation and change management suggests that technological implementation is related to organizational dynamics which has a strong impact on the outcomes (Legris et al., 2003). Orlikowski and Hofman (1997) acknowledge that the effectiveness of any change process relies on the interdependence between the technology, the organizational context and the change model. This is better captured by the Rogers framework as opposed to TAM.

Fifth, TAM based studies have tended to focus on individual consumer acceptance of IT because the model is dominantly focused on attitude and behaviour, Thus, for example studies by Davis, (1989); Venkatesh and Morris, (2000); Michael and Frank, (2008) have all focused primarily on the individual and not organizational acceptance of IT. This research focuses on organizational adoption of the Web.

Roger's model is thought to be a dominant model in consumer based studies and has also been used in predicting both consumer and organizational adoption of innovations. Additionally, Roger's model is a more general adoption model and not technology specific as TAM model. For the above mentioned reasons and since the objective of this research is to study firm adoption of the web with the adopter unit here being the organization, Roger's model will be the model used in this research.

#### **4.4 Relationship between Consumer and Firm adoption studies**

As mentioned at the beginning of this chapter, innovation adoption literature has initially focused on the individual customer as the adopter of innovations and the unit of analysis. Thus although this research studies the adoption of innovation by organizations, it is necessary to provide a background on the research conducted on consumer adoption first as it has been the main focus of innovation adoption research and to try to map these consumer studies to the organizational ones.

Early customer adoption research tended to concentrate on identifying the characteristics of customers who are innovators and early adopters, in an attempt to identify those customers. Past research indicates that there are important differences between earlier and later adopters of innovations in socioeconomic status, personality variables and communication behaviour (Rogers, 2003 p.299). It is expected that if innovators and early adopters could be identified, they would be targets for companies' marketing campaigns for new products (Black et al, 2001). Besides considering customers' personal characteristics as significant predictors of customers' adoption of innovations, researchers studied the characteristics of the innovation itself as a stronger predictor of consumer adoption behaviour (Lockett and Littler, 1997; Black et al, 2001; Rugimbana and Iversen

,1994). In these studies, Roger's (1962) perceived attributes of an innovation being relative advantage, compatibility, complexity, trialability and observability as well as Bauer's (1960) concept of perceived risk have been used extensively and have been found as stronger predictors of consumer adoption behaviour.

Whereas the majority of studies focused on the individual consumer as the adopter of innovations, comparatively few studies have considered the factors affecting innovation adoption by businesses (Malhotra and Singh, 2007; Chong and Pervan, 2007; Poon and McPherson; 2005). Businesses are different from consumers in terms of their decision making processes and thus it should not be expected that outcome of consumer related studies can be directly generalized to businesses. Particularly, Frambach et al (1998) explains that organizational innovativeness is different from consumer innovativeness in terms of the motivation behind each. Whereas, consumers' innovativeness is motivated by satisfying individual needs, organizations innovate to meet business needs and carry out value adding activities aimed at sustaining or increasing competitive advantage. Consistent with consumer adoption research, business studies have attempted to identify both perceived innovation characteristics as well as firm characteristics as factors influencing the adoption decision (To and Ngai, 2006; Bayo-Moriones and Lera-Lopez; 2007; Real et al; 2006).

Whereas, Roger's perceived innovation attributes model has been initially directed toward the individual consumer, it has been extended to explain organizational innovation adoption behaviour and has proved to be a suitable framework in this context (Premkumar and Roberts, 1999; Thong, 1999). Although we have evidence that characteristics of the consumer as a decision maker affect adoption alongside perceived attributes of innovation, we are not clear about whether the same holds true for firms although there is every reason to believe that the characteristics of the decision making unit would continue to be relevant. Moreover, the consumer characteristics selected were usually ad hoc rather than have been systematically based on theory. It thus becomes less clear what specific characteristics affect companies' innovation adoption decision. Studies which have suggested that organizational characteristics affect adoption have

often not been well theorized. That is to say that the basic theoretical framework for the relationship between the characteristics of the organization as the decision maker and innovation adoption has not been well developed. Although it is expected that firm characteristics affect the adoption decision, there is no theoretical framework to help us understand firm characteristics and how these characteristics affect innovation adoption decision by firms. One well-known framework in the strategy literature, the Resource-based view of the firm (RBV), has the potential to explain the role of firm characteristics in influencing innovation adoption and thus will be used in this research to theorize how the characteristics of the firm as the decision making unit affect the adoption decision. Using RBV gives theoretical basis for the selection of firm characteristics. The following section will provide an explanation of the RBV and its relation to innovation adoption.

#### **4.5 The Resource-Based View of the firm**

The resource-based view (RBV) of the firm is a theory of competitive advantage that emphasizes the link between a firm's internal resources, strategy, behaviour and performance (Wright et al., 1994). It is worth noting that RBV is of relevance to the innovation research because innovation adoption is potentially an element of competitive success. RBV takes an "inside-out" or firm specific perspective by focusing on the internal resources of the firm as the major determinant of its competitive success (Dickson, 1996). Firm resources have been defined by Wernerfelt (1984) as tangible and intangible assets that are semi permanently tied to the firm. Barney (1991) expanded this definition to include "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness." Two assumptions are basic to the RBV that are: 1- resources are heterogeneous across firms and 2-these resources may not be perfectly mobile across firms, or in other words, they can not be transferred from a firm to another without cost (Barney, 1991). To this end, a firm's resources must have four features that are: 1-it must be valuable in that it helps the firm exploit opportunities and/or reduce threats, 2-it must be rare in comparison to the firm's competition, 3-it must be hard to imitate and 4-it must not be easily substitutable. These characteristics of a firm's resources provide an indication of how heterogeneous and

immobile a firm's resources are and thus how these resources can be used by the firm to generate sustained competitive advantage (Barney, 1991). According to the RBV, firm heterogeneity implies that an innovation is cheaper and/or more attractive to some firms than others. It may also imply that some firms have greater capabilities than others in relation to the adoption of innovations. That is to say that some firms appear to possess resources that give them comparative advantage in developing new processes or products (Lockett and Thompson, 2001).

Based on the RBV, innovation does not come simply from scanning the external environment in search for market opportunities, but from looking inside the firm to develop and build on core competencies. This indicates that the ability to innovate is related to the resources of the firm (Del Canto and Gonzalez, 1999). Thus even if an innovation appears to be relatively better than currently adopted ideas, a firm may not be able to adopt this innovation if it does not have the mix of assets or capabilities required for that. Therefore, there is an important relationship between a firm's resources and capabilities and its ability to adopt an innovation. Innovation is partly a function of the internal resources of the firm. Therefore when studying innovation adoption by firms besides studying the factors related to the innovation itself, it is also important to consider the ability of the firm to adopt the innovation which is reflected by the resources and capabilities possessed by the firm. Firm resources are heterogeneous and somewhat immobile across firms and therefore their ability to innovate is different accordingly (Del Canto and Gonzalez, 1999). This is consistent with consumer based studies that indicate, as mentioned above, that earlier adopters of innovations possess different personal characteristics than later adopters.

Proponents of the RBV have suggested different factors that fall under a firm's resources (assets/capabilities) and affect its competitive position. These include physical, human and organizational capital (Barney, 1991); relational and intellectual market-based assets (Srivastava et al., 2001); strategic, functional and operational capabilities (Hooley et al., 1998). According to Barney (1991) physical resources include the physical technology used in the firm, its plant and equipment, its geographical location and its access to raw

materials. Human capital resources include the training and experience of workers and managers in a firm. Organizational capital includes a firm's reporting structure, its formal and informal planning, controlling and coordinating systems and also the informal relations among groups within a firm (Barney, 1991). According to Srivastava et al. (2001) relational market based assets include relationships a firm has with external parties such as customers, strategic partners, channels, outsourcing agreements and others. As for intellectual market based assets, these represent the types of knowledge a firm possess about its competitive market. According to Hooley et al. (1998) strategic capabilities are related to senior management's ability to identify and interpret environmental trends and include the orientation of the business, facilitating organizational learning and managing organizational change. Functional competencies include specifically related functions or processes within the firm such as marketing capability. Finally, operational capabilities deal with implementation aspects or the skills needed by employees and managers to undertake the tasks set for them. Having discussed the dominant conceptual model of innovation adoption and the resource-based view of the firm, the following section will discuss the proposed conceptual model of this research.

#### **4.6 Proposed Conceptual Model**

The model presented in this research is a synthesis of Roger's model of innovation adoption and the Resource-based View of the firm (RBV). As mentioned at the beginning of the chapter, innovation adoption is theorized as a decision making exercise and this decision consists of three components. These are the innovation itself, the decision maker (the organization and the individual within the organization) and the external context. However, the external context will not be discussed in detail in this research because this study deals with a single market environment. Additionally, as mentioned earlier the proposed framework is based on Roger's innovation adoption model, the resource based view of the firm as well as theoretical and empirical foundations in previous innovation adoption literature. The proposed conceptual framework focuses on the factors affecting web adoption by travel companies. Broadly speaking, this model proposes that there are three groups of factors that affect web adoption by firms namely, innovation attributes,

firm resources and individual factors. Innovation attributes deal with characteristics pertinent to the innovation itself (web) as perceived by the adopter unit (firm). Firm resources are the specific capabilities and assets possessed by the firm that affect its ability to innovate. Finally, individual resources represent the characteristics of the organizational decision makers and how much they support or not support the adoption of innovation. As mentioned earlier, both organizational factors and individual factors represent the characteristics of the decision making unit.

As discussed in chapter 3, Roger's seminal text (2003, p.221) includes the following innovation attributes: relative advantage, compatibility, complexity, trialability and observability, which are complemented by Bauer's (1960) perceived risk. This research will test the impact of these attributes on innovation adoption given a particular context which is the travel industry and a particular innovation which is the web.

Additionally, similar to Roger's model of adoption rates discussed above, and in line with the results of previous literature review on innovation adoption that have shown the significance of individual factors particularly when considering small and medium sized enterprises as in this research, three individual factors will be used. These are top management support, attitude toward change and response to risk. Similar to previous literature, these factors are particularly important in this research because most travel agents in Egypt are SMEs and the owner is usually the manager and the decision maker at the same time. Thus, it is important to study the effect of the individual factors related to the owners of these SMEs on the web adoption decision. However, it is important to note here that this study only deals with organizational adoption of innovation but since SMEs are the focus here, individual characteristics of the organizational decision maker become relevant here to the adoption decision. That is to say that this study is looking at the adoption decision at the level of the firm rather than looking at the behaviour of individuals within the firm and their adoption.

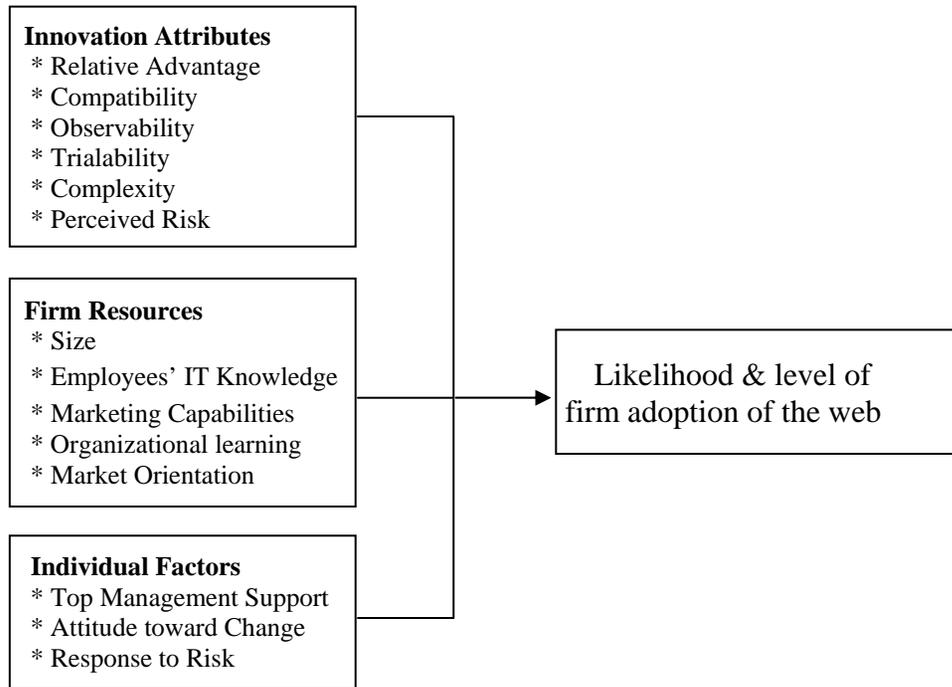
Unlike Roger's model, the proposed conceptual framework will not only study the adoption/ non-adoption dichotomy but will also attempt to measure the level of adoption.

This will be reflected more in the questionnaire (chapter 6) that shows how different questions were used to differentiate between simple and more advanced levels of web adoption by travel agents.

In addition to Roger's model of innovation adoption, the resource-based view of the firm (RBV) has been used as a source for model development in this research. Based on RBV that indicates that there is an important relationship between a firm's resources and capabilities and its ability to adopt an innovation, and in line with technological innovation adoption literature (table 3.7), that has shown that firm specific factors have significant relationship with web adoption, five firm-specific factors have been included in the model to test their effect on web adoption by travel firms. These are company size, employees' IT knowledge, marketing capabilities, organizational learning and market orientation of the firm. Thus the model includes fourteen factors under three key themes are innovation attributes, firm resources and individual factors.

The following figure (4.4) illustrates the proposed conceptual model and the following section discusses each of these factors individually and presents the hypotheses of this research.

**Figure (4.4): Proposed Conceptual Model of the Factors that affect firms' adoption of the Web in the travel industry**



## **4.7 The Development of Hypotheses of the Research**

The above figure illustrates the conceptual model. This section will provide an explanation of its components and in doing so the hypotheses for this research will be presented.

Having explained the three components of the innovation adoption decision earlier in this chapter, it is worth mentioning here that since likelihood and level of adoption, which are the different levels of adoption studied in this research, are both part of the same overarching decision process, a single set of hypotheses will be developed based on the argument that the same factors affect both the likelihood and level of adoption decisions but the strength of their impact may vary. However, the nature of this variation will be evaluated empirically rather than theoretically.

### **4.7.1 Innovation attributes**

As mentioned above, the innovation attributes included in the model are the five attributes suggested by Rogers (2003, p.221) as well as Bauer's perceived risk. The following is a discussion of each of these factors.

#### **Relative Advantage**

Relative advantage has been defined by Rogers (2003, p.229) as "the degree to which an innovation is perceived as being better than the idea it supersedes." Relative advantage thus indicates how much the adopters of an innovation can perceive benefits associated with adopting the innovation in comparison with their current ways of doing business. Roger's seminal text indicates that relative advantage is expected to have a positive relationship on innovation adoption. Several previous innovation adoption studies and in particular those which focus on the web as the innovation studied, found a positive significant relationship between the relative advantage of the innovation and adoption/non-adoption of the innovation (Chong and Pervan,2007, To and Ngai,2006; Premkumar and Roberts,1999).

Therefore, based on the above, it is expected that

***H1 The perceived relative advantage of the web will be positively related to the likelihood and level of web adoption***

### **Compatibility**

Rogers (2003, p.240) defines compatibility as “the degree to which an innovation is perceived as consistent with existing values, past experiences, and needs of potential adopters.” Roger’s seminal text indicates that a positive relationship is expected to exist between compatibility and innovation adoption. Previous research on the effect of compatibility on innovation adoption did not show consistent results with regards to its effect on innovation adoption. Some researchers found a significant positive relationship (Saffu et al., 2008; Black et. al, 2001; Lockett & Littler, 1997) while others found no relationship (Sultan & Chan, 2000). This variability in results may be due to the particular nature of the innovation or the context of the study. However, according to Roger’s and in line with some of the recent studies that have found a significant positive relationship between compatibility and web adoption (Grandon and Pearson, 2004; Beatty et al., 2001), it is expected that;

***H.2 The perceived compatibility of the web will be positively related to the likelihood and level web adoption***

### **Observability**

Rogers (2003, p.258) defines observability as “the degree to which the results of an innovation are visible to others.” The degree to which an innovation is observable, as perceived by members in a social system, positively affects its rate of adoption. The few studies that have examined the effect of observability on innovation adoption found mixed results indicating either a positive or a non-significant relationship (Chong and Pervan, 2007; Black et al., 2001). In line with Roger’s model, it is expected that;

***H.3 The perceived observability of the web will be positively related to the likelihood and level of web adoption***

### **Complexity**

Rogers (2003, p.257) defines complexity as “the degree to which an innovation is perceived as relatively difficult to understand and use.” According to him, the complexity of an innovation, as perceived by members in a social system, negatively affects its rate of adoption. Previous research on the effect of complexity on innovation adoption generally found a negative relationship to exist (Thong, 1999; Frambach et al., 1998; Houghton and Winklhofer, 2002) with only a few of those showing a non significant relationship (Premkumar and Roberts, 1999; Sultan and Chan, 2000). It is expected that the more difficult the innovation is perceived to be, the less likely are respondents to adopt it. Thus in line with Roger’s model and previous research results it is expected that;

***H.4 The perceived complexity of the web will be negatively related to the likelihood and level of web adoption.***

### **Trialability**

Rogers (2003, p.258) defines trialability as “the degree to which an innovation can be experimented on a limited basis.” The trialability of an innovation, as perceived by members of a social system, positively affects its rate of adoption. The studies that have examined the effect of trialability on innovation adoption have found mixed results indicating either a positive or a negative relationship (Chong and Pervan, 2007; Lockett and Littler, 1997; Black et al., 2001). In line with Roger’s model, it is argued that;

***H.5 The perceived trialability of the Web will be positively related to the likelihood and level of Web adoption***

### **Perceived Risk**

Perceived risk may reflect the risk associated with using the innovation or security issues related to the innovation (Lockett & Littler, 1997). Previous research results showed a negative relationship between perceived risk and innovation adoption (Doherty et al. (2003; Lockett and Littler, 1997). It is expected that the more the perceived risk associated with adopting the innovation, the less likely that respondents are willing to

adopt. Perceived risk maybe more relevant in a service context where the service can not be easily evaluated before adoption (Black et a., 2001). Therefore, it is expected that

*H.6 The perceived risks associated with the web will be negatively related to the likelihood and level of web adoption.*

#### **4.7.2 Firm Resources**

As mentioned above and in line with the resource-based view of the firm (RBV), firm resources include five sub-dimensions that are size, employees' IT knowledge, marketing capabilities within the firm, organizational learning and market orientation. As mentioned earlier, RBV proponents have suggested different factors that fall under a firm's resources (assets/capabilities) and affect its competitive position. Size for example falls under physical assets as described by Barney (1991). Employees IT knowledge falls under human assets as described by Barney (1991). According to Hooley et al. (1998) market orientation and organizational learning fall under a firm's strategic capabilities whereas marketing capabilities fall under a firm's functional capabilities. Real et al. (2006) also indicate that competitive advantage stems from a company's capabilities and skills with organizational learning becoming a fundamental strategic aspect. Size and employees' IT knowledge of the firm have received empirical support in the literature in their effect on technological innovation adoption and have been mentioned by both adopters and non-adopters as influential factors (Premkumar & Roberts, 1999; Scupola, 2003; Drury & Farhoomand, 1999; Doherty et al., 2003; Corbitt, 2000; Thong, 1999; Cragg & King, 1993; Goode & Stevens, 2000). A number of studies have examined the relationship between market orientation, organizational learning and marketing capabilities and innovation and these found a positive relationship (Leskovar-Spacapan and Bastic, 2007; Akgun et al., 2007; Poon and MacPherson, 2005). The following includes a discussion on each of these factors.

##### **Size**

Company size is one of the company's physical capital resources which according to Barney (1991) includes a number of things such as a firm's plant and equipment, its

geographic location, its access to raw materials, and its use of physical technology. According to Roger's (2003, p.409) "larger organizations are more innovative."

Many empirical studies showed that size is one of the important factors affecting the adoption of innovations showing a significant positive relation indicating that the larger the organization and hence the more the resources that it possesses, the more likely it is to adopt an innovation (Malhotra and Singh, 2007; Bayo-Moriones and Lera-Lopez, 2007; Bruque and Moyano, 2007; Tan et al., 2007; Fabiani et al., 2005). Other studies however, showed a non significant relationship between size and innovation adoption (Scupola, 2003; Frambach et al., 1998; Premkumar and Roberts, 1999). Moreover, some researchers argue that smaller organizations are more likely to adopt the web because of the higher structural flexibility of small organizations in comparison to larger ones (Salavou et al., 2004; Damanpour, 1992).

It is important to notice that size indirectly reflects the resources owned by the firm; financial and human. One of the most common measures of size is the number of employees (Kimberly and Evanisko, 1981). Other measures include fixed assets (Thong, 1999) and annual revenues (Hamill and Gregory, 1997). Although size has been argued to be one of the best predictors of innovation adoption, research results on its relationship with adoption have been controversial.

Based on the majority of empirical researches that have found a positive relationship between size and innovation adoption, it is expected that:

***H.7 The size of a travel agent will be positively related to the likelihood and level of web adoption.***

### **Employees IT Knowledge**

A company's human assets include the people working in it and their skills and abilities (Hooley et. al, 1998). The level of knowledge and experience of employees can act as a facilitator or barrier to experimenting with new ideas. Previous studies on innovation

adoption found a significant positive relationship between IT knowledge within the organization and innovation adoption (Thong, 1999; Scupola ,2003; Goode and Stevens, 2000; Houghton and Winklhofer, 2002). Additionally, Cragg and King (1993) found that the lack of IT knowledge by either managers or employees had a negative impact on IT adoption. Based on these empirical research results it is expected that:

***H.8 Employees IT knowledge will be positively related to the likelihood and level of web adoption.***

### **Marketing Capabilities**

Marketing capabilities refer to the integrative processes designed to apply the collective knowledge, skills and resources of the firm to the market-related needs of the business, enabling the firm to add value to its goods and services and to meet competitive demands (Day, 1994). Marketing capabilities include knowledge of the competition and of customers and the skill of segmenting and targeting markets, advertising and pricing and integrating marketing activity (Song et al., 2008). A growing number of researchers indicate that marketing capability contributes to the commercial success of products and services marketed by the firm, to creating superior customer value and thus to firm performance (Krasnikov and Jayachandran, 2008; Ruiz-Ortega and Garcia-Villaverde, 2008; Guenzi and Troilo, 2007). However, research examining the impact of marketing capability on innovation is quite limited (Benedetto et al., 2008; Weerawardena, 2003).

According to Poon and MacPherson (2005) innovating firms must develop considerable marketing capability and thus innovations involve not only technological but also non-technological activities such as marketing capability as well. These authors found a positive relationship between marketing capability and firms' innovation capability. Similarly, Weerawardena (2003) found that there is a significant positive relationship between marketing capability and an organization's capacity to innovate. Weerawardena and O'Cass (2004) argue that learning from markets and having the ability to reach the targeted customers with value added products represented in the firm's marketing

capabilities are critical for firms pursuing innovation based competitive strategy. Therefore, it is expected that:

***H.9 Marketing capabilities within the company will be positively related to the likelihood and level of web adoption.***

### **Organizational Learning**

Organizational learning involves giving rise to a set of organizational values that influence the propensity of the firm to create and use knowledge. Learning orientation thus affects the degree to which proactive learning occurs within the firm (Sinkula et al., 1997). Three organizational values; commitment to learning, open-mindedness and shared vision constitute the core components of learning orientation within a firm.

Chipika and Wilson (2006) argue that firms could only innovate if they have the competencies and capabilities to make use of their learning. Similarly, Real et al. (2006) explain that distinctive competencies are developed through the learning process and this helps the firm to gain competitive advantage and to become more innovative and successful.

Previous researches found that organizational learning influences an organization's innovation capacity. Jimenez-Jimenez et al. (2008) found that organizational learning has a positive impact on innovation and that an organization trying to enhance innovation should improve its organizational learning processes. Akgun et al. (2007) found that organizational learning is positively associated with product innovativeness. Similarly, Salavou et al. (2004) found that learning orientation has a significant positive relationship with SMEs innovation. This finding is in line Hurley and Hult (1998) suggestion that learning orientation promotes a firm's receptivity to innovation and also similar to Calantone et al. (2002) who found that learning orientation has a positive effect on organizational innovation.

Therefore, based on the above it is expected that:

***H.10 A positive orientation toward organizational learning will be positively related to the likelihood and level of web adoption.***

### **Market Orientation**

Market orientation of the firm involves the activities of market information acquisition and dissemination and the coordinated creation of customer value. It consists of three components; customer orientation, competitor orientation and interfunctional coordination. Customer orientation and competitor orientation include all of the activities involved in obtaining information about buyers and competitors in the target market and disseminating it throughout the business. Interfunctional coordination deals with the coordinated efforts of different departments to create superior value for the customer (Narver and Slater, 1990).

Previous research results indicate that there is a relationship between market orientation of firms and their capacity to innovate. Leskovaar-Spacapan and Bastic (2007) in their study on factors affecting the innovation capability of organizations found that lack of internal organizational capability including market orientation and others are among the important reasons why organizations exhibit lower levels of innovation capability. Based on an empirical study on 744 firms, Jimenez-Jimenez et al. (2008) found that market orientation has a positive impact on firms' innovation capability. Similarly, Salavou et al. (2004) found that market orientation had a significant positive effect on SMEs innovation. This is in line with what Hurley and Hult (1998) indicated when discussing that market orientation is related to a firm's innovativeness.

Therefore, it is expected that:

***H.11 The degree of market orientation will be positively related to the likelihood and level of web adoption***

### **4.7.3 Individual factors**

As mentioned above and in line with Roger's model of adoption rates and previous empirical results, individual factors include three sub-factors that are top management support, decision makers' attitude toward change and response to risk. These factors have received empirical support from past researches indicating a significant positive influence on innovation adoption (Corbitt, 2000; Thong, 1999; Lockett & Littler, 1997; Brancheau & Wetherbe, 1990; Sultan & Chan, 2000). Adopters were found to have strong management support, a more favorable attitude toward change and are better able to cope with risk. The following is an explanation of each of these factors.

#### **Top Management Support**

Top management support has found strong empirical support as a factor affecting the adoption of innovations. Bengtsson et al. (2007) in their study on the factors that differentiate firms' adopters of advanced web-based marketing operations from non-adopters found that the presence of champions, top management commitment, and entrepreneurial support are the top three attributes that differentiate between adopters and non-adopters. Similarly, Bruque and Mayano (2007) found that top management support was among the factors that significantly affected the speed of adoption of information technology in SMEs. Similar results were found in many other empirical innovation adoption studies (Bharati and Chaudhury, 2006; Beatty et al., 2001; Premkumar and Roberts, 1999).

Interestingly, Toe and Pian (2003) in their study on the factors affecting firm's level of adoption of the web represented in five levels ranging from simple e-mail adoption to using the web to transform business operations found that top management support does not affect the *level* of adoption of the web. They explain that by saying that there is little difference in top management support among different levels of adoption. According to them, one possible reason for that is that management is already aware of the importance of the web as it has already been adopted in the first place. Thong (1999) arrived at a similar result when studying the level of adoption of information systems. He found that although CEO and innovation characteristics of the decision maker are important

determinants of the decision to adopt information systems, they do not affect the level of adoption.

Based on the above it is expected that:

***H.12 Top management support will be positively related to the likelihood and level of web adoption.***

### **Attitude toward Change**

According to Rogers (2003, p.290), earlier adopters of innovations have more favorable attitude toward change than later adopters. Frambach and Schillewaert (2002) in developing a framework on individual level adoption of innovations within organizations explain that an individual's cognitive beliefs and affects which are reflected in his/her attitude toward the innovation affect his/her acceptance of the innovation.

Previous research results indicate that attitude of the decision maker toward change has an effect on the adoption of innovations. In their study on business to business e-commerce adoption in China, Tan et al. (2007) found that one of the factors that acted as a barrier to the adoption process was the negative attitude toward change where they explain that China's culture is conditioned to slow responses and therefore has difficulty in dealing with rapid change. Similarly, Schillewaert et al. (2005) in their study on information technology adoption by sales reps from different sales organizations found that attitude toward change had a positive impact on adoption. Generally, previous researches found that the decision maker's attitude toward change has a significant positive impact on innovation adoption (Corbitt, 2000; Lockett & Littler, 1997; Thong, 1999).

Therefore, it is expected that:

***H.13 Management's attitude toward change will be positively related to the likelihood and level of web adoption.***

## Response to Risk

According to Rogers (2003, p.290), earlier adopters of innovations are more able to cope with uncertainty and risk than later adopters. Research results indicate that adopters tend to be more venturesome than non-adopters. Wan et al. (2005) in their study on the determinants of firm innovation in Singapore found that willingness to take risks had a significant positive relationship with organizational innovation. Similar results were found by Sultan and Chan (2000) in their study on information technology adoption by individuals in US software companies where they found that response to risk significantly affected the adoption decision. Tabak and Barr (1996) also found the same results when studying information technology adoption by hospitals in USA. Based on Roger's innovation adoption model and on previous empirical research results, it is expected that:

***H.14 Management's response to risk will be positively related to the likelihood and level of web adoption.***

The following table (4.1) provides a summary of the developed research hypotheses as discussed above.

**Table (4.1): Summary of Hypotheses of the Research**

Hypotheses	Hypotheses Effect
H1 The perceived relative advantage of the web will be positively related to the <i>likelihood and level</i> of web adoption.	+
H.2 The perceived compatibility of the web will be positively related to the <i>likelihood and level</i> of web adoption.	+
H.3 The perceived observability of the web will be positively related to the <i>likelihood and level</i> of web adoption.	+
H.4 The perceived complexity of the web will be negatively related to the <i>likelihood and level</i> of web adoption.	-
H.5 The perceived trialability of the web will be positively related to the <i>likelihood and level</i> of web adoption.	+

H.6 The perceived risks associated with the web will be negatively related to the <i>likelihood and level</i> of web adoption.	–
H.7 The size of a travel agent will be positively related to the <i>likelihood and level</i> of web adoption.	+
H.8 Employees IT knowledge will be positively related to the <i>likelihood and level</i> of web adoption.	+
H.9 Marketing capabilities within the company will be positively related to the <i>likelihood and level</i> of web adoption.	+
H.10 A positive orientation toward organizational learning will be positively related to the <i>likelihood and level</i> of web adoption.	+
H.11 the degree of market orientation will be positively related to the <i>likelihood and level</i> of web adoption.	+
H.12 Top management support will be positively related to the <i>likelihood and level</i> of web adoption.	+
H.13 Management’s attitude toward change will be positively related to the <i>likelihood and level</i> of web adoption.	+
H.14 Management’s response to risk will be positively related to the <i>likelihood and level</i> of web adoption.	+

## 4.8 Conclusion

This chapter contributed to the second research objective by developing the conceptual framework that acts as the foundation for this study which is based on Roger’s model of innovation adoption, the Resource-based view of the firm and previous empirical research results. Roger’s model provides valuable information about the perceived innovation attributes and also the individual characteristics that affect innovation adoption. The resource-based view of the firm deals with the firm-specific factors that are thought to have an influence on innovation adoption. Finally, a literature review on innovation adoption shows all the different factors that have been used by researchers to study innovation adoption as well as provides empirical evidence about which ones were found significant.

. The conceptual model as presented in figure 4.4 proposes that there are three groups of factors that affect web adoption by firms namely, innovation attributes, firm resources and individual factors. Again, as mentioned earlier, the decision making unit is divided

into two components being the organization overall and the key individual within the organization. It concentrates on the relationship of fourteen constructs with web adoption. Fourteen hypotheses were developed to test the relationship of each of these constructs and web adoption.

The next chapter will present the context of the study which is the tourism sector in Egypt whereby it will provide background information as well as an overview of this sector on which the empirical work will be conducted before moving to the methodology chapter.

## **Chapter Five**

### **The Web and the Travel and Tourism Industry**

#### **5.1 Introduction**

This chapter will discuss the context of this study that consists of two dimensions being the web and Egypt. Although the research may address a general problem, it is important to understand the context in which the research is carried out. First, the chapter will look at the web use in the travel and tourism industry and then it will consider Egypt as the particular case under study. The chapter will start by describing the tourism product as being an information product. The importance of the web to the tourism industry as well as the benefits of using the web in the tourism industry will then be explained. The chapter will then discuss the challenges and problems of web use by tourism organizations worldwide. An area that has received much attention in the literature regarding the impact of the web on the distribution in the travel and tourism industry will then be highlighted. The chapter will then describe the tourism sector in Egypt including its importance, problems, institutions and current performance. Finally the chapter will discuss web use in Egypt and in the tourism sector in particular.

#### **5.2 Tourism as an Information Product**

“Information is acknowledged to be the “life blood” of tourism, because without information, customers’ motivation and ability to travel is severely limited” (O’Connor & Frew, 2002). This particular need for information is heightened by the exact nature of the tourism product being intangible, complex, and interdependent. Tourism products are diverse, are rarely purchased in isolation, and can be provided in a wide range of combinations. Typical to tourism products characteristics are complexity, dependence on time and place, a broad spectrum of quality and price relations and dependence on cooperation and human factors (Zelenka, 2009). O’Connor & Frew (2002) assert that efficient, fast exchange of information is vital to minimize the gap between customers’ travel expectations and their actual experiences. The information-based nature of the tourism product implies that the web, which by its very nature offers global reach and

multimedia capability, has become an important means of promoting and distributing tourism services. Planning and booking a trip online has become common for travellers (Kim et al., 2007; Matzler et al., 2005). Several studies have shown a direct fit between the internet and the tourism products (Buhalis and Licata, 2002; Wang et al., 2006). The web has allowed timely and accurate information to be provided to customers effectively and at a low cost. Tourists can now receive comprehensive, timely and relevant travel information in a virtual environment to assist their travel making decisions (Law et al., 2004). The provision of timely and accurate information relevant to customers' needs has thus become an important factor to successful travel marketing effect (Wang and Fesenmaier, 2006). Additionally, access to international markets is key for the tourism industry to reach its full potential. The web is seen by many as having the potential to help small tourism businesses understand their markets better, extend their market reach and serve customers more effectively irrespective of their geographical location (Elliott and Boshoff, 2007).

Information and communication technologies thus have been changing the global tourism industry rapidly. On the impact of information technology on tourism competition, Buhalis (2006) indicates that the Internet provides a globally distributed infrastructure for inexpensive delivery of multimedia information, promotion and distribution of tourism products and services. E-tourism is thus emerging as a way forward for many tourism organizations and destinations around the world (Buhalis and Deimezi, 2004).

### **5.3 Importance of Web use in the Tourism Industry**

Different strands exist in literature concerning the effect of the IT revolution including the web on the tourism industry. These strands can basically be seen as either supply driven indicating what firms can do or in other words what is technically possible to provide via the web or demand driven indicating what customers demand and new needs created by this new medium. Based on a comprehensive review of key eTourism research in the past 20 years, Buhalis and Law (2008) identified three key themes as the main axes

of that research, namely: consumer and demand dimensions, technological innovation and industry functions representing demand, supply and technologies.

Demand driven literature discusses new trends and the transformation in consumer behavior as well as the emerging realities in the tourism marketplace (Buhalis and Costa, 2006). According to Buhalis and Law (2008, p.610), empowered by ICTs and the web, the “new” tourist is becoming more knowledgeable and is seeking exceptional value for money and time. Niininen et al. (2007) indicate that customers have become more sophisticated, more demanding, requesting high quality products and value for their money and time. Werthner and Ricci (2004) explain how the web is changing the needs of consumers who are increasingly becoming less loyal, take more frequent vacations of shorter duration and take less time between choosing and consuming a tourism product. Based on a survey on customers’ web preferences attributes Kim et al. (2007) found that when customers purchase packages services, their satisfaction derives from convenience as much as discounted price. Nysveen et al. (2003) found that for tourism websites, the search function, service integration, and personalization are customers’ most preferred value added services. Buhalis and Licata (2002) explain how the commercial introduction of the web has led to a change in the pattern of tourism buying for both leisure and business users. This change, in their opinion, has been facilitated by the fast and easy access to high quality information with minimum inconvenience, the possibility of purchasing tourism products online thus finalizing the transaction with much less effort as well as the 24h/365 days access without being constrained to working hours of travel agents. These changes in return have resulted in higher service expectations by customers. Customers increasingly rely on electronic media to obtain information about products and services and to communicate their needs and wishes to suppliers rapidly. They become demanding, requesting high quality products and services as well as value for time and money (Buhalis and Deimizi, 2003).

Graces et al. (2004) explain how the web allows consumers to communicate directly with tourism organizations in order to request information and purchase products, as well as to interact with principals. They explain how consumers can access information about

tourism products instantly, inexpensively and interactively and how they can make and alter reservations easily via the web due to the inherent characteristics of the medium. Anckar (2003) adds to the same discussion indicating how the web has allowed prospective tourists to make fast, convenient and inexpensive travel reservations as well as provided them with a wider selection of travel service providers and real-time information on prices and availability. The use of online travel services is actually becoming now one of the most popular ways that consumers use to purchase their travel tickets resulting in traditional travel agencies being ranked last in customer usage (Kim et al., 2007).

Supply driven literature explains how companies can benefit from the web in the provision of the tourism service. Changes are especially obvious in the way that tourism organizations communicate with their individual and institutional clients and how they manage their distribution function (Buhalis and Deimezi, 2004). The web has provided interactivity as an important development to the promotional process used by companies whereby the communication model changed from being one-to-many to being many-to-many (Schmidt et al., 2008). Martin (2004) indicates that e-innovation has allowed small travel firms to develop new relationships with customers, long lasting and with potential for competitive advantage via the use of technology. Buhalis and Law (2008), based on Porter's (2001) study on how the web has changed the industry's five forces, indicate that suppliers of travel products enhanced their position within the industry due to the increased possibility of interconnectivity and interactivity with consumers and partners. According to them, the bargaining power of suppliers was enhanced by allowing a direct contact with consumers and decreasing distribution costs while creating the opportunity for partnerships with many affiliates and other distributors. Buhalis and O'Connor (2005) indicate that tourism organisations need to use ICTs to develop strategies that are customer centric, profitability driven and partnership enabled.

Vrana and Zafiroopoulos (2006), based on a survey on Greek travel agents' attitudes toward web adoption, found that facilitation of global marketing and completion of online services are the most important reasons for travel agents' use of the Web.

Similarly, Ancar and Walden (2001), based on a study on introducing web technology in a small hotel in Finland, explain that the web offers small and medium-sized hospitality organizations (SMHOs) opportunities to: improve their competitive position in comparison with their larger counterparts by giving them representation in the global marketplace, be independent from intermediaries, be available 24hours at minimal cost and automate many business processes. They however, think that many barriers hinder SMHOs from taking full advantage of the web including lack of in-house IT skills, limited financial resources and resistance to change. Similarly, Pramod and Carson (2002) found that limited skills, costs and physical access barriers have made it difficult for indigenous communities in Australia to effectively use online technologies to benefit from the opportunities.

Based on a study on the adoption of web by Malaysian travel agencies, Suraya (2005) found that among the benefits of web adoption as mentioned by travel agents were that the web enhanced the flexibility and convenience of their business activities, it allowed them to reach a large number of customers and to promote their products domestically and internationally and it also allowed them to provide reliable, up to date and timely travel information to their customers. Based on a survey on 95 hotels in Thailand, Sahadev and Islam (2005) found that among the reasons that affected hotels propensity to adopt ICTs was the proportion of customers from high web penetration countries who visit the location of the hotel. They found that hotels in highly developed markets with a large number of visitors coming from USA and Europe are more prone to adopt ICTs. Buhalis and Licata (2002), based on a survey conducted on tourism experts and academicians in the UK, explain that the web enables companies to implement customer relationship management programs thus enhancing the opportunities for interaction and understanding by both parties. The 24h/365 days access helps in achieving this benefit. Travel agencies now look out for customers' best interest by using information technology to help them find the products that best suits their needs (Tsai et al., 2005). ICTs provide travel companies with the tools needed to search for meaningful and profitable niche market segments, to identify value added components for the product and to promote differentiated products through specialized media to particular market segments (Buhalis, 2004).

According to Wang and Fesenmaier (2006) successful web-based marketing strategies require the integration and co-ordination of three complementary aspects of web marketing namely, website feature, website promotion strategies and customer relationship management (CRM) programs. Buhalis (2003) further emphasizes relationship building by focusing on the information and communication technologies used in the tourism industry by explaining that technology creates opportunities for one-to-one marketing that enables the management of customer relationship through establishing, enhancing and maintaining relationships. According to Litvin et al. (2008) the web has enabled new forms of communication platforms that empower both tourism providers and consumers, allowing a vehicle for sharing information and opinions from both businesses to customers and from customers to customers. Additionally, Douglas and Mills (2004) explain that the interactivity, comprehensiveness and improved quality of the web information provide the base for real-time communication, reliable service and positive web experience, which are important to customer satisfaction and ultimately retention of online customers. Based on their empirical study on the impact of website quality on customer satisfaction and purchase intentions in the hospitality and tourism fields, Bai et al. (2008) found that website quality is critical in driving traffic, making people stay and eventually attracting people to purchase online products. Buhalis and Kaldis (2008) found that the medium was viewed by hoteliers as an effective tool for optimizing customer interactions, minimizing distribution costs and reducing dependency on third parties. Similarly, Elliott and Boshoff (2005) found that customer orientation or properly understanding customers' needs is an important determinant of successful web marketing by small tourism businesses.

#### **5.4 Challenges of Web use in the Tourism Industry**

Besides the many benefits offered by the web to tourism companies and customers, some challenges exist that need to be considered and thought of. This section will focus on actual experiences of tourism companies in different parts of the world in their application of the web and the challenges they have encountered. Amongst the different challenges mentioned are security issues, lack of human contact, problems of trust, consumer privacy issues, broadband restrictions, socio-cultural factors, tension between

suppliers and distributors, lack of skilled labour and the small number of bookings conducted online.

Buhalis and Licata's (2002) comment that the two main problems that were mentioned by their respondents were the lack of human contact during the interaction and the lack of face-to-face up sell/cross sell opportunities. Respondents felt that since online users do not have physical interaction with the actual seller, it is more difficult for the seller to trigger further sales or to lead the customer to purchase more expensive or extra products.

Security issues associated with conducting transactions over the web were also seen as significant challenge that needs to be carefully considered. Vrana and Zafiroopoulos (2006), based on a study on Web adoption by travel agents in Greece found that security issues and lack of interpersonal communication represented the main barriers for marketing over the web. Bhatnagar and Ghose (2004) found that consumers are more concerned about areas of potential risk including the integrity of information and the reliability of the vendor than the benefits of transacting online. Graces et al. (2004) based on a survey on 212 Spanish hotels and lodges also found that although security issues are still perceived as a significant barrier to web use by consumers in their purchase of tourism products via the web, increasingly consumers who use the online services start to appreciate the benefits and realize that the web is a secure form of purchasing. Similarly, Buhalis and Kaldis (2008) found that security issues and sustaining a coherent pricing policy were the main disadvantages that hoteliers in Athens identified relevant to the web.

Consumer privacy issues also represent a challenge to travel companies who need to exert effort to make customers trust the online environment in order to encourage them disclose personal data needed to complete a transaction online (O'Connor, 2008).

Ma et al. (2003) based on a qualitative survey on web adoption in China's tourism industry found that the lack of trust between consumers and suppliers as well as network security issues were among the major worries and barriers for tourist companies to explore online opportunities. Besides security issues, broadband restrictions that inhibit

media content diffusion were seen to form another limitation to web use by tourism companies. Since a significant potential exists for the use of multimedia to convey graphic information and animation about tourism products through videos and interactive presentations, large potential is anticipated to be captured by hotels from multimedia once the technical problems are solved. Additionally, other barriers to IT usage cited by small travel agents in India include high cost, lack of trained manpower and poor financing facilities (Chaudhary, 2000). This is similar to tourism SMEs in Australia and New Zealand who also cited cost and poor understanding of the technology as barriers to use of ICTs, particularly the web, as a promotional tool (Rick, 2001; Nodder et al., 2003). Poor understanding of the technology particularly in relation to complexity of trying to navigate through web sites was identified as a main barrier that prevented small and medium tourist enterprises (SMTes) in the European hotel sector of using the web to its fullest capability (Collins et al., 2003).

Lu et al. (2007) based on a study on the development of the tourism industry in China as a result of the web found that slow website speed, security issues, inability to provide customers with prompt answers to inquiries, obsolete information and lack of easy-to-use search functions were the main problems identified. Karanasios and Burgess (2008), based on a qualitative survey conducted on two developing countries (Malaysia and Ecuador) found that the main obstacles faced by travel companies in making use of the web include a focus on local customers who prefer the use of telephone to bargain on prices. Other obstacles included company owners being “too old” to learn to use the technology and also language related barriers. This suggests that socio-cultural and customer behaviour factors act as barriers to Web adoption in these countries. According to Cai et al, (2004) and Chen and Yen, (2004) the main factors that need to be focused on in order to build the confidence of travel agencies in using the web as an effective marketing tool are security issues and the required technology. Bennett and Lai (2005) based on a quantitative study on the impact of the web on travel agencies in Taiwan found that the main obstacles faced by travel agencies were the high capital costs required in contrast to the small number of bookings online and the difficulty of recruiting skilled labour with IT and marketing knowledge. Costs and inadequate

knowledge were also found by cited as critical barriers to web use for business purposes by Ghanaian hotels (Ayeh, 2006). According to Paraskevas and Buhalis (2002), two thirds of their 106 UK and Greek small hotel respondents mentioned that they are often intimidated by the complexity of ICT and are unable to follow its continuous changes and improvements.

Another challenge is related to the tension that might arise between the supplier of the travel service and the distributor. Based on a survey conducted on hotel chains, individual hotels and airlines in Spain, Vich-i-Martorel (2004) found that a challenge that was agreed upon by respondents was related to the possible boycott by tour operators of hotels that use the web for direct sales which is caused by the fact that consumers can directly access tourism principals without contacting tour operators. This same challenge has been mentioned earlier by Reinders and Baker (1998) who explained that travel principals (i.e. airlines, car rental, and accommodation) might be disinclined to adopt on-line retailing on a wide scale out of fear of retaliation by agents. In their opinion, travel agent retail outlets are the most prominent point-of-sale for airline travel, ferries, cruises and car-rental for the leisure market. While hotel companies and holiday centres are less dependent on sales through travel agents, they would still be vulnerable to an agents' sales boycott. They argue that the cost to the principals of distributing elaborate information free to a large number of systems and customers, and updating it, is likely to prove inhibiting, whilst it seems unlikely that the customer would willingly pay to make enquiries. Fears also arise about consumers making early reservations and then cancelling at a later stage if they can replace them with late availability bookings at bargain prices. Houghton and Winklhofer (2004) highlighted a similar challenge of channel conflict but in the context of export business when they explained that web site or ecommerce adoption could lead to conflict between channel members due to several reasons such as displaying prices on the web as it could reveal margins earned by distributors or agents. They also mentioned that channel relationships can be affected where intermediaries can be cut out of channels or compete with e-commerce, in a process known as disintermediation.

The idea of cooperation between the different parties involved was emphasized by Palmer and McCole (2000) who highlighted the importance of the cooperation between the different stakeholders in the tourism industry including suppliers, customers, companies, and even rivals linked by information technology in order to share costs, skills, and access to each other's markets. According to Palmer and McCole (2000) this is one of the main challenges of electronic commerce which involves the ability of different tourism suppliers to link their web sites together to present a complete "virtual organization" without fear of losing business to other suppliers.

To sum up barriers of ICT and web adoption by tourism SMEs, the main factors commonly mentioned are security issues, lack of human contact, online pricing policy, conflict between channel parties, high cost, lack of skilled employees and poor understanding of the technology.

The next section will discuss the impact of the web on the distribution in the tourism industry.

## **5.5 Impact of the Web on Distribution in the Tourism Industry**

One of the areas that has received much attention in the electronic marketing literature is the impact of the web on distribution. Of particular interest to the tourism industry is whether travel principals can effectively bypass travel agents and reach customers directly via the web or whether they will still be in need of travel agents to act as intermediaries between them and their customers. Moreover, how can both travel principals and travel intermediaries achieve benefit from the electronic medium and avoid conflict is an area of concern. There is little empirical evidence to date to support the arguments and predictions regarding the future role of intermediaries in the travel distribution chain. What can be observed is that although there is a lot of hype about disintermediation, in reality however, we have seen that offline intermediaries did not disappear but even we have seen a lot of re-intermediation. The following is an illustration of different opinions in literature in this regard.

Buhalis and Law (2008) indicate that ICT's have transformed the distribution function to an electronic marketplace where access to information and ubiquity is achieved, while interactivity between principals and consumers provides many opportunities. Suppliers of tourism services can now directly access customers without having to rely exclusively on powerful intermediaries. The web thus forces and enables tourism organizations to change their strategies dramatically (Buhalis and Zoge, 2007). According to Tsia et al. (2005) suppliers believe that they no longer need intermediaries to sell their products and that direct marketing on the web is cutting into the traditional intermediaries' business. Susskind et al. (2003) contend that travel agencies not only face an increase in traditional competition, but also the appearance of new forms of competition created by virtual travel agencies that lack physical offices but offer customers the same tourism products and services via the web. According to Alvarez et al. (2007) travel agents need to rethink their function to deal with a potential "disintermediation process" since the future of traditional travel agents is, at least, uncertain.

Contrary to the arguments for disintermediation, some researches argue that re-intermediation will occur. Re-intermediation or cybermediation has been defined as the "utilization of ICT and web tools for the development of either new intermediaries or new methods for existing intermediaries that enable them to re-engineer the tourism distribution channel" (Bennett and Buhalis, 2003). According to Bennett and Lai (2005) the web is presenting opportunities for new electronic intermediaries. Based on the premise that intermediaries exist because they provide value-added services, these then have the potential to pass economies of scale directly to consumers, offering reduced fares as well as convenience of making reservations on a 24/7 basis. Offering value added services, improving the real world shopping experience, knowledge about consumers, the travel market and supplier offerings are the things that travel agents must refocus their efforts on if they want to be competitive in the web world (Bedard, 2005). Despite the threat of disintermediation, the web has created new opportunities for travel agencies such as providing service around the clock and being accessible from home and the workplace (Standing and Thandarayan, 2000).

Regarding the role played by intermediaries in the electronic marketplace, the following is an illustration of different opinions in this respect. Arguments for the continued existence of tourism distribution channels are based on the rationale that travel agencies are professional travel advisers and they offer valuable information, services and advice to customers. In their study on the development of tourism in China as a result of the web Lu et al. (2007) identified a number of functions of tourism and travel sites including providing general tourism information such as destination guide, providing customized services to meet individual customers' needs, provide online booking, payment and tourism information search. Tsai et al. (2005) argue that intermediaries can still play four key roles in the electronic marketplace that are: (1) act as information brokers (2) process transactions by booking rooms and transferring money, (3) provide advice to customers and (4) provide value-added services by integrating customers' requirements for hotels and other travel needs. Bennett and Lai (2005) explain that travel agents should focus on their origins thus concentrating on personal service and reposition their role as travel consultants by providing professional advice and value added services. Additionally, they should try to become more technologically oriented. Kim et al. (2007) suggest that online travel agencies must strive to provide enhanced websites that are more humanized, secure and offer more customized services in order to successfully replace the role of traditional agencies.

Research results on the effect of the web on the distribution function in the travel industry also reflect different opinions. Based on a survey conducted on tourists' opinions on the impact of the web on travel agents, Law et al. (2004) suggest that both online and traditional travel agencies will remain equally important in the tourism industry and both channels will supplement each other to serve travellers. Buhalis and Licata (2002) based on the results of a survey conducted on tourism experts and academicians in the UK; suggest that most interviewees (70 percent) predicted that instead of the widely reported disintermediation of the traditional distribution channels, they expected a re-intermediation. As new on-line travel agencies enter the market offering value added products and more customization, many of the traditional "eMediaries" such as GDS and videotext will reinvent themselves to cope with the new realities. While traditional offline

agencies will progressively lose a share of their market, there will always be a need for an aggregator of holiday packages, flights and travel advice. Thus, traditionally, “eMediaries” will need to become familiar with on-line tools to address the emerging market. Anckar (2003) based on a survey of Finnish consumers found that a half of the current and prospective web bookers intend to use direct distribution approaches thereby foster disintermediation, whereas half intend to use the web merely as a communication channel to human travel agents and thus foster re-intermediation. Murphy and Tan (2003) based on a survey on Singaporean travel agencies found that travel agencies do not exploit full potential of the web and that they provide poor e-mail customer service but companies with established websites are in a position to undertake productive marketing activities.

In reality, it is important to recognize that different market segments will use dissimilar distribution channels for selecting and purchasing their tourism products. For example, a study by Buhalis (1998) suggested that older generations as well as people who travel infrequently would probably continue to purchase tourism products from traditional travel agencies. On the other hand, business and frequent travellers may rely on on-line providers to arrange their itineraries and eventually purchase their tickets. Traditional agencies, as well as new intermediaries therefore, would, therefore, need to re-assess the situation and decide which market segment they would like to concentrate on in order to maintain their competitiveness in the long term. . It is worth noting, however, that much has changed since this study was undertaken and now both traditional and new intermediaries need to focus on the added-value they can provide travellers in the new marketplace.

Having provided an overview of the web use in the tourism industry worldwide and the opportunities and challenges created, the next section will deal with the use of the Internet and particularly the web in the tourism industry in Egypt which is the area of application.

## **5.6 The Research Context**

This section deals with the use of the Internet in the tourism sector in Egypt which is the particular case under study in this research. Egypt is an interesting context as it is a major tourism destination in the Middle East with a unique and largely diverse tourism portfolio. Egypt however is a developing country and Internet diffusion in it has been fairly recent and is quite limited. Gaining knowledge of the drivers and barriers to Internet adoption by Egyptian travel agents could provide valuable information to the tourism industry. Properly marketing tourism services over the Internet would help Egypt increase its tourism inflow and raise the competitiveness of the tourism sector which is a largely important sector to its economy.

This section starts with an explanation of the importance of the tourism sector to the Egyptian economy as well as the problems and challenges faced by this sector. It then discusses the main tourism institutions in Egypt and the different roles of these institutions indicating the number of tourism organizations currently operating in Egypt. An overview of the performance of the tourism sector is then provided. Following that is a discussion of the introduction of the Internet in Egypt in a general sense and the official number of Internet users. Use of the web in the tourism industry in Egypt is then discussed and the number of companies that have online presence is illustrated.

### **5.6.1 Tourism Sector in Egypt**

The tourism sector in Egypt is considered its largest foreign exchange earner as well as its key engine for growth. Through hotels and restaurants the tourism industry directly contributed about L.E.16 billion in 2006/2007, or 3.5% of GDP (Central bank of Egypt, 2007). The tourism sector remains among Egypt's vital economic sectors. It is one of the major foreign exchange earners for the country, recording US\$8 billion in 2006/2007; an 11% increase over the previous year. Based on the 2007 World Travel and Tourism Council Economic Research, in terms of real growth of demand, the tourism sector in Egypt ranked 25<sup>th</sup> globally, with an estimated US\$ 21.4 billion contribution to economic activity both directly and indirectly. This figure includes all expenditure categories for

tourists such as transportation, recreational, services, retail and others, not only hotel and restaurant expenditure.

Concerning its impact on employment, the tourism sector employs 13.7% of the Egyptian workforce, or one in every 7.3 jobs. Direct employment alone was estimated to account for 2.8 million jobs in 2007(WTTC, 2007). Being a major contributor to the country's foreign exchange earnings as well as to employment, the tourism sector in Egypt is considered one of the pillars of the national economy and thus deserves more attention in terms of how to further develop its potential to attract more tourism activity to the area.

The development of the tourism sector in Egypt is affected by various factors including political stability, external competition and internal factors.

### **Political stability**

Tourism is very sensitive to political instability, whether within the country boundary or within the region to which the country belongs. Located in the politically unstable Middle East region, Egypt is negatively affected by any political conflict within the area. Since the outset of the 1990s, the country has been constantly facing erratic events which have caused a dramatic downturn in tourist flows. First, as a result of the Gulf war (1990/91), Egypt faced a drop of around 15% in the number of tourist arrivals and of almost 19% in the number of nights spent. Then in 1993, terrorist acts caused a decrease of about 22 to 30 percent, respectively compared to 1992. Moreover, due to Luxor attack in November 1997, tourism fell by nearly 13%and receipts by 31% in 1998 compared to 1997. Finally, effects of the Palestinian "Intifada" and the September 11<sup>th</sup> attacks on the United States in 2001 caused a decrease of nearly 16% in the number of visitors and 9% in tourist nights in Egypt. During the fourth quarter of 2001, in particular, the number of visitors and nights dropped substantially by 41 and 35 percent respectively when compared to the same period in 2000. Over the period 2000-2003 international tourist arrivals in Egypt grew by 10% which was ten times more than the world average growth rate over the same period. The first signs of recovery were in 2003 and the higher positive growth rates realized in 2003 and 2004 reflect in part the positive impact of international marketing

campaigns, following the impact of the SARS outbreak in Asia and the depreciation of the US dollar against the euro (Ministry of Tourism, 2004; Sakr and Massoud, 2003),

The Egyptian tourism authorities have been exerting a lot of effort to promote Egypt as a safe destination especially after the inordinate damage caused by recent local incidents including the plane crash in Sharm-el-Sheikh at the beginning of 2003, and the terrorist bombings in Taba and Nuweiba in October 2004. The government has been working hard to prioritize the sector with relatively high government spending on Travel and tourism (US \$ 1.05 billion) and by promoting the country's presence worldwide (WTTC, 2007).

### **External competition**

Egypt offers unique pharaonic sites to culture-oriented tourists, most notably Giza and the Pyramids, as well as Islamic/Coptic and other antiquities. Moreover, the country is also characterized by its spectacular diving spots and beaches spread throughout the red sea. However, Egypt falls in direct competition with its Mediterranean neighbours for sun and sea tourism which represents a major share of its tourists. Thus countries such as Turkey, Greece, Cyprus, Tunis, Morocco, Israel, and Jordan are considered competitors to Egyptian sea side resorts (AmCham, 2002).

### **Internal Factors**

Despite the extensive efforts exerted by the major tourism institutions in Egypt to develop the tourism industry, there are some institutional obstacles within these and other authorities that hinder tourism development. These obstacles include administrative, financial and taxation obstacles (EFTC, 1999-2000). Administrative obstacles include the bureaucratic and long regulations and procedures that tourism investors face in order to issue a license for a tourism establishment or register the land designated for tourism investment. Financial obstacles deal with the limited bank support given to tourism projects due to the high risk nature of such projects. Taxation obstacles deal with the high taxes imposed on tourism sector which constitute 21% of the cost a tourist trip to Egypt and 41% of parties and weddings. This makes Egypt rank internationally as number 9 in terms of taxes imposed on tourism activities (Amcham, 2002).

The Ministry of Tourism and its affiliated entities have launched a national development plan that targets attracting 1.6 million tourists by 2014, increase market share in core European markets, and open up of new markets. To pursue this plan there are currently several development programs in a number of areas, including: marketing, ICT infrastructure, transportation infrastructure and human resources (AmCham, 2008).

Having broadly discussed the importance of the tourism sector to the Egyptian economy as well as the problems and challenges faced by this sector, the following will provide a more detailed view of the existing tourism institutions in Egypt which the survey will cover.

### **5.6.2 Tourism Institutions in Egypt**

This section will first provide an overview of the existing tourism authorities in Egypt as well as their different roles. It will then move to explain the existing tourism organizations in Egypt and their classification.

Under the Ministry of Tourism there are three different organizations responsible for the development of the tourism sector in Egypt that are; the tourism development authority (TDA), the Egyptian Tourist Authority (ETA) and the Conference centres authority (CCA). In addition to these three governmental institutions another authoritative but non-governmental institution, the Egyptian Tourism Federation (EFTC), also plays an important role in the development of tourism sector in Egypt. The following is an explanation of the different roles played by these institutions.

#### **The Tourism Development Authority (TDA)**

To help accomplish the country's tourism goal of tourism development, the TDA was established under the authority of the ministry of tourism with the following objectives:

- To establish a national strategy for tourism development
- To decrease the public sector role
- To promote tourism investment opportunities with a greater private sector role
- To increase coordination between authorities involved in the tourism industry

- To take a leading role in promoting Egypt's tourism potential
- To promote sound policies for environmental planning to preserve the natural assets).

([www.tourinvest.com.eg/tourism5.htm](http://www.tourinvest.com.eg/tourism5.htm))

To achieve these objectives the TDA carries out the following activities:

- Land allocation for tourism development projects within the designated areas for tourism development
- Preparation, assessment, evaluation, and authorization of the programs, studies, and projects necessary for the designated areas for tourism development
- Prioritization of the execution of planned tourism projects.
- Supervision of the tourism development plan within the designated desert areas
- Execution of infrastructure projects within the designated desert areas for tourism development projects (TDA, 2004).

Thus the main aim of TDA is the development of the tourism sector at the local level through new projects and investment opportunities.

### **The Egyptian Tourist Authority (ETA)**

The main objective of ETA is to promote Egypt's tourism internationally. This occurs through the existence of 17 tour operators in different countries in Europe and the United States. Each of these tour operator offices develops its own marketing/ promotional campaigns to suit the nature of the consumer in its market (Gammal, 2004).

In addition to the tour operators in international markets, several promotional tools are used by ETA to increase the demand on tourism in Egypt. These include (AmCham, 2002):

- Participating in international tourism exhibitions and conferences
- Organizing road shows to various international markets
- Producing annual agenda of tourism-related activities in Egypt and distributing it internationally
- Organizing promotional campaigns in various international media

- Promoting Egypt as a conference destination
- Producing the “Egyptian tourist magazine”
- Developing a web site on the Internet ([www.touregypt.net](http://www.touregypt.net))

According to the general manager of IT, the ETA has started to take more serious steps to promote Egypt worldwide via information technology (Gammal, 2004). The ETA’s website mentioned above is updated frequently to include more comprehensive information about all tourism attractions in Egypt as well as detailed information on all hotels, and travel agencies available. Tourists are allowed to make online reservations in most of the 5 and 4 stars hotels but online payment is still not possible at the time being. Online payment is currently being discussed at the people’s council to determine all necessary security procedures necessary to execute transactions on the Internet. The updated website new address is: [www.egypttreasures.gov.eg](http://www.egypttreasures.gov.eg). In addition CDs on Egypt’s history and tourism attractions are distributed for free in worldwide conferences and exhibitions.

It is worth noting that while TDA supervises the development process of the tourism sector at the local level through new projects and investments; ETA is concerned with the international development of the tourism industry in Egypt by properly marketing the destination and increasing the tourism inflow.

### **Conference Centre Authority (CCA)**

Recognizing the importance of conference tourism in terms of financial and promotional returns, a separate entity under the ministry of tourism was established. The CCA is responsible for increasing the number of domestic and international conferences help in Egypt by providing the infrastructure and facilities required for such events (AmCham, 2002).

### **Egyptian Tourism Federation (EFTC)**

Since its foundation in 1968, the Egyptian tourism federation’s main goal has been to provide the suitable climate for the sustainable growth of the Egyptian tourism industry

and the enhancement of its workforce to reach international levels. Formed by the alliance of four associations namely; the Egyptian Hotel Association (EHA), the chamber of tourist establishments (CTE), the Egyptian travel agents association (ETAA) and the chamber of tourist commodities (CTC), the EFTC is responsible to coordinate the work among these business institutions (EFTC,2002).

The main activities of the EFTC are:

- Enhance the profile of the Egyptian tourism industry through public relations and communications
- Support workforce development activities through providing work opportunities in the tourism sector
- Enhance the quality and standard of tourism products and services through quality control programs and vocational training to tourism workforce.
- Achieve sustainable tourism development through environmental protection and natural resources preservation
- Represent the Egyptian tourism industry in international tourism events through active membership and participation.

It is worth noting that compared to TDA and ETA, EFTC is particularly concerned with the quality of the tourism services provided including the professionalism level of the workforce. Additionally, it focuses on sustaining the growth of the industry in general.

Having discussed the main tourism authoritative institutions in Egypt, the following is a discussion of the tourism organizations operating under the supervision of these institutions and their classification.

Tourism organizations in Egypt can be categorized as mostly private (more than 95%) with less than 5% public (Allam, 2004). The tourism organizations in Egypt can be categorized under two main categories that are travel agents and hotels.

Travel agents in Egypt are classified into three groups: A, B and C. A group travel agents carry out all travel and tourism activities. B group travel agents are responsible for ticketing only while C group travel agents are responsible for transportation activities

only (Agencies directory, 2005-2006). Thus B group travel agents are offices that only carry out airline ticketing. C group travel agents would include all car and bus rental offices. The following table includes the number of travel agents under each group.

**Table (5.1): Number of travel agencies in Egypt**

Classification group	No. of travel agencies
A	917
B	50
C	150

Source: Agencies directory (2005-2006)

Travel agents that have web sites and thus use the Internet at any level are mostly in the A category with a few number in the C category. Surprisingly no travel agents in the B category make use of the Internet (Agencies directory, 2005-2006).

The total number of hotels in Egypt reached 1309 (including floating hotels) in 2006 with a total capacity of 177,613 rooms. Projects under construction are planned to add a further 585 hotels, adding a further of 131,582 rooms. These projects are mainly concentrated in Sinai and the red sea where demand has grown lately. The following table shows the number of hotels by rating.

**Table (5.2): Number of hotels by rating**

Classification group	Total hotels	Percent%
5 stars hotels	314	24
4 stars hotels	222	17
3 stars hotels	236	18
2 stars hotels	183	14
1 star hotels	118	9
Unclassified	236	18

Source: Egyptian Tourism Federation, Information Center, November 2007.

About 24% of Egypt's hotels are of the five-star category and are mainly concentrated in South Sinai, Greater Cairo and the Red Sea area. South Sinai has the greatest number of five-star hotels in the country, with 51 hotels and a total capacity of 22,520 rooms. Greater Cairo follows with 29 five star hotels and a total capacity of 13, 615 rooms.

There are many international chains in Egypt including Hilton, Intercontinental, Movenpick and Starwood.

The hotels that have Internet presence in the form of an email or web site are those in the 5 stars and 4 stars category which are mainly international chains with around 20% of their reservations occurring online.

### 5.6.3 Current Performance of Tourism Sector in Egypt: An Overview

This section will provide a brief overview of the current performance of the Egyptian tourism sector in terms of tourist arrivals, nights and receipts in figures.

The CAPMAS statistics on tourism flow to Egypt revealed a number of positive indicators for 2007 when compared to 2006. The number of arrivals and tourists nights rose by 8.9% and 9.1% respectively and revenues also increased by 11.1%. The average number of nights spent per tourist was 9.8 nights in 2006/2007 (AmCham, 2008). Most of the foreign tourists visiting Egypt come for leisure and entertainment (41.8%). These visitors target the red sea and Sinai. A smaller percentage (14%) comes for cultural and historical tourism thus targeting Cairo and Alexandria (Salem, 2003).

The following table illustrates the change in the number of tourist visitors and tourist nights during the last two years 2006-2007.

**Table (5.3): Inbound tourism by main generating groups (Visitors and Nights) 2006-2007**

Region	Visitors (000)			Nights (000)		
	2007	2006	%	2007	2006	%
Europe	3100	2829	9.6	28654	26730	7.2
Middle East	1063	1019	4.3	15036	13783	9.1
Africa	159	138	15.2	2253	1817	24.0
Americas	167	151	10.6	2427	2149	12.9
Asia and the pacific	245	208	17.8	2048	1753	16.8
Others	2	2	0	38	33	15.2
Total	4736	4347	8.9	50456	46265	9.1

Source: Central bank of Egypt, 2007

Corresponding to the growth in tourism arrivals and nights, tourism receipts have been rising with a 29% compound annual growth rate from 2001 to 2007. Tourism receipts reached US\$ 8 billion in 2006-2007, compared to US\$ 7.2 billion in 2005/2006 making tourism the biggest source of foreign currency for the country in the services sector (AmCham, 2008).

The following table shows tourism receipts in million US \$ during the period from 2001-2007

**Table (5.4): Tourism Receipts (FY2001/2002-2006/2007)**

Year	Tourism receipts (billion)	Growth rate (%)
2001/2002	3.4	Base year
2002/2003	3.8	11.8
2003/2004	5.5	44.7
2004/2005	6.4	16.4
2005/2006	7.2	12.5
2006/2007	8	11.1

Source: Ministry of Finance, Financial Monthly, October 2007.

It is obvious from the above information that although Egypt has been facing a lot of fluctuations due to the political unrest in the region, the tourism sector has always been able to reshape and attract travellers back. A big part of that goes to the adverting and promotional campaigns conducted by tourism companies through their operators in Europe and United states. Mr. Zayyat, Director of Emco travel, says “when we do good advertising and promotional campaigns, we bring them in.” (Saad, 2003). Thus the role of marketing tourism domestically and internationally should not be underestimated as it can result in boosting the tourism in the area.

There are high expectations that using the Internet for marketing tourism destinations in Egypt could help tourism companies reach new heights as they can now directly reach the international customer and can illustrate all tourism attractions electronically. Using the Internet is not without challenges that have to be understood and dealt with.

The following section will thus focus on the Internet commercialization in Egypt and opportunities and well as challenges for using the Internet in the tourism industry.

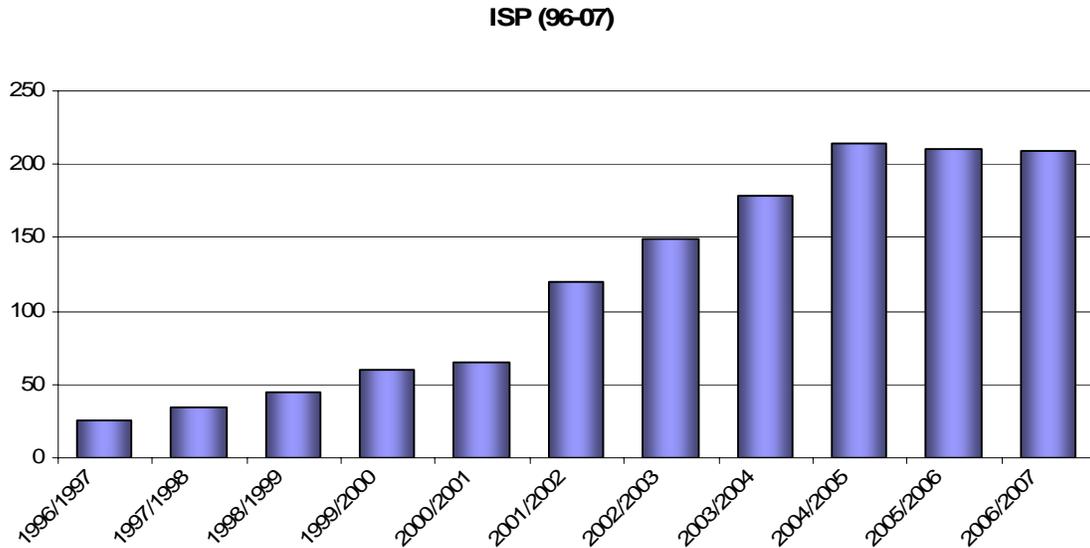
#### **5.6.4 The Internet in Egypt**

The Internet has been introduced to Egypt by The Information and Decision Support Cabinet (IDSC) and the Supreme Council of Universities in 1993. IDSC controlled the government and the commercial domain, and the supreme council managed the educational domain. IDSC provided the Internet free of charge for three years to increase awareness. In 1997, IDSC started to privatize the service through Internet Service providers (ISP). In 2000, the number of Internet Service Providers operating in Egypt was more than 66, covering 24 governorates. In 2007 the number of service provider reached 209. Figure (5.1) shows the evolution of the number of ISPs from 1996 to 2007.

IDSC subsidized the service outside greater Cairo and Alexandria by providing the service to Service Providers at a reduced rate ranging from 50% to 90% to the most deprived governorates.

The growth of the Internet users from 1995-1999 was reasonable, but in the 2000, major steps have been taken to achieve a break through. Overall there were about 650,000 Internet users in Egypt by year 2000. Despite this number being relatively low compared to other countries, there is a very clear increase in this number compared to pervious years. In 2007 the number of internet users reached 6.9 million users.

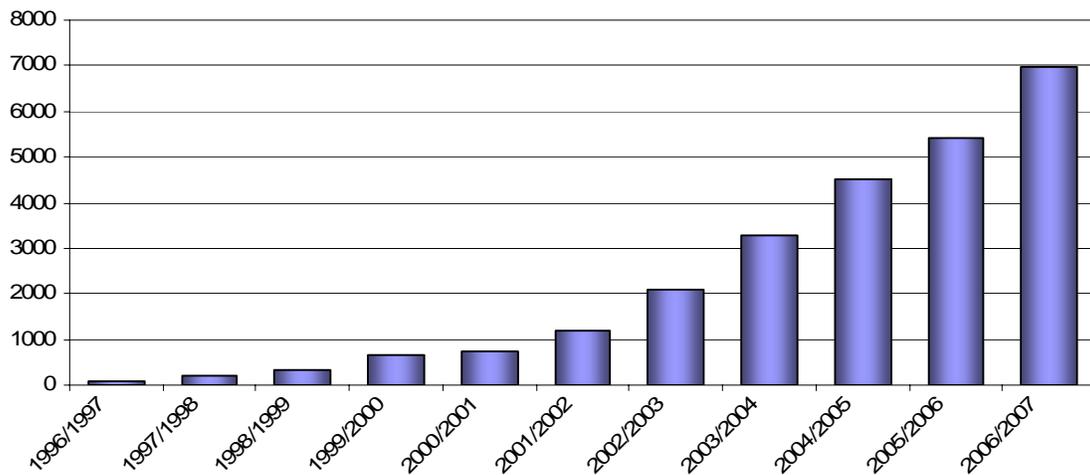
**Figure (5.1)**  
**Egypt: Internet Service Providers**



Source: IDSC, 2007

Figure (2) indicates that there was great improvement in the number of Internet users from 1996-2007. The number grew from 75 thousand users in 1996 to around 650 thousand users in 2000 and to around 6.9 million users in 2007. This growth rate is quite high, which gives us an indication of a much more advanced future.

**Figure (5.2)**  
**Number of Internet Users in Thousands**  
**Internet Subscriber (96-07)**



Source: IDSC, 2007

In 2002 the Ministry of communications and Information technology (MCIT) launched the free Internet service that allows users to access the Internet free of charge at the price of the local phone call. The MCIT put the number of Egyptians who currently enjoy access to the World Wide Web at 7 million. However, ISP officials admit the difficulty of compiling precise statistics about the exact numbers of Internet users, and unofficial figures put current users around 8.29 million users

Although there has been a considerable increase in the number of Internet users since the commercialization of the Internet in 1993, the number of users is considered to be low when compared to other countries. This may be partly because of the low PC ownership rate which is related to the high cost of purchasing PC especially after the devaluation of the currency (AmCham Egypt, 2003). Other reasons may include the language barrier, the high level of illiteracy and low telephone density in rural areas compared to urban areas (IDSC, 2007).

### **5.6.5 The Internet and the Tourism Sector in Egypt**

The application of the Internet in the tourism sector in Egypt can be considered at an introductory stage. Travel agents that developed a web site mainly developed it as another tool for communication besides brochures and leaflets and thus most of the sites are formed for the sake of information provision. Few sites are interactive in nature and most of the sites rely on email facility for inquiries and communication with customers. The following table shows the number of travel agents that own a web site under each category.

**Table (5.5): Travel agents who own websites**

Category	No. of travel agents who own a website
A	163
B	0
C	6

Source: Agencies directory (2005-2006)

It is also obvious from the above table that the number of travel agents that own a web site in comparison to the total number of travel agencies in each category is quite low.

This may be due to the low Internet penetration in Egypt or the lack of awareness of companies of the opportunities they can capture out of Internet application. It can also be due to the language barrier due to the fact that the majority of websites are in English or because companies are satisfied by their current performance and do not find a reason to invest in the Internet. This may also be due to the nature of target market of these travel agents or in other words whether they focus on inbound or outbound tourism. If travel agents focus on attracting foreign tourists, thus carryout inbound tourism, they have a high incentive to develop websites in order to market their tourism services to an international customer and achieve a wider reach. On the contrary, if the focus is on Egyptian tourists, i.e. outbound tourism, travel agents may rely more on traditional marketing methods to market their services to a local customer. As mentioned in the introductory chapter this research will target Egyptian travel agents, both adopters and non-adopters of the Internet who do inbound tourism. Thus travel agents whose line of business is to bring tourists from abroad are the focus of this research. Travel companies whose line of business is to carry out religious tours only are excluded from the survey. It is also worth noting that the majority of travel agents in Egypt are SMEs.

According to El Beltagui, Egypt's former minister of tourism, Egypt must make full use of the web to meet the challenges facing the domestic tourism sector (Abdel Razik, 2001). These challenges include growing power of global market forces and global mergers between tour operators and travel agencies, hotel groups and resort companies, airlines, restaurants and entertainment companies, etc. The web also allows the tourism industry in Egypt to benefit from more market reach so while maintaining its traditional markets, new markets and niche markets can as well be targeted (Abdel Razik, 2001).

Mavromatis and Buhalis (2003) assert that Internet application in Egypt would help Egyptian tourism to enhance its competitiveness, improve efficiency of its local suppliers, provide tools for development and allow delivery of differentiated tourism products. According to a survey that they carried out on the 76 tourism companies in Egypt including travel agents, hotels and transportation companies they found that the majority of companies surveyed do not have any online presence and that the few ones

that have online presence do not have applications of services in place to support the online transactions.

According to them, Egyptian tourism companies considered that global reach 24/7 a day the most significant benefit that the web provides to their companies. Increase in direct sales as well as improvement of efficiency and effectiveness were also considered important benefits. However, personalized interactions, competition catch-up and niche markets targeting were not considered as important by managers. In addition, companies perceived the web mainly as an informational provision tool and less as a means for improving their product offering and increasing their bookings.

As for the barriers to web use by these companies, Mavromatis and Buhalis (2003) found that managers were concerned about privacy of information, threat of increased competition in the industry, credit card fraud, consumers' lack of credit card ownership as Egypt is mainly a cash society, and the fact that companies may lose the personal contact with their customers and suppliers that maybe alienated via the electronic technology. They also had a main concern about the suitability of the web for trade, particularly for the domestic market.

As for the main incentives to web use by Egyptian tourism companies, they found that advertising for their products, receiving customers' comments and providing information were the main reasons why companies developed websites. Online sales, building customer base and communication with suppliers were not among the main priorities for web use by companies indicating the fact that Egyptian tourism companies regard the web as a tool for communication and information provision.

According to Mavromatis and Buhalis (2003), the factors that affected most companies' decision to develop or not develop a website were following up with competition, employees' familiarity with the technology, size of the company, cost involved, and finally customer's familiarity with technology. Moreover, the decision to develop a web site and actually use it in business was mainly driven by impulse and personal factors

rather than rational business planning. Thus the majority of tourism companies are late adopters of web technology with very few who are keen to innovate and explore the full potential of the web.

## **5.7 Conclusion**

This chapter has dealt with the research context. It first looked specifically at the Internet and particularly the web, and then it discussed in details Egypt which is the particular area for application in this study. The chapter started with an overview of the web use in the tourism sector globally and discussed its benefits and limitations. The chapter then provided an overview of the tourism sector in Egypt including its importance, problems and challenges. Internet and web use in Egypt and in the tourism sector was then discussed.

The tourism sector in Egypt, being one of its main foreign currency earners, deserves more attention in terms of how it can be managed in more competitive ways in order to attract more tourists and at the same time enhance the efficiency and effectiveness of operations. The web provides tourism with many opportunities and at the same time challenges. If opportunities are captured and challenges are handled the web can take tourism to new heights. It is thus important to study the factors that would lead tourism companies to make more use of the internet in order to achieve competitiveness in this new marketplace.

Having provided an overview of the context of the study, the following chapter will present the methodology implemented in this research.

# **Chapter Six**

## **Research Methodology**

### **6.1 Introduction**

The aim of this chapter is to outline the general research methodology adopted in this research. This research is a mixed methods research that combines both qualitative and quantitative research methods. The chapter starts by briefly discussing the philosophy behind the methodology as well as the methods employed for data collection. In doing so, the qualitative and quantitative methods used in data collection will be discussed while highlighting the role of each. The chapter then provides a detailed explanation of questionnaire design, sampling and measurement procedures. Section 6.2 deals with the research philosophy and the reasons behind the methodology adopted in this research. Section 6.3 explains the research design in terms of the choice of the data collection method, the survey instrument development and the sampling issues. Section 6.4 explains the methods used to check the reliability and validity of the measurement scales.

### **6.2 Research Philosophy**

This section will focus on discussing the different philosophies adopted in the field of marketing research in order to justify the methodology applied in this research. The following is a brief explanation of the characteristics of the two basic philosophical approaches used in research namely; the positivist and phenomenological paradigms (Easterby-Smith et al. 1991; Anderson, 1983; Morgan and Smircich, 1980).

The ontology of the positivist paradigm is that reality is external and objective and that knowledge is only of significance if it is based on observation of this external reality. The epistemology of this paradigm is that the researcher should be independent of what is being observed in order to be objective in analyzing it. The methodology of research adopted by the positivist paradigm is based on deductive logic that is typically focused on testing hypothesis in a process of theory verification or testing. Large sample surveys are

conducted and reliability of information is focused on rather than validity (Easterby-Smith et al., 1991).

On the other hand, the ontology of the phenomenological paradigm is that there is no single reality since the world is socially constructed and subjective. The epistemology of this paradigm is that the researcher is part of what is being observed actively participating in the life of the subject of observation and gaining insights by means of introspection. The methodology of research adopted by the phenomenological paradigm is based on an inductive logic typically through discussions in interviews and/or focus groups in a process of theory construction or generation. Small samples are targeted and validity of information through in-depth verification of data is focused on (Easterby-Smith et al., 1991).

In comparing these two philosophical paradigms it is important to evaluate them based on their relation to marketing research methods in order to justify the selection of the methodology of this research. The positivist view relies dominantly on quantitative methods but at the same time positivists can also use qualitative data in their research, while the phenomenological view uses qualitative data such as observations, case studies and interviews as tools in conducting research.

Each paradigm has its own strengths and weaknesses. In case of the quantitative methods, the main strengths are: they can provide a wide coverage of the range of situations, they can be fast and economical, and especially when statistics are aggregated from large samples, they maybe of considerable relevance to policy decisions. The main weaknesses are: these methods tend to be inflexible and artificial, they are not effective in understanding the significance that people attach to actions and they are not helpful in generating theories. As for qualitative methods, the main strengths are: the ability to look at change processes over time, to understand people's meanings, to contribute to the evolution to new theories and provide a way to gather data which is seen as more natural than artificial. The weaknesses are: they take a great deal of time and resources and the analysis and interpretation of data may be very difficult (Easterby-Smith et al., 1991).

It is important to note that marketing science is dominated by the positivist paradigm as it is far more involved with hypothesis testing and theory verification rather than theory generation. However, there is a trend toward the use of a triangulation of procedures by using an appropriate mix of both quantitative and qualitative methods so that the weaknesses of one set of methodologies are compensated for by the strengths of the other and vice versa (Easterby-Smith et al. 1991; Deshpande, 1983).

Following this approach, this study uses mixed methods research or triangulation, but is dominated by the quantitative methods. The objective of using this approach is to realise the benefits and minimize the weaknesses of both qualitative and quantitative methods in testing the conceptual model proposed in chapter four. It is important to mention, however, that the main reliance would be on quantitative techniques to analyze the independent variables that affect web adoption by firms. Therefore, the overall approach is towards the positivist end of the spectrum but using different means to collect data. The qualitative work is used to provide depth to the analysis and to compare with the proposed model in an attempt to provide a more complete picture of the investigated phenomenon. The quantitative work is used to test the hypotheses and indicate generalizability of the results.

Accordingly, the conceptual framework developed in chapter four will be tested using both quantitative and qualitative data.

This dual adoption of both qualitative and quantitative methods in research is a desirable research exercise as recommended by Deshpande (1983) and Tranfield and Starkey (1998) since it enriches theory with practical insights thus improves the relevance and application of findings.

### **6.3 Research Design**

This section will discuss the research design and the different methods used by the researcher to collect data.

### **6.3.1 Triangulation-A Combination Approach**

Triangulation refers to the use of more than one research approach to study a particular question (Lockyer, 2006). Methodological triangulation is based on the assumption that no research methodology is free from errors and therefore suggests “that the sociologist should examine his problem from as many different methodological perspectives as possible” (Denzin, 1977, p.297). Benefits of applying mixed methods approach are discussed by Onwuegbuzie and Leech (2005) who indicate that utilizing mixed methodologies within the same study help the researcher delve into a dataset to understand its meaning and to use one method to verify findings from the other method. It also helps provide a more complete picture of the investigated phenomenon by combining different research strategies (Erzberger and Prein, 1997). Other benefits of using mixed methods include increasing the accuracy of research findings and the level of confidence in them (Kelle, 2001), generating new knowledge through a synthesis of knowledge from different approaches (Foss and Ellefsen, 2002) and reflecting the complexity of a multi-faceted phenomenon (Deren et al., 2003).

This research as mentioned above relies on the mixed methods approach or strategies triangulation, by using both qualitative and quantitative methods in order to address the research objectives. One argument against mixing qualitative and quantitative research is that it has become a fad and that it is only acceptable if it is relevant to the research objectives in which one is interested (Bryman, 2006).

Triangulation is required in this research for a number of reasons. First, the research problem is a multidimensional one dealing with three aspects namely; web marketing, adoption and tourism. Thus triangulation is important here to both gain in-depth understanding of the phenomenon through qualitative work and to allow generalization and measurement through the quantitative work. Second, triangulation will allow bringing together a more comprehensive view of the phenomenon of web adoption for marketing purposes when both qualitative and quantitative methods are employed. Third, triangulation will allow clarification of the results of one method with the results of the other through comparing and contrasting the qualitative and quantitative results to outline areas of similarities and differences as will be shown in chapter 10. Fourth, triangulation

will help draw on the strengths and offset the weaknesses associated with qualitative and quantitative methods by combining them together (Johnson and Onwuegbuzie, 2004).

This research therefore applies methodological triangulation by using both qualitative and quantitative approaches to collect data. The qualitative and quantitative research findings are integrated together to meet the third research objective in this research which deals with empirically testing the model. Chapter 10 will illustrate in details how triangulation has been conducted through comparing and contrasting the results of the qualitative and quantitative methods for each factor.

The two methods used to collect data in this research are quantitative research employing survey methods and qualitative research in the form of in-depth interviews with travel agents. The quantitative research will be used to test the hypotheses of the study developed earlier, whereas the qualitative research employing semi-structured interviews with travel agents in Egypt was used to provide a different perspective on the hypotheses thus still testing but less formally.

The following discusses the research design in terms of methods used to analyze the qualitative data, questionnaire development as well as sampling issues.

### **6.3.2 Qualitative Research: Methods of Analysis**

There are three common approaches to qualitative data analysis namely; content analysis, grounded theory and thematic analysis. This research will use thematic analysis to analyze the data generated from the in-depth interviews. This section will explain the three approaches to data analysis and explain why thematic analysis will be used in this research.

Grounded theory is a methodology of theory development that focuses on inductive theory building from qualitative data through a process of rigorous and structured analysis. It thus allows social theory to be generated systematically from the data (Smith et al., 1991). It has emerged out of the work of sociologists Glaser and Strauss (1967). It is worth noting that what distinguishes grounded theory from other approaches of data

analysis is the emphasis on theory as the final output of research (Strauss and Corbin, 1998). At the heart of grounded theory is the idea of constant comparative method. In this method, concepts and categories emerging from one stage of the data analysis are compared with concepts emerging from the next. The researcher looks for relationships between these concepts and categories by constantly comparing them to form the base of the emerging theory (Lacey and Luff, 2007). This method was not chosen as the model developed in this research is based purely on existing research. A thorough review of relevant theory in the field of innovation adoption showed that there is adequate theory in this field to develop the model and thus no exploratory work was undertaken for the purpose of theory development. Thus the purpose of the qualitative work here is not theory development as in the grounded approach, but theory verification.

Content analysis is commonly used when frequencies are required from qualitative or unstructured data to be added to a larger computer model. This method counts the number of times a particular word or concept occurs in an interview. The qualitative data can then be categorized quantitatively and is subject to statistical analysis. The process of data analysis using this approach consists of five stages. In the beginning (data sourcing and transcription) qualitative material is collected and transcribed. The next stage is to choose the unit of analysis and divide the material into coding units. Categorization then follows which consists of structuring and condensing data by grouping the qualitative material into theoretically insightful ways (Mayring, 2002). This stage is followed by coding which involves assigning codes to units (Srnrka and Koeszegi, 2007). Content analysis has been criticized for not being truly qualitative and has long been realised as an important way to acquire historical quantitative data (Lacey and Luff, 2007; Ginsberg, 1988). It is also time consuming and usually used in researches where the main research done is qualitative unlike the research here.

Thematic analysis has been developed in the context of applied policy research and is particularly well suited to qualitative research where there are pre-set questions that need to be addressed as is the case here, and the time scale is short. A lot of qualitative analysis falls under the general heading of thematic analysis (Lacey and Luff, 2007). Thematic

analysis seemed appropriate here as the question is specific and suggests a pre-designed sample (travel agents) as well as some a priori concepts (internet adoption factors) that need to be explicitly addressed. Additionally, the primary concern of the research here is the description and interpretation of web adoption in a specific setting which is Egypt. For these reasons, thematic analysis seemed appropriate. The qualitative chapter 8 will explain how thematic analysis was conducted in this research.

### 6.3.3 Survey instrument: Questionnaire Development

The actual collection of empirical data is one of the most critical stages in the production of any piece of academic research. Two decisions must be made regarding data collection, the first being which data is relevant to the research purpose and from which sources to obtain this data and the second concerning the most suitable tool to collect this data (Oppenheim, 1992).

#### Choice of data collection method

Before adopting any method of data collection, the objectives of the research need to be clearly defined (Easterby-Smith et al. 1991). The following table illustrates the research objectives and how these are going to be answered in methodological terms.

**Table (6.1): Research Objectives**

<b>Research objective</b>	<b>Methodology</b>
1. Describe the evolution of web adoption among travel agents in Egypt in order to understand the prevailing pattern of activity.	Web survey
2. Develop a theoretical framework for web adoption in the business to business context by integrating Roger's model of Innovation adoption with the Resource-based View of the firm in order to identify key antecedents of web adoption.	Literature review and integration of existing models.
3. Empirically test the determinants of web adoption by travel agents in Egypt, i.e. empirically test the research framework in order to suggest the generalization of the results.	Qualitative and quantitative methods

Based on these objectives, the researcher decided to use a questionnaire to collect data because gathering data on attitudes, preferences or opinions can only be accomplished through questioning respondents either through personal interviews, telephone or mail (Cooper and Schindler, 2001). Additionally, questionnaires are the principle means used for collecting data by means of a survey of a defined population or sample in which a researcher is interested (Baker, 2003). Several previous studies on web adoption by small firms also used a questionnaire to collect data (Premkumar and Roberts, 1999; Salaviou et al., 2004).

The use of a structured mail questionnaire was thought to be most appropriate for collecting data for this research due to a number of reasons including; the ability to reach a relatively large number of target population, its allows respondents time to think about questions, there is no potential for interviewer bias and it is a low cost and easily implemented method. The use of mail questionnaires, however, has a number of drawbacks that are: low flexibility due to the standardized nature of the questions, no interviewer intervention for probing or explanation of difficult questions, low response rate and a time consuming process (Malhotra, 1996; Diamantopoulos et al., 1991; Cooper and Schindler, 2001). Additionally, it is thought that there is a link between the perceived impersonality of the mail questionnaire and the increasing level of respondent fatigue and lack of interest in this form of survey instrument (Kevin et al., 2004). Some of these problems of mail questionnaires could be overcome by the process of data collection administration by relying on a drop and collect survey. This method involves relying on the researcher and/or properly trained field assistants in personally delivering and collecting the survey instrument either directly to the target respondent or through a gatekeeper such as the secretary. What distinguishes this drop and collect survey from mail questionnaire is the nature of the communication medium which involves face-to-face communications compared to written communication as is the case in the mail questionnaire (Kevin et al., 2004). The drop and collect survey method of mail administration was found to significantly improve the response rate among organizational respondents as compared to mail questionnaires (Baruch, 1999). Additionally it is less time consuming though a more costly method per respondent when compared to mail

questionnaires. The process of handling the drop and collect survey will be later explained in this chapter.

In designing the questionnaire, the researcher followed the questionnaire design process developed by Malhotra (1996, p.321). Here is a discussion of some of these steps.

### **Question Content**

The relevant questions that needed to be asked in the questionnaire were developed based on the variables contained in the research hypotheses. Questions were selected mainly from previous studies that attempted to measure the determinants of web adoption (Premkumar & Roberts, 1999; Moore & Benbasat, 1991). The researcher, however, constructed original items when no relevant measurement existed in previous research. Generally, multiple item scales were used for most constructs in order to improve the reliability of the measurement (Hair et al., 1998).

### **Response format**

The researcher used structured questions (close ended questions). Structured close ended questions were used since they are best suited to survey and quantitative research (Baker, 2003). Open-ended ones were generally avoided except for very few questions that asked respondents to provide information regarding when was the company or web established, percent of sales through the web or through other channels, etc. Close-ended questions in the form of multiple choice questions, dichotomous questions and scales were used (Malhotra, 1996, p.328/9). Ratio scales were used for facts and secondary data, interval scales for attitudes and perceptions toward web adoption and nominal scales for classification questions such as identifying adopters from non-adopters as well as classification information about the travel firms (Diamantopoulos, and Schlegelmilch, 1997 p.24-26). A seven-point likert scale ranging from strongly disagree to strongly agree was used to explore the effect of each factor on web adoption. Seven-point was thought to provide wider latitude for respondents to express their opinions. (Diamantopoulos, and Schlegelmilch, 1997, p.29).

### **Question Wording**

Simple and clear questions were used. Leading, double-barrelled and implicit assumptions were avoided (Malhotra 1996, p.332, Baker 2003). The questionnaire was translated in Arabic by the researcher who tried to ensure translation equivalence based on back translation method as explained by Brislin (1976). The translation was also reviewed by an academic professor in the Marketing field to discover any translation mistakes.

### **Question Sequence and questionnaire form**

The questionnaire started with simple classification questions regarding the web adoption status of respondents. The basic information directly related to the research problem was then dealt with and finally classification information on companies was asked at the end of the questionnaire. The questionnaire was divided into five parts and all questions were numbered. A small introduction was used to give respondents a brief on what the research is about and at the end of the questionnaire the researcher thanked respondents for cooperation. Additionally, a formal and stamped cover letter from the Egyptian Travel Agents Association was used (ETAA) that indicated the importance of this research and encouraged respondents to participate. The researcher obtained this letter before the start of the data collection since the (ETAA) is an authoritative body that has high leverage on travel agents and thus this letter had a big influence on improving response rate among the target population.

### **Questionnaire Pretesting**

The researcher conducted two waves of pretests on the questionnaire over a small number of respondents who are representative of the sample (adopter/non-adopter travel agents) to get feedback on aspects such as length of questionnaire, questions clarity, and to discover faults (Webb, 2000). Thus, the purpose of the pretests was to get respondents' opinions on the questionnaire, discover problems and do the necessary revisions before conducting the large scale survey. These pretests were conducted by the researcher through personal interviews with these respondents. The first pilot involved 10 companies who were asked to complete the questionnaire and to evaluate it in terms of

clarity, length, level of difficulty, wording and so on. It resulted in some useful feedback on several aspects of the questionnaire. Common comments included the questionnaire being too long, several statements being used to ask about the same thing, clarity of some words, and difficulty of some questions. To deal with the issue of questionnaire length, the researcher had to decrease the number of items measuring some constructs given that the removal of these items did not affect the essential nature of the underlying construct. This is possible for reflective indicators which are essentially interchangeable (Diamantopoulos and Winklhofer, 2001). For example, the constructs that were measured by four item statements such as employees' IT knowledge were decreased to three items by removing the item that asked the same question in a similar way. It was necessary to reduce some constructs to only two scale items because of the need to shorten the questionnaire. While recognizing that this can create problems in terms of reliability this course of action was deemed necessary to secure an acceptable response rate. However, there is an argument that multiple item scales that produce high reliability indices may add very little information over a one or a two item scale. Additionally an increase in the number of scale items will increase reliability of the scale as measured by Cronbach alpha but may lead to inappropriate response behaviour as a result of participant fatigue, boredom, and inattention (Drolet and Morrison, 2001).

To deal with clarity issues, the questions' wording was made simpler and any questions that the researcher found were difficult to understand in the pretest were changed. The question asking "does your company engage in e-commerce?" for example was changed to "does your company sell its travel services over the web?" because many respondents either did not understand what was meant by e-commerce or did not know what exactly does e-commerce as a term encompassed.

Regarding the difficulty of some questions, a noticeable construct was trialability since all 10 companies did not understand how to answer this question. Trialability, as can be seen in appendix A, was initially measured using three items using a seven point likert scale. The questions asked respondents to indicate to what extent they were able to try the web before developing their own web sites. Due to the fact that trying a service is not

possible without actually consuming the service, this construct by its very nature was difficult to understand and measure. Most respondents asked for clarification of these statements and even when given clarification they could not properly relate the concept of trialability to web use. Given these results of the piloting, the researcher adopted a two item (yes/no) scale that asked straightforward questions on whether travel agents have tried to market their travel services through other well known travel sites before developing their own sites. Additionally, they were asked about whether they gradually increased the number of pages of their web sites since they first developed it. These two statements together were thought to give an indication of whether respondents have tried using the web before actually fully adopting it. These questions were easier to understand than the initial ones. It is worth noting however that because those who have tried the web are the ones who have already adopted it; this construct was expected to be particularly relevant to the simple versus sophistication levels of adoption. However it is a difficult concept with regards to complex adoption because it is difficult to *try* sales over the web and it is a very crude measure by its nature. Moreover, as will be seen later, the measurement of trialability was highly problematic and it was, to some degree, excluded from further analysis because of measurement problem.

Based on the outcome of this first pilot, the questionnaire was thoroughly revised and changes were made accordingly (appendix A shows the initial version of the questionnaire as well as the modified one). The second pilot involved 8 companies and resulted in much more positive feedback as well as very few comments that were taken into consideration in the production of the final version of the questionnaire. The following is a detailed explanation of how the dependent and independent variables are measured.

### **Variables Measurement**

The questionnaire is divided into three sections. The first section measures the dependent variable by identifying adopters from non-adopters and also identifying level of adoption. The second section focuses on measuring independent variables as outlined in the model.

The final section collects descriptive information on firms. The following is an explanation of the statements in each section.

**Section A: Dependent variable**

The dependent variable is the adoption versus non-adoption of the web by Egyptian travel agents. At the simplest level, adoption is measured in terms of whether these companies have developed a web site to market their travel services or not. Thus a company will be considered to have adopted the web if it has developed a web site to market its travel services on. This is a dichotomous variable indicating mere adoption versus non-adoption. One statement will be used to measure whether respondents adopted the web for marketing travel services.

Statement	Source
Does your company have a web site?	Adapted from Moore and Benbasat (1991)

Since the aim of the questionnaire is to measure the impact of the three groups of factors, identified in the model, on web adoption, it is important to determine how both groups (adopters and non-adopters) perceive the impact of these factors. Thus whether respondents answered this question with a yes or no, both groups will be asked to provide their opinions on all the variables under study in order to determine if there are significant differences between their opinions.

Level of Web adoption

In order to determine the level of web adoption by these companies to identify whether they only have a web site or also engage in e-commerce, the following questions will be asked?

Statement	Source
Does your company sell its travel services over the web?	Developed by the researcher (binary)
If “Yes” approximately what percentage of your travel business is done via the web?	Developed by the researcher (continuous)

The second question is an open-ended one where respondents are asked to indicate the percent sales through the web.

**Section B: Independent Variables**

The independent variables as outlined in the model fall under three key themes that are innovation attributes, firm resources, and individual factors. The following is an explanation of how each variable under these key themes is measured.

**Innovation Attributes**

1-Relative Advantage

Six statements will be used to measure the perceived relative advantage of the web over traditional ways of doing travel business. Respondents will use a seven-point Likert scale ranging from “strongly agree” to “strongly disagree” to respond to these statements.

The web site:

Statement	Source
Will allow us to better communicate with our international customers	Adapted from Premkumar and Roberts (1999)
Will provide us with increased access to global consumer markets	Adapted from Doherty et al. (2003)
Will allow us to cut costs of traditional marketing methods	Adapted from Premkumar and Roberts (1999)
Will increase the profitability of our travel business	Adapted from Premkumar and Roberts (1999)
The initial cost of developing a web site is high for our company	Adapted from Premkumar and Roberts (1999)
The costs of maintaining a web site and updating information on it are high for our company	Adapted from Premkumar and Roberts (1999)

## 2-Compatibility

Two statements will be used to measure the compatibility of web site use to market for travel services with customers' values and beliefs, past experiences and needs. Respondents will use a seven-point Likert scale ranging from "strongly agree" to "strongly disagree" to respond to these statements.

Statement	Source
Using a web site to market for travel services fits well with the way we like to work	Adapted from Moore and Benbasat (1991)
Using a web site to market for travel services is compatible with all aspects of our work	Adapted from Moore and Benbasat (1991)

## 3-Complexity

One statement will be used to measure respondents' opinions about the difficulty or ease of use of a web site to market for travel services. Respondents will use a seven-point Likert scale ranging from "strongly agree" to "strongly disagree" to respond to this statement.

Statement	Source
Our employees find it difficult to use the web to market travel services	Adapted from Premkumar and Roberts (1999)

## 4-Trialability

Two statements will be used to measure respondents' opinions on the possibility of trying to use a website to market for travel services on a limited basis before deciding whether to fully adopt the innovation or not. A dichotomous choice; yes or no will be used to capture respondents' responses to these questions.

Statement	Source
Did you try to market your travel services through popular travel sites before developing your own website?	Developed by the researcher
Did you start your web site with a few pages and then added more to it afterwards?	Developed by the researcher

### 5-Observability

One statement will be used to measure the level of visibility of website use in marketing for travel services in the travel industry in Egypt. Respondents will use a seven-point Likert scale ranging from “strongly agree” to “strongly disagree” to respond to this statement.

Statement	Source
Other Egyptian travel companies are getting more travel business because of having a web site	Adapted from Moore and Benbasat (1991)

### 6-Perceived risk

Perceived risk includes both the risk of online payment (financial risk) and risk of conflict with tour operators (relationship risk). One statement will be used to measure the financial risk and two statements will be used to measure the relationship risk. Respondents will use a seven-point Likert scale ranging from “strongly agree” to “strongly disagree” to respond to these statements.

#### A-Financial risk

Statement	Source
We have security concerns regarding online payment for travel services	Adapted from Doherty et al. (2003)

#### B-Relationship risk

Statement	Source
We are afraid to lose business with our tour operators if we directly reach customers via the web	Developed by the researcher
Marketing travel services over the web is one way to get out of the control of the tour operator	Developed by the researcher

### **Firm Resources**

#### Size

Size will be measured in terms of number of employees in the company which is a popular measure for this factor. A three item scale; less than 20, 20-50 or more than 50 will be used to capture respondents’ responses to this question.

Statement	Source
Number of employees-categorized	Premkumar and Roberts (1999),

### Employees' IT Knowledge

Three statements will be used to measure respondents' opinions about their employees' IT knowledge and the impact of that on web adoption. Respondents will use a seven-point Likert scale ranging from "strongly agree" to "strongly disagree" to respond to these statements.

Statement	Source
Our company employees are all computer literate	Adapted from Thong (1999)
Our company employees are experienced with information technology	Adapted from Grewal et al. (2001)
Our company has capable technical support staff	Adapted from Grewal et al. (2001)

### Marketing Capabilities

Three statements will be used to measure respondents' ability to apply skills and knowledge related to marketing tourism services on the Web and meeting market-related needs of the business. Respondents will use a seven-point Likert scale ranging from "strongly agree" to "strongly disagree" to respond to these statements.

Statement	Source
We do a good job of developing new travel services over the web	Adapted from Vorhies (1998)
Our promotional activities (e.g. advertising) over the web are effective in gaining market share	Adapted from Vorhies (1998)
We are able to distribute our travel services online as well as offline	Adapted from Vorhies (1998)

### Organizational Learning

Three statements will be used to measure respondents' commitment to learning in response to new ways of doing business as well as challenges created by the Web. Respondents will

use a seven-point Likert scale ranging from “strongly agree” to “strongly disagree” to respond to these statements.

Statement	Source
Managers basically agree that our organization’s ability to learn is the key to our competitive advantage	Sinkula et al. (1997)
The basic values of this organization include learning as key to improvement	Sinkula et al. (1997)
The sense around here is that employee learning is an investment, not an expense	Sinkula et al. (1997)

### Market Orientation

Three statements will be used to measure respondent organizations’ focus on obtaining information about customers and competitors in their target market and disseminating this information within the organization. Respondents will use a seven-point Likert scale ranging from “strongly agree” to “strongly disagree” to respond to these statements.

Statement	Source
We pay close attention to understanding customers’ needs	Adapted from Narver and Slater (1990)
In our organization, achieving customer satisfaction is a main focus	Adapted from Narver and Slater (1990)
In our organization, we share information about competitors	Adapted from Narver and Slater (1990)

### **Individual Factors**

#### Top management support

Three statements will be used to measure whether top management of these travel companies support the idea of developing a web site to market for travel services. Respondents will use a seven-point Likert scale ranging from “strongly agree” to “strongly disagree” to respond to these statements.

Statement	Source
The owner or manager enthusiastically supports the use of a web site to market for travel services	Adapted from Premkumar and Roberts (1999)

The owner or manager has allocated adequate resources to development of a web site	Adapted from Premkumar and Roberts (1999)
Top management is aware of the benefits of website use in marketing for travel services	Adapted from Premkumar and Roberts (1999)

#### Attitude toward change

Three statements will be used to measure management's attitude toward change caused by web developments. Respondents will use a seven-point Likert scale ranging from "strongly agree" to "strongly disagree" to respond to these statements.

Statement	Source
I am interested to hear about new web developments	Adapted from Lockett and Littler (1997)
Web development has enhanced our lives	Adapted from Lockett and Littler (1997)
We in Egypt have a cultural resistance toward new ideas such as the web	Developed by the researcher

#### Response to risk

Three statements will be used to measure management's response to the risk associated with technological innovation adoption. Respondents will use a seven-point Likert scale ranging from "strongly agree" to "strongly disagree" to respond to these statements.

Statement	Source
I generally see myself as a risk taker rather than being conservative on decisions I make	Lockett and Littler (1997)
I perceive changes caused by the web to the current ways of doing travel work as a challenge	Adapted from Sultan and Chan (2000)
I am comfortable with the changes caused by the web to the current ways of doing travel work	Adapted from Sultan and Chan (2000)

### **Part Five: General Company Information**

This section aims to collect some descriptive information related to the demographic attributes of adopters and non-adopters as follows:

- a- Year the company was established (open-ended)
- b- Year the web site was developed (open-ended)
- c- Proportion of company sales that goes to: (open-ended)
  - o Individual consumers-----
  - o Through foreign tour operators-----
  - o Through hotels-----
  - o Through a partner company abroad-----
  - o Through other channels-----
- d- How the website was developed
  - o In-house
  - o External consultant
  - o Both
- e- Company target customer
  - o Foreign tourists
  - o Egyptian tourists
  - o Both
- f- Position of the respondent within the company?
  - o Owner
  - o Manager
  - o Other (please specify)-----

#### **6.3.4 Sampling Issues**

The basic idea of sampling is that by selecting some of the elements in a population, we may draw conclusions about the whole population (Cooper and Schindler, 2001). Since the main objective of any research is to draw general conclusions about the population, the sample chosen must be representative of the population it belongs to (Diamantopoulos, and Schlegelmilch, 1997). Three important decisions were made regarding sampling that are the population and sampling frame, the sampling unit and the sample size.

### **The population and sampling frame**

The population of this research is all travel agents in Egypt who carry out inbound tourism. Companies who do inbound tourism are the ones interested in marketing their services over the Web as they need to attract and bring tourists to Egypt. Travel companies whose line of business is to carry out religious tours only are excluded from the survey. The reason why these are excluded is because typically they do little active marketing for their travel services but rely on the fact that religious tours are done anyways and are internally driven by people. Accordingly, many of these companies therefore do not actively seek availability presence on the Web in order to attract tourists. The researcher relied on the Egyptian Travel Agents Association (ETAA) agencies directory (2005-2006) that contains an alphabetical list of all travel agents in Egypt in order to determine the sampling frame. However, it is important to note that despite of relying on this source, obtaining complete and accurate information on travel agents who are operating in Egypt and whose focus is on inbound tourism is a difficult task since directories may contain missing, incomplete or wrong information. To compensate for that, the researcher used a screening approach during the data collection phase. The first stage of the data collection process consisted of telephone calls made to companies and these satisfied two purposes: first, to verify the information in the directory (Malhotra, 1996) and second, to take an appointment to fill the questionnaire. Respondents were asked about the size of their companies, their line of business and the ownership of websites. The information they gave was checked with that present in the directory and any difference was verified and wrong information in the directory corrected. Four criteria will be used to choose companies that will form the sample of this survey as follows:

- I. Company size: three different sizes; small, medium and large companies will be chosen.
- II. Web adoption status: both adopters and non-adopters will be part of the survey.
- III. Location of business: Cairo (largest tourist city in Egypt based on tourists' inflow and largest number of travel companies). Sinai was

also chosen at the start of the survey since it is the second largest destination after Cairo, but after some interviews with companies and people in the travel field, it was found that almost all companies operating in Sinai are branches of the headquarters that are based in Cairo.

#### IV. Line of business: inbound tourism

The research used a non-probability sample which is judgment sample in selecting a sample that is believed to represent the population of interest (Diamantopoulos, and Schlegelmilch, 1997). The use of non-probability sampling will be more suitable in this research due to the availability of certain criteria upon which companies will be chosen as mentioned above. Despite the limitations of judgment sampling regarding generalization of results, it provides useful information and is less expensive and less time consuming since the researcher selects a sample that is interested in the research topic and hence is more motivated to answer the questionnaire.

#### **The sampling unit**

The sampling unit is the person from whom relevant information is sought and thus toward whom the questionnaire is directed. It is essential to identify the sampling unit accurately so that the questions are answered by the right person. For the purpose of this research, three positions were identified as part of the sampling unit that are; the general manager, the tourism manager or the marketing manager. The general manager is most of the time, also the owner of the business and the key decision maker. Ideally, the general manager is the best target for completing the questionnaire. After the general manager comes the tourism manager. This is a position unique to the travel industry and is occupied by the second person after the general manager who is also well-aware of all aspects of the business. Finally, the marketing manager is also an influential person within the company and is well-aware of the reasons behind the web adoption/non-adoption decision.

Therefore, the questionnaire will be directed toward any of these three positions within the travel companies because they are thought to possess information related to decisions on the web adoption issue (Malhotra, 1996).

### **The sample size and sample administration**

The accuracy of the survey results is a function of the sample size. Thus the sample size will be chosen in a way that allows the statistical analysis to be conducted and also to be representative of the population (Diamantopoulos, 2000). For the purpose of this research, the researcher will target all Egyptian travel agents in Cairo who conduct inbound tourism. According to an official printout by the ETAA, there are 230 companies. The analysis will use regression as the statistical tool where generally the number of cases needed to make statistical analysis and testing valid is at least 100. The minimum recommended sample size is five observations per independent variable, and the more acceptable size would be a ten-to-one ratio. If this level is reached the results are generalizable given that the sample is representative (Hair et al., 1998).

The data collection phase was conducted over a period of five months (August 06 –Dec 06). A drop-off mail questionnaire was used as the procedure for data collection. A team of 4-5 five university students in addition to the researcher was formed to aid in the data collection process, because the drop-off and collect method can be timeconsuming, particularly in a city such as Cairo. The questionnaire was explained thoroughly to them and they were fully briefed on all aspects of the meeting with the company. However, the respondents were to fill the questionnaire independently and the data collection team only acted as messengers to drop and collect the questionnaires; they had no other role to play. Companies were called prior to the meeting to make sure that they confirm with the criteria of the sample and to verify data in the agencies catalogue. A meeting appointment was also made over the phone with the target person.

The data collection process was quite difficult for a number of reasons. At the beginning of the process, the main problem faced was the difficulty in taking an appointment due to the summer season and many people being on vacation. This made the start up of the

process a slow one. Additionally, companies in general showed an uncooperative attitude and a lack of interest in participating in the research. Many of these companies had to be telephone called many times in order to get an appointment. The reason for that was busy schedule of respondents or low priority given to the research. A few of these respondents actually refused to participate and said that they are not interested to fill the questionnaire. A main problem encountered during data collection was taking an appointment with the right person and after going to the company, either being told that this person has just left or is too busy and being transferred to another person who is not aware of the topic and is not the appropriate person to fill the questionnaire. This problem also slowed up the process and lead to a number of companies being discarded due to the fact that after many trials, the data collectors could not simply meet the appropriate person. Another major problem throughout the whole process was the high turnover of the students participating in the research. These problems have affected the sample size with only 185 completed questionnaires out of the 230 companies available.

From the 185 questionnaires returned 15 were removed for a number of reasons including illegible questionnaires, in terms of company not doing incoming tourism or in terms of wrong person such as a tour operator having filled the questionnaire. Additionally, the questionnaires that clearly involved wrong information such as the company being a non-adopter and having positive responses to adoption specific questions were also removed. Moreover, questionnaires with too many inconsistent responses were also removed. These were decided on a judgment basis. Inconsistent responses included answering an item that asked the same question in a similar way by giving an opposing view. Additionally, clearly inconsistent responses included for example not being an adopter and selling travel services over the web. The researcher made follow-up calls to companies to make sure that the questionnaires have been filled by the appropriate person and to fill in missing questions that have been forgotten to be answered.

### **Response rate**

The researcher attempted to motivate the respondents to participate in the survey through a number of ways. Initially, prior notification was given to respondents by calling them to

give them a brief idea about the survey and to fix a meeting date. Secondly, a cover letter from the ETAA emphasizing the importance of the survey and the attention that is given to it by the Egyptian tourism federation was attached with the questionnaire. Thirdly, the questionnaire was designed in a simple and clear way. Fourthly, a drop and collect survey was used as the process of administration in order to improve the response rate. Fifthly, respondents who showed interest were promised to be given the results of the survey. Finally, follow up calls were made to respondents who chose to take their time to complete the questionnaire to remind them and emphasize the importance of their contribution to the survey (Malhotra, 1996).

The response rate after removing the 15 previously mentioned questionnaires resulted in 170 out of a total of 230 travel firms. Due to this small number on non-adopters, it was decided that it was necessary to go back to the sample frame specifically to increase the number of non-adopters. A further 8 respondents agreed to participate resulting into a final sample of 178 cases including 150 adopters and 28 non-adopters. This represents a response rate of 77.39%.

### **Non response bias**

“Non-response leads to bias if the persons who do respond differ substantially from those who do not respond. If this is the case, the results do not directly allow one to say how the entire sample, let alone the population, could have responded” (Janssens and Pessemir, 1980, pp.4-5). Two ways to deal with the non-response problem are: first, try to estimate non-response bias or sample non-respondents by a number of techniques (see Malhotra, 1996 pp.404-407) and second, carefully design and execute the survey which is thought to be a better method (Diamantopoulos et al., 1991). Additionally, high response rates decrease the probability that non-response bias is substantial (Malhotra, 1996).

In this research due to the nature of data collection, it was difficult to test for non response bias through the different available techniques. However, the careful design and execution of the survey are thought to reduce the impact of non response bias in this research.

## **6.5 Reliability and validity of the measurement scales**

Testing and assuring a reasonable degree of validity and reliability in any measurement process is an essential task. Validity refers to the extent to which a measurement instrument measures what it is aimed to measure, while reliability is concerned with the consistency of the results if repeated measures are made over different time periods. The following is a detailed explanation of how reliability and validity of the measurement process was tested in this research.

### **Reliability of the questionnaire**

Reliability refers to the extent to which the same measurement instrument is likely to produce consistent results if repeated measures of the phenomenon are made over a time span during which the phenomenon is not likely to change radically. Reliability thus refers to the extent to which a measure is free from random error, i.e. the more a measure is free from random error; the more it is judged to be reliable. Three ways to assess reliability are: test-retest reliability, equivalent form reliability and internal consistency reliability (Malhotra, 1996; Diamantopoulos, and Schlegelmilch, 1997).

### **Test-Retest Reliability**

In test-retest reliability respondents are administered identical sets of scale items using the same measurement instrument at two different times under as nearly equivalent conditions as possible. The time interval between tests or administrations is typically two to four weeks (Malhotra, 1996; Cooper and Schindler, 2001).

Several problems are associated with the test-retest approach to determining reliability that are: first, it is sensitive to the time interval between testing whereby the longer the time period, the lower the reliability. Second, the first measurement may have a carryover effect on subsequent measurement as respondents may try to remember the answers they gave the first time. Finally, extraneous moderating variables between measurements may result in a change in respondents' opinions from factors unrelated to the research (Malhotra, 1996; Cooper and Schindler, 2001).

The research attempted to measure the test-retest reliability in an informal way by distributing the pre-final draft of the questionnaire among eight respondents representing the sample during the second piloting phase of the questionnaire. Then within two months, the same respondents were targeted to fill the final format of the questionnaire. The answers of the respondents were relatively stable during this time period as there were no main differences in answering the two versions of the questionnaire. This slightly qualified the questionnaire as being reliable.

Even though the time interval was a bit longer than that recommended (2-4 weeks), the stability of results was simply maintained by the fact that the questionnaire was tested with the same sampling units who were still working for the same employer under the same position.

### **Equivalent Form Reliability**

Equivalent form reliability means the ability to obtain similar results using two equivalent forms of the measurement instrument with their content being kept as similar as possible when measuring the same objects under same conditions (Malhotra, 1996; Diamantopoulos, and Schlegelmilch, 1997). Two major problems of this approach are: 1- it is time consuming and expensive to construct an equivalent form of the questionnaire, 2-it is very difficult to construct two equivalent forms of the questionnaire to measure the same phenomenon. Due to these reasons, this form of reliability was not tested.

### **Internal Consistency Reliability**

Internal consistent reliability refers to the ability of the measurement instrument to produce similar results using different samples to measure a phenomenon during the same time period. A commonly used technique to test the internal consistency or homogeneity among the items is the split-half technique whereby the items on the scale are divided into two halves and the resulting half scores are correlated. High correlations between the halves indicate high internal consistency (Malhotra, 1996; Cooper and Schindler, 2001). The main problem with this reliability test is that the results will depend on how the scale items are split. A way to overcome this problem is to use the Cronbach

alpha that is used to calculate all possible split half coefficients resulting from different ways of splitting the scale items.

### **Validity of the questionnaire**

Validity refers to the extent to which a measurement instrument measures what it is actually aimed to measure. Validity tests are thus used to assess the content of the measurement instrument. Validity in this context is the extent to which differences found with a measurement instrument reflect real differences among respondents being tested (Malhotra, 1996; Cooper and Schindler, 2001). The three main types of validity tests are: content, construct and criterion validity.

### **Content Validity**

Content validity refers to the degree to which the content of the items in the measurement instrument adequately represent the universe of all relevant items under study. Determination of content validity is judgmental but several steps can be used to reduce the subjectivity in this judgment process. First, carefully define the topic of interest, the items to be scaled and the scales to be used. Second, discuss the questionnaire with a panel of persons who are used to judge how well it meets the standards. Finally, pretest the measurement scales (Cooper and Schindler, 2001).

This research measured the factors that affect web adoption in the travel industry with a special application to Egypt. An extensive literature review of the concept of web adoption and the factors affecting it was conducted. Based on this review of literature the research objectives were developed. Following this,, the conceptual model was developed as a synthesis of Roger's model of innovation adoption and the Resource-based View of the firm (RBV). The relevant questions that needed to be asked in the questionnaire were developed based on the variables contained in the resulting research hypotheses. The initial draft of the questionnaire was then pretested among 10 Egyptian travel agents who are representative of the sample. Based on feedback from this pretest, changes were made that were reflected in the substance and form of the scales. A second pretest on 8 travel agents was made to provide further check all aspects of the questionnaire and whether

there would be additional comments on it. A final version of the questionnaire was developed based on the literature review, the research hypotheses and the two pretests.

### **Criterion-related Validity**

Criterion-related validity refers to “the degree to which the predictor is adequate in capturing the relevant aspects of the criterion” (Cooper and Schindler, 2001, p.211). It thus reflects the extent to which a measure can predict a variable that is a designated criterion (Diamantopoulos, and Schlegelmilch, 1997). Two types of criterion-related validity are concurrent and predictive validity that only differ in a time perspective. Concurrent validity refers to the extent to which a measure is related to another measure (the criterion) when both are measured at the same time while predictive validity refers to the ability to predict a future variable using the current measurement instrument (Diamantopoulos, and Schlegelmilch, 1997). Due to the inexistence of previous data on web adoption in the travel industry in Egypt, this form of validity was not assessed.

### **Construct Validity**

Construct validity addresses the question of what construct or characteristic the scale is actually measuring. Construct validity requires a sound theory of the nature of the construct being measured, how it is related to the underlying theory of the phenomenon and how it is related to other constructs (Malhotra, 1996). Construct validity includes convergent, discriminant, and nomological validity.

Convergent validity is “the extent to which a measure is positively related to other measures of the same concept obtained by independent methods” (Diamantopoulos, and Schlegelmilch, 1997, p.35). In other words, it measures whether the scale correlates positively with other measures of the same construct (Malhotra, 1996). Discriminant validity is “the extent to which a measure is not related to measures of different concepts with which no theoretical relationships are expected” (Diamantopoulos, and Schlegelmilch, 1997, p.35). It thus involves demonstrating a lack of correlation among different constructs (Malhotra, 1996). Nomological validity is “the extent to which a measure is related to measures of other concepts in a manner consistent with theoretical

expectations” (Diamantopoulos, and Schlegelmilch, 1997, p.35). This is commonly assessed via factor analysis which will be discussed in later chapters.

## **6.6 Conclusion**

This chapter outlined the methodology utilized in this research. Triangulation or mixed methods approach will be used in this research. The chapter started by discussing the philosophy behind the methodology adopted. Following that the basic research design was discussed. The chapter then discussed data collection, questionnaire development and sampling issues. This chapter has thus introduced the empirical part of this survey in terms of the quantitative paradigm. It is important to note however that this chapter is closely linked to the conceptual chapter and the qualitative research chapter. Accordingly, the methodology was designed with a close consideration to the output of the conceptual part and toward achieving this link between both the empirical and conceptual components of this research.

The following four chapters discuss the three pieces of empirical work conducted in this research to study web adoption. Chapter 7 discusses a small scale website survey conducted to address the evolution of web adoption among travel agents through examining their web sites. Following that, chapter 8 discusses the qualitative work in the form of in-depth interviews with firms conducted to gain insights about relevance and importance of the factors that affect web adoption by firms given the particular nature and context of study. This qualitative approach provides a different perspective on the hypotheses testing it in a less formal way than the quantitative approach. Finally, chapters 9 and 10 discuss the quantitative approach conducted in this research, consisting of multiple regression and logistic regression, which are used to test the hypotheses developed in chapter 4. These three pieces of empirical work together, will be used to examine the phenomenon of web adoption.

# **Chapter Seven**

## **Analysis of Empirical Results**

### **Egyptian Travel Sites' Content Analysis**

#### **7.1 Introduction**

This chapter discusses the results of a small scale content analysis conducted on Egyptian travel agents' websites. This content analysis consists of a small scale survey done on 39 Egyptian travel agents' web sites to study the evolution of travel services on these sites over a period of two years. The purpose of this survey is to outline the level and nature of web adoption of travel companies and thus set the scene for the qualitative and quantitative evaluations of the hypotheses in the following chapters. This survey thus addresses the first research question on the evolution of web adoption among travel agents in Egypt. It does that by describing in detail the way the web is being used by travel agents through the features provided on their web sites and how these evolve over the period of the study in order to understand the prevailing pattern of activity. A classification of these features from basic to advanced provided insights into the level of web adoption of these companies and formed the basis for categorizing companies as simple or sophisticated adopters. This survey is the first of three pieces of empirical work conducted in this research being one major quantitative survey, a small piece of qualitative work in the form of in-depth interviews and this small scale content analysis on travel agents' websites.

Web presence evolves over time. Services offered over the web have become sophisticated in many countries. This study aims to determine the current state of service provision by Egyptian travel sites and how these services change in terms of their level of sophistication over the period of the study which is two years. The target subjects of this study consist of companies that do inbound tourism and their focus is to attract tourists to the country. The study will attempt to examine whether Egyptian travel websites are static or dynamic in terms of the services that they provide and whether they provide simple or sophisticated travel services based on a classification of services that will be

discussed below. It is worth noting at this point that the web survey showed that the web being used much more for promotion rather than for distribution since most travel agents are using it basically for information provision. This provided insights into what was later confirmed by the quantitative analysis since only 79 companies out of the 150 adopters actually distribute their travel services online. Additionally, this is similar to what literature has indicated whereby perceived risk was consistently found to have a negative relationship with Web adoption (Lockett and Littler, 1997; Doherty et al., 2003). It might be that the majority of travel sites are used for information provision and communication only rather than distribution out of a fear of the risks associated with conducting a full transaction and payment online.

Additionally, the study will attempt to determine the popularity of these websites through the number of links to these sites. In doing so, the website itself is viewed as an overall service offering that is composed of different travel products and services. In order to determine the level of sophistication of these travel sites it is thus important to first understand the nature and composition of products and services offered by these sites.

Given the fact that this is a relatively under researched area in literature and since no previous empirical work exists on Egyptian travel agents' websites, some exploratory work was needed for the purpose of this study. The following section will review some models explaining the nature and composition of products/services that served as the basis for classifying services provided on travel agents' websites.

## **7.2 Alternative Models explaining composition of a Service**

In order to classify the different types of services available on Egyptian travel agents' web sites, the researcher started by studying the different existing models describing the nature and composition of services. A review of existing models shows that there have been some attempts made to explain the composition of services by examining the different categories that can be offered and putting them under various levels according to the purpose they satisfy (Kotler, 1997; Gronroos, 1990:2000; Storey and Easingwood, 1998; Fitzsimmons and Fitzsimmons, 1994). An additional model (Davidoff et al., 2000)

that has focused specifically on web sites based on the same idea of different layers of a service is also being considered. These four models are all quite similar in terms of the purpose they satisfy which is to classify services and group them under different levels based on the customer value added at each level. It is important to mention that among the four models, Kotler's (1997) classification offers the most comprehensive and clearest framework since it includes precisely defined levels with clear distinctions between each level and the other in terms of the purpose served and the added customer value. Moreover, it includes more levels than the other three models and thus gives more latitude for classifying services based on these levels. In addition, the clear distinction among the different levels under Kotler's framework does not lead to confusion in classifying different services as might be the case with some of the other models as will be explained below.

It is worth mentioning that none of these four models discuss how services evolve. They are descriptive static models that explain the different layers of a service but not the progression or change of the service over time. They describe service components that add to customer value. Nevertheless they provide us with an adequate base to describe services now and in the future by offering us with different levels of a service. We can thus use these models to compare between services over time which serves the purpose of this study. The following paragraphs will provide an overview of each of these models and explain the similarities and differences among them in describing the different levels of a service.

### **Kotler's five levels of a Product**

Kotler (1997) developed a model of levels of a product based on the idea that a product or service can be categorized under five different levels from core to potential according to the benefit or purpose it satisfies. It is worth mentioning that Kotler (1997, p.430) defined a product to be "anything that can be offered to a market to satisfy a want or need." Thus the term product is used to refer to both physical goods as well as services. There are five levels of a product that the marketer should think through and that add more customer

value at each level (Kotler, 1997). In the following paragraph the researcher will provide a brief explanation of how Kotler defined the five levels of a product.

- Core benefit; is the fundamental benefit or service that the customer is actually buying.
- Basic product; is the tangible product. This includes all features that characterize a product including colour, brand, package, features and so on.
- Expected product; includes a set of attributes that the buyer normally expects and that constitute the buyer's minimum expectation in which not much preference is shown.
- Augmented product; includes additional benefits and services that distinguish a company's product from its competitors.
- Potential product; is the value added in terms of new ways to satisfy a customer and further distinguish the company's product/offer. The aim behind potential products is to surprise customers and delight them by exceeding their expectations. (Kotler, 1997, p.431/2).

These different levels of a product have been described in a generic sense by Kotler. Thus this same framework describing the levels of a product in terms of customer value and can be applied to services. It is important to recognize that this model focuses on providing more customer value at each different level of product/service by adding more features that evolve from satisfying basic requirements to meeting normal expectations to exceeding expectations and even surprising customers. Thus if used as the framework for classifying the services provided by Egyptian tourism travel agents' web sites, the classification would be based on what benefits each group of services provides to tourists and whether these satisfy basic, expected or above expected needs. It is important to mention that Kotler's framework is a well established one that provides a comprehensive levelling of the different products serving different customers' needs.

### **Gronroos's Basic Service Package**

Gronroos (1990:2000) developed a model of service features based on the idea that any service is composed of a bundle of different services, tangibles and intangibles, which together form the service. This bundle of services, according to him, is the "basic service

package” that consists of three levels of services: core services, facilitating services and supporting services. The core services constitute the main reason for a firm’s existence. A hotel, for example, provides a lodging service and thus without this service the hotel can not exist. Thus the lodging service is regarded as a core service in this regard. In order to support this existence another group of services, the facilitating services, is required. Such services facilitate the consumption of the core services that can not be consumed otherwise. A hotel can not function without a reception service. The reception service is thus needed to facilitate the provision of the core service which is the lodging service. A third group of services, the supporting services, is used to differentiate the service from its competitors by adding value to it. Hotel restaurants and entertainment facilities are examples of supporting services. A hotel can differentiate itself in such services by providing distinguished restaurant atmospheres, good quality food, a large variety of entertainment facilities etc. it is worth mentioning that supporting services are not necessary for the consumption of the core services, they are a way to distinguish ones’ services from the competition. Gronroos (1990:2000) explains that it is not always easy to distinguish between a facilitating service and a supporting service in all situations. A service that may be considered facilitating the core service in one situation, for example an in-flight meal on a long destination route maybe considered a supporting service on a short flight.

### **Davidoff et al. Model of Cybermediary functions**

Davidoff et al. (2000) developed a model that utilizes the same idea of different layers of a service but with a particular focus on web sites. It seeks to classify web sites based on the types of services they provide from basic up to advanced functions. They discuss the basic and advanced functions that the web middlemen, “cybermediaries” are expected to perform in order to create value and be successful on the web. They discuss four levels of cybermediary functions that are; basic, basic commercial, advanced and advanced commercial. Basic functions include facilitating information exchange, aggregating buyers and suppliers demands and matching their needs. By carrying out these functions, cybermediaries reduce customers’ search costs, provide information and provide a mechanism for exchange. Moreover, they combine buyer and supplier demands to

achieve economies of scale and scope and introduce potential buyers to suppliers to match needs. Basic commercial functions include conducting e-commerce by enabling online commercial transactions and thus generating revenue. The last two levels deal with functions such as building trust, providing a sense of community, authenticating and hence leading to the most advanced level of value capture through humanizing the virtual experience.

This model is important in that it examines the content features and functions performed by web sites in determining their commercial success. This is unlike most studies that focus only on classifying web site based on factors such as navigation, speed and graphics in determining web sites' success. However, this model can be more addressed toward web sites that perform a hierarchy of functions and thus actually provide different levels of services that can be categorized according to the levels of cybermediary functions developed by this model. This is quite unachievable by Egyptian travel agents web sites since most of these sites perform basic functions that fall under information provision with very few ones focusing on more advanced functions. Even though a description of the different levels might be context specific in that what could be defined as a basic function in one context could be considered as advanced in another context, it will still be difficult to classify the services available on Egyptian travel agents' web sites based on this framework as the majority of services would fall under basic cybermediary functions according to the description of levels provided by this framework.

The result of surveying the travel agents sites under study show that the majority of the sites are focused on providing basic cybermediary functions and that only a few sites attempt to provide value capture through humanizing the virtual experience as proposed by Davidoff et al. (2000). According to Breitenbach and Van Doren (1998) the challenge for web marketers nowadays is to provide users with an experience that is not easily replicated by conventional media. Web sites should provide added value to visitors that encourage them to visit and come back.

### **Fitzsimmons and Fitzsimmons Model of service package**

Fitzsimmons and Fitzsimmons (1994) developed a model that describes the composition of a service in terms of four features that, according to them, are experienced by the customer and form the basis of his or her perception of the service. These features form “the service package” which, in their opinion, consists of a bundle of goods and services that are provided in some environment and include the following:

- Supporting facility; which are the physical resources necessary to provide a service. A hotel is an example of a supporting facility.
- Facilitating goods; which are the materials purchased or consumed by the buyers. Soap and paper in a hotel are examples of facilitating goods.
- Explicit services; which are the benefits that are observable by the senses and form the essential features of the service. A clean room in a hotel is an example of an explicit service.
- Implicit services; which are psychological benefits that consumers may sense indirectly. A friendly hotel receptionist is an example of an implicit service.

Fitzsimmons and Fitzsimmons (1994) explain that all these four features are complementary and form the basis of customers’ perceptions of the service. The researcher thinks that this model can not be applied to travel agents’ web sites as it relies heavily in its four features on the physical existence of the customer to experience these features. Thus, although this model attempts to discuss the attributes of a service package, it can not be applied to web sites since it concentrates on physical rather than virtual attributes.

### **Comparing the four models**

In deciding on which model would be appropriate to use as a base for this study, the researcher made some comparison between the four models in terms of the levels defined by each and purpose of each of these levels. The table and paragraphs below provide explanation on the similarities and differences between these models.

**Table (7.1) Mapping the Four Models**

Kotler (1997)	Gronroos (1990:2000)	Fitzsimmons and Fitzsimmons (1994)	Davidoff et al.(2000)
Core	Core	Supporting Facility	Basic cybermediary & basic commercial functions
Basic	Facilitating	Facilitating Good	
Expected		Explicit Service	
Augmented	Supporting	Implicit Service	Advanced cybermediary & advanced commercial functions
Potential			

Source: compiled by researcher

In trying to compare the four models together the model developed by Davidoff et al. (2000) is not easily comparable to the other three models due to fact that it is very specific to web sites whereas the others are more generic. In addition, the distinction between its different levels, especially with regard to comparing basic cybermediary with basic commercial functions as well as advanced cybermediary with advanced commercial functions is not very clear.

Kotler's core benefit corresponds directly to Gronroos core service and matches with Fitzsimmons and Fitzsimmons supporting facility. All three discuss the fundamental benefit or service that is being delivered and that is the reason for the firm's existence. A travel agent exists to provide a travel service. Thus a travel service constitutes the core service of a travel agent. Moving on the next level, Kotler, Gronroos and Fitzsimmons and Fitzsimmons similarly discuss the tangible components of a service that are

necessary to consume a service. Beds, reception services, soap and paper are all examples of basic or facilitating products to a hotel service. Expected services and explicit services similarly constitute the normal expectations of the buyer with regards to the service. A clean room in a hotel is an example of such a service. What Gronroos describes as a facilitating service corresponds to both basic and expected services in Kotler's model. Similarly, Gronroos's facilitating services correspond to both facilitating and explicit services in Fitzsimmons and Fitzsimmons model. This is because Gronroos discusses that these are the services needed to facilitate the consumption of the core service and without which the core service will collapse. Thus implicit within this level are the basic services needed to consume the core service as well as satisfy the customer's normal expectations. However, Gronroos does not provide a clear distinction between basic and expected services.

The levels in Davidoff et al. model that could be seen as corresponding to these three levels under Kotler's and Fitzsimmons and Fitzsimmons models and these two levels under Gronroos model are the basic cybermediary functions and basic commercial functions as shown in the table. This is because they define these two levels to include the basic functions that a cybermediary must perform to be successful on the web. These include facilitating information exchange, aggregating demands of buyers and suppliers and providing a method of security and authentication of their offering. Thus these functions could be viewed to constitute the core of existence of the web site and at the same time they form the customer's normal expectations from the web site.

Moving on to the last two levels in Kotler's model which are augmented and potential services, these correspond to supporting services by Gronroos and implicit services by Fitzsimmons and Fitzsimmons in that all deal with layers of a service that add more customer value and exceed customers' expectations. It is clear however, that only Kotler's model provides a clear distinction between the different layers of a service that deal with augmenting the service and exceeding customers' expectations by distinguishing between augmented and potential services. Davidoff's advanced cybermediary and advanced commercial functions match the augmented and potential

services by Kotler, supporting services by Gronroos and implicit services by Fitzsimmons and Fitzsimmons because they deal with the same idea of adding more value to the web site by creating virtual experience and humanizing the interaction. However, there is no clear cut distinction between the purpose of each of these two levels under Davidoff et al. model and thus the researcher saw that both levels together correspond to Kotler's augmented and potential services.

Travel agents' web site services that could be categorized as augmented and potential services under Kotler's framework can be viewed as supporting services under Gronroos model, implicit services under Fitzsimmons and Fitzsimmons and Advanced cybermediary & advanced commercial functions under Davidoff et al.'s model. Virtual tours, for example can be classified as potential services because they go beyond customers' expectations and aim to delight customers by allowing them to actually see and judge the place without actually travelling. Thus they help to decrease the risk between customers' expectations and reality and make customers more comfortable about their travel choices. Virtual tours, on the other hand, according to Gronroos (1990:2000) can function as a supporting service to hotels, cruises and safaris. Travel agents providing virtual tours can differentiate their offerings from competitors as well as add value to their core services i.e. hotels, cruises and safaris by virtually illustrating the distinctive features of these services to customers thus allowing them to make more informed decisions concerning their travel. Based on the same idea of differentiating the company's offering and adding more value to the customer, virtual tours could be defined as advanced cybermediary and advanced commercial functions under Davidoff et al. model. It is difficult, however, to classify virtual tours as implicit services as proposed by Fitzsimmons and Fitzsimmons as their model is based on the physical existence of the customer and implicit services are value added services that are perceived by the customer in his/her interaction with the service provider.

A small number of web sites of the Egyptian travel agents attempt to provide the advanced cybermediary functions proposed by Davidoff et al. (2000) by offering services that would attract customers and lead to more interactivity. One web site, for example,

provides a chat room where web site visitors from different parts of the world can chat together and discuss their travel experiences. This service helps build a sense of community whereby people with common interests can interact and exchange travel information. This service also provides added value to the web site and differentiates it from its competitors.

Building on the same idea of interactivity, other sites provide an online guest book where travellers can sign in their comments about their travel experiences. Also web sites visitors can provide comments on any aspect of the web site in the guest book. The idea of a guest book is an interesting idea in itself since visitors to the web sites can learn more about what other people, who have already travelled with the travel agent, think of services provided by the travel agent and about the places they have visited in Egypt. Sharing other travellers' experiences can help reduce uncertainty about the place and make new visitors more comfortable about their travel choices. Virtual tours can also be regarded as a form of interactivity as they provide the site visitor with virtual experience of the destination.

Other sites attempt to conduct e-commerce transactions by providing the customers with an online marketplace where tourism products can be bought electronically. These sites, however, do not provide the necessary services to secure these online buying and selling transactions such as money back guarantee or alliances with security organizations. Thus, these sites do not provide the necessary infrastructure for customers to complete their buying and selling electronically. Other sites attempt to provide visitors with interesting services that would help capture their attention such as newsletters, e-cards and new coming events. The aim of these services is to create more value to the sites by providing services more appealing to visitors that may lead to capture their attention and retain them in the long term.

Having reviewed the alternative frameworks discussing the different layers of a service, it is obvious that there are no major differences between the models. All of them serve the same purpose of outlining the different levels of services that could be provided by the

supplier or intermediary. However, Kotler (1997) model of “five levels of a product” is the most established and most comprehensive one to be used as a base for this research. This is because this model provides a clear distinction between different levels of a product and at the same time provides a variety of levels that allows more freedom in choosing which services fall under which category.

The next section will provide a detailed explanation of how Kotler (1997) model was used as a base for categorizing the services provided by Egyptian travel agents’ websites.

### **7.3 The survey framework**

As mentioned at the beginning of the chapter, this survey addresses the first research question on the evolution of web adoption among travel agents in Egypt by outlining the level and nature of web adoption by these companies through the examination of their web sites. Thus in order to determine the level of web adoption by these companies, a classification of the travel services provided on their websites was necessary. In classifying the different types of services available on the Egyptian travel agents’ web sites, a framework adapted from Kotler (1997) “Five levels of a product” was developed.

The study began by identifying the Egyptian travel agents that have online presence and that provide online travel services. As mentioned at the beginning of the chapter, the target group for this study consists of companies that do inbound tourism and their focus is to attract tourists to the country. A search for Egyptian travel agents who own a website was done via metacrawler search engine which identified 100 web sites. When these web sites were first examined in June 2004 it was found that some of these web sites were passive pages that only included contact information of the travel agent with no services provided at all. Other web sites included small pages that were not actually used since they only included general information on Egypt with again no specific services promoted or offered. Out of these 100 web sites only thirty nine travel agents were identified, based on the researcher’s judgment, as usable ones. These were identified as usable if they actually provided or promoted online travel services such as

tour packages, travel information, hotel information, etc. and not just general information about the company. These thirty nine travel agents' sites identified from sites of tourist organizations including the Association of Egyptian Travel Business on the Internet (AETBI) represent the judgmental sample for this study.

In surveying the web sites of these travel agents, the first stage was to count the different tourism services provided online by the thirty nine travel agents in order to prepare a complete list of all services provided by all travel agents' sites. A list of thirty two services resulted (see appendix C). In order to classify these services according to the Kotler's framework that is described above, one adaptation was necessary which was to utilize four rather than five levels of a product. The reason for this change is that the services provided by the travel agents provide very little, almost negligible differentiation between the first two levels of a product in Kotler's framework, being core and basic products. It was found reasonable to merge both the core and basic products into one level that includes both, since most of the services provided by travel agents in this category satisfy both purposes. A hotel as a tourism product for instance, satisfies the core benefit of providing rest and sleep to customers as well as the basic product benefit which are the features that characterize the physical product such as the hotel name, rooms, reception, information desk and so on.

While surveying the websites, distinctions were made among the various services offered online by the travel agents. The researcher discovered that the majority of web sites provide tour packages, Nile cruise packages, information about hotels available and so on. These offerings are basic for the travel agents main function because a travel agent can not exist without offering tour packages and information about the accommodation available at the destination. Thus it was considered that the first level of the model would include these basic offerings that most travel agents offer for sale.

Moving a step further was another set of services provided by still a big number of web sites but not the majority. These services aim to meet customers' travel needs and thus include issues such as travel tips, maps, information on prices and so on. Such services

are not vital for the main function of a travel agent but they still meet customers' normal expectations. These offerings thus could form the level of expected services.

A fewer number of sites aimed to provide more differentiated offerings than competitors such as tailor-made packages to meet customers' specific travel preferences, providing customers with currency converter, weather forecast, extra tour options and so on. These services form a third layer of augmented services. The final set of services included offerings that exceed customers' expectations and aim to delight customers. These are provided by very few travel agents and they include services such as offering customers with an online marketplace where they can buy "Ancient Egypt" products, chat rooms where travellers can share their travel experiences, virtual tours demonstrating the actual destinations online and so on. These services form a layer of potential services.

Therefore, a four level model was used to capture the different layers of services provided by travel agents. The following is an explanation of the four levels model adapted by the researcher from Kotler's framework as well as the attributes depicted under each of these four levels. In order to categorize the services offered by the travel agents' web sites under the four levels model described above, the services provided by each site were thoroughly investigated to determine the frequency of the provision of each service among all the thirty nine sites selected. Categorizing the attributes under study in the different levels of the model described was thus based on both the frequency of the provision of each service as well as the researcher's personal judgment. The following is an explanation of how these attributes were categorized under each level.

Core/ basic services; which are tangible tourism products that satisfy the main reason of existence of a travel agent that is to provide a travel service. These products/services are regarded as the backbone of a travel agent's existence. Such services are basic services that a travel agent should provide in order to qualify as a travel agent. These include programs covering the main tourism attractions available in Egypt such as the red sea, the cultural heritage and the desert. It also includes information on accommodation available at destinations since such information is basic for any travelling purposes. Thus included

under this category are the following attributes: tour packages, Nile cruise programs, diving programs, excursions, safari and hotels' information. A review of the web sites under study indicated that these services were provided by most of them.

Expected services; these services are expected from a travel agent but are not necessary for its existence, i.e. it can still function without providing them. These include the customers' normal expectations as to what the travel agent should offer. The attributes that go under this level are those that a traveller coming to Egypt would normally expect to get from a travel agent. Services such as providing the traveller with travel tips, maps, prices of destinations, hints on Egypt all satisfy customers' normal expectations and all are provided by a large number of travel agents. Hotel booking and online reservations also form a normal expectation by travellers who need to be able to book their travel choices online. It is worth noting however, that being part of a developing country where IT is still in its introduction phase, not all of those sites that offer online hotel booking and reservations automatically provide the traveller with immediate online reservation. Most of these sites ask customers to enter their preferences regarding the accommodation and the duration of travel in a preset form or via email and then provide them with a reply at a later stage. This is basically because there is no adequate level of integration on the B2B level between the different travel parties involved, i.e. travel agents and hotels in this case. One final attribute that is surprisingly provided by a small number of travel agents is information on restaurants available at destinations. Providing information on the restaurants available at the destination also constitutes a normal expectation by the traveller since it is one of the things that a traveller would be interested to have an idea about and may consider in making his/her travel choices. Thus information on restaurants was also included among the expected services.

Augmented services; these are the services provided by travel agents over and above the customers' normal expectations. They are used to distinguish a travel agent's offerings from competitors. Included under this level are all packages that serve customers' special needs such as tailor made packages, hot deals/special offers, extra tour options and honeymoon packages. Also included are attributes that provide travellers with less

common features such as currency converter, weather forecast and an online guest book where they can record their comments and thus can share their experiences with people from all over the world. Finally, three more attributes included under this level that are transfers and car rentals, train reservation and flight booking. Web sites that are at the maturity level in terms of web use provide these services as expected services since securing the transportation for the traveller is an important part of any travel and thus should be a normal expectation from a travel agent. In Egypt however, travel agents' web sites can be considered at an early development level in terms of web use and at the same time there are few strategic alliances formed between the different tourism organizations such as travel agents and transportation companies, thus such services are not normally provided by these travel agents. Thus travel agents that provide online transfers and car rentals, train reservation or flight booking have gone a step ahead of the normally expected services provided by Egyptian travel agents' web sites and that is the main reason why these services were categorized as augmented.

Potential services; these services are rarely provided by travel agents. They are unusual services that aim to exceed customers' expectations by delighting them. The researcher included in this level the services that go beyond customers' expectations, that are somehow unusual to be provided in a developing country, and that would surprise customers. These attributes in particular allowed more interaction with travellers. For example an online marketplace where customers can buy products is provided by two sites, a chat room where travellers can share their travel experiences with people from all over the world is provided by one site, new events are also posted by another site, Egypt's directory and a newsletter are also provided. Virtual tours, inquiry forms and e-cards, according to the researcher, can also be classified under this level as they are regarded as extra services. The following section explains in details the approach taken to analyze the websites.

## **7.4 Website Analysis**

The objective of this content analysis is to describe the way the web is being used by travel agents through the features provided on their web sites and explain how these

evolve over the period of the study in order to understand the prevailing pattern of activity. In order to achieve this objective a systematic analysis of websites was needed. This section explains the approach taken to analyze the features present on travel agents websites and their evolution over the period of the study which is two years.

Website analysis started by a count of all the different features present on the 39 chosen travel agents' websites in June 2004. The 39 sites chosen had at least one or more of the facilities needed for travel inquiry, communication, reservation or booking. They were not passive websites with just general information about the company and nothing in terms of actual travel services provided online. The counting process of features on all 39 websites resulted in 32 features in total being identified. This was done by visiting each site and counting the number of features present on it. An aggregation of all the different features provided by all 39 sites resulted in a total of 32 features.

In order to classify these features under Kotler's framework, two approaches were used. First, the frequency of provision of each service in all 39 sites was calculated. A count of how many sites provided this features was done. For example, as can be seen in table (7.2) that follows, tour packages were provided by all 39 sites in the second round of data collection. Nile cruise programs were provided by 35 out of the 39 travel sites. Thus the frequency of provision of the feature gave an indication of the importance of the service to the travel agent. Second, the researcher relied on personal judgement to determine which feature should fall under which category. Tour packages for example were seen as essential for the travel agent's existence as they represent the main service the travel agent exists to provide and thus were classified under core/basic services. Virtual tours were seen as potential services as they exceed customers' expectations by providing them with a view of the place they are going to visit before they actually go, and are provided by very few travel agents (only 4 sites in the second round provided virtual tours). Thus together, the frequency analysis and the researcher's personal judgement were used to classify the features under kotler's framework.

Four rounds of data collection were conducted with a time lag of six months between each round in order to determine the attributes that each web site provides under each category of the four levels and the change in these services across the four rounds. Data from the travel agents' sites were collected over a two weeks period in each of the four rounds. These four rounds provided sufficient data on where do these web sites stand in terms of the features they provide and the evolution of these features over the period of the study. The results as shown in table (7.2) were tabulated in two formats (ratios and percentages). The figures were calculated based on the number of attributes in each level to the total number of attributes of that level for each web site. In conjunction to collecting data on features of web sites, data was also collected on the popularity of these web sites through a software program called Alexa that showed the traffic rank and number of links of each site. Data on traffic rank and links was collected over one day in each round. The following section presents the descriptive analysis conducted on the data and the results of the survey.

**Table (7.2): Results of the Second Round of Data Collection**

	<i>Site Name</i>	<i>Services Groups</i>							
		Basic Services		Expected Services		Augmented Services		Potential Services	
		Ratio	%	Ratio	%	Ratio	%	Ratio	%
1	Airlink Travel	2/6	33%	2/7	29%	0	0%	0	0%
2	Gattours of Egypt	3/6	50%	2/7	29%	2/12	17%	0	0%
3	Al Weaam Tours	5/6	83%	2/7	29%	3/12	25%	0	0%
4	Arab Travel & Holidays	5/6	83%	3/7	43%	2/12	17%	0	0%
5	Budget Travellers	5/6	83%	3/7	43%	0	0%	0	0%
6	Champion Tours	3/6	50%	2/7	29%	1/12	8%	0	0%
7	Delta Tours	2/6	33%	4/7	57%	1/12	8%	0	0%
8	Eastmar Travel	5/6	83%	3/7	43%	1/12	8%	0	0%
9	Experience Egypt	4/6	67%	5/7	71%	4/12	33%	0	0%
10	Five Star Travel Group	4/6	67%	3/7	43%	1/12	8%	0	0%
11	Flash Tour	4/6	67%	4/7	57%	1/12	8%	0	0%
12	Flywell Travel	4/6	67%	5/7	71%	2/12	17%	0	0%
13	Galaxia Tours	4/6	67%	3/7	43%	1/12	8%	0	0%
14	Holiday Tours	3/6	50%	1/7	14%	0	0%	0	0%
15	Lamour Travel	4/6	67%	3/7	43%	0	0%	1/7	14%
16	Magic Travel Services Egypt	3/6	50%	2/7	29%	1/12	8%	0	0%
17	Nasco Tours	4/6	67%	1/7	14%	1/12	8%	0	0%
18	Nile Melody Travel	4/6	67%	6/7	86%	3/12	25%	0	0%
19	Orbit Tours	1	100%	3/7	43%	1/12	8%	0	0%
20	Sharra Tours	4/6	67%	4/7	57%	3/12	25%	0	0%
21	Spring Tours	2/6	33%	3/7	43%	0	0%	0	0%
22	Travco Travel	5/6	83%	3/7	43%	4/12	33%	1/7	14%
23	Capstone Travel	3/6	50%	5/7	71%	1/12	8%	1/7	14%
24	Cosmos Tours	2/6	33%	3/7	43%	1/12	8%	0	0%
25	Farida Tours	2/6	33%	0	0%	1/12	8%	0	0%
26	Intoegypt	4/6	67%	6/7	86%	3/12	25%	5/7	71%
27	Kemi Tours	5/6	83%	1/7	14%	1/12	8%	1/7	14%
28	Memphis Tours	1	100%	6/7	86%	3/12	25%	0	0%
29	Mena Tours	2/6	33%	0	0%	0	0%	0	0%
30	National Travel Service	5/6	83%	2/7	29%	0	0%	1/7	14%
31	Omega Travel	0	0%	0	0%	0	0%	0	0%
32	Aegyptus Intertravel	2/6	33%	2/7	29%	1/12	8%	0	0%
33	2travel2egypt	5/6	83%	4/7	57%	3/12	25%	4/7	57%
34	Narmer Tours	4/6	67%	1/7	14%	0	0%	0	0%
35	Egyptian American Tours	3/6	50%	2/7	29%	1/12	8%	0	0%
36	Hamad Tours	3/6	50%	4/7	57%	4/12	33%	0	0%
37	Perwin Travel	2/6	33%	3/7	43%	0	0%	0	0%
38	Viking Travel	5/6	83%	3/7	43%	2/12	17%	1/7	14%
39	Commodore Travel	0	0%	0	0%	0	0%	0	0%
40	Osoris Travel & Holidays	1	100%	2/7	29%	5/12	42%	2/7	29%
41	ITTA tours	4/6	67%	2/7	29%	1/12	8%	0	0%
42	Blue Sky Travel	2/6	33%	3/7	43%	0	0%	1/7	14%

## 7.5 Results of the Survey on Travel Agents' Websites

The following table provides a descriptive analysis of the data gathered on services features provided by the 39 Egyptian travel agents' websites over a period of two years in order to see the evolution of services provided by these sites.

**Table (7.3): Mean Number of Features in each Category across All Rounds**

Round	Core	Expected	Augmented	Potential	Total services mean
1 (June 04)	58.6	41.4	11.1	5.5	116.6
2 (Dec 04)	63.3	41.4	12.6	6.6	123.9
3 (June 05)	64.1	43.6	14.3	6.6	128.6
4 (Dec 05)	64.5	46.2	15.2	6.6	132.5

As can be seen from the table core services exhibit the highest mean in the four groups of services indicating that these websites focus mainly on providing the services that are basic for a travel agent's existence. Following that, expected services also show a relatively high mean indicating that these services are also adequately provided by travel agents in comparison to the other services. The mean of augmented services is low indicating that these services are not provided by a large number of travel agents. Finally, potential services have the lowest mean indicating that only a few web sites provide these services. This suggests that most travel agents are simple adopters whereby their main focus is to provide the basic services necessary for the existence of the travel agent and target customers' normal expectations. Additionally, fewer companies can be categorized as sophisticated adopters who aim to provide augmented or potential services that aim to go beyond customers' expectations. It is worth noting that this operationalization of web adoption is based on rich and in-depth information on the features present on travel agents' websites. This method of operationalization was made possible due to the small sample size and the detailed information present on websites, and will be used as the basis of the qualitative work. However, the quantitative study will resort to a simpler operationalization of adoption based on communication versus transactions. Companies that use the web only for communication will be classified as simple adopters where as those who use the web also for distribution will be classified as sophisticated adopters.

Comparing the four rounds together over the period of the study shows that there has been an increase in the range of services provided over the two years although this change is small. The means of the four groups of services across all rounds indicate that few changes have occurred in terms of the services provided on these websites over the two years. The core, expected and augmented services show few changes in means between first and fourth rounds while potential services means were the same for all four

rounds. Thus in terms of evolution of services over the period of the study, some change has occurred but this change was small indicating that besides providing basic services, these travel sites are quite static in terms of the services they provide on their sites.

If we look at the evolution of all four groups of services taken together over the two years, indicated by the total services mean, we would notice the same results suggesting that there has been a small increase in the total services provided indicating that these websites have made minor changes in terms of features provided on their websites over the period of the study. The total services means, which represent the mix of different service types these firms provide, indicate that only few changes have occurred in terms of services provided over these sites over the two years. These changes that occurred in means between the first and fourth round go back to the changes in core, expected and augmented services as explained above. This further confirms that in terms of features provided on their websites, these companies are simple adopters of the web

As mentioned earlier, this study attempts to see whether links of these sites changed over the period of the study in order to determine the change in the popularity of these web sites. The following table will show the descriptive analysis on number of links for the 39 companies across all rounds

**Table (7.4): Descriptive Analysis on Links for the 39 companies across All Rounds**

Round	Minimum	Maximum	Mean	St. Dev
1	0	209	31.1	40.5
2	0	49	6.5	9.9
3	0	49	6.5	9.9
4	0	49	6.5	9.9

As can be seen from the above table, except for the first round, the data on number of links for each website remained exactly the same for all three rounds with no change occurring. Actually the large drop in the maximum number of links from round one to round two was due to a large drop in the number of links in one site. A reason could be that this site might have stopped paying for links.

Apart from this large drop, there has not been change in terms of the number of sites linked to these travel agents' websites. The figures show that Egyptian travel websites have low popularity because of the small number of links that they have. The maximum number of links for rounds two to four was only forty nine which is low. There are some sites that are not even linked to other sites and thus have zero links. This might indicate that Egyptian travel agents need to place more emphasis on marketing their travel sites by linking themselves to popular travel sites in order to achieve global access and exposure. This would help them be visible by a large number of customers who search these popular sites for different purposes. This might indicate that Egyptian travel agents might need to develop their marketing capabilities in order to be able to properly market their travel services on these popular websites that they link themselves too and thus can attract more customers. This is very much in line with the results of the quantitative analysis that found a significant positive relationship between marketing capabilities and simple versus sophisticated adoption.

## **7.6 Conclusion**

The purpose of this chapter is to study the evolution of travel services provided on Egyptian travel agents web sites through a survey conducted on 39 Egyptian travel agents' websites over a period of two years. Specifically, this survey addresses the first research question on the evolution of web adoption among travel agents in Egypt. It does that by describing how the web is being used by these companies through examining the features provided on their web sites and how these features evolve over the period of the study. The results of this study show that Egyptian travel agents' websites are quite static in terms of the content provided and that changes do not take place at a fast pace. Additionally, the majority of these sites can be categorized as simple sites focusing mainly on the provision of core and expected services rather than augmented and potential services. The sites that provide augmented and potential services are very few indicating that the level of sophistication of these sites is low. It is worth noting at this point that these results are in line with the results of the in-depth interviews and the quantitative analysis that will be discussed in the following chapters. In-depth interviews showed that many travel agents consciously decided to use websites for promotion and

not for distribution, by focusing mainly on information provision because of security concerns related to online payment. This was later confirmed in the quantitative analysis whereby perceived risk was found to have a negative and significant relationship with simple versus sophisticated adoption. This is also in line with the literature that consistently showed a negative relationship between perceived risk and web adoption. Additionally, the results of the survey show travel agents' focus on core and expected services much more than augmented and potential services. This matter might indicate that travel agents need to develop their marketing capabilities in order to be able to provide customers with services that meet or even exceed their expectations. This is in line with the results of the quantitative analysis whereby marketing capabilities was found to have a significant positive relationship with simple versus sophisticated adoption. This is also in line with the literature that showed a positive relationship between marketing capabilities and web adoption.

The following chapter will discuss the results of the second piece of empirical work in this research which is the qualitative work in the form of in-depth interviews conducted on travel agents in Egypt.

# **Chapter Eight**

## **Qualitative Interviews**

### **8.1 Introduction**

This chapter discusses the qualitative work conducted in this research which consisted of in-depth interviews with travel agents in Egypt. The qualitative analysis provides evidence which can be used by itself to evaluate the hypothesised model. More significantly, triangulated with the quantitative data it can be used to provide a more complete understanding of the investigated phenomenon by combining different research strategies (Erzberger and Prein, 1997).

The analysis that follows discusses individual respondents' opinions regarding the factors that affected their web adoption decisions. While providing their opinions, these respondents discussed the facilitators and barriers to web adoption by travel agents in Egypt. This chapter is divided as follows. Section 8.2 provides a profile of the respondents interviewed. Section 8.3 discusses the data analysis process. Section 8.4 provides a detailed discussion of respondents' opinions regarding the three groups of factors being innovation attributes, firm resources and individual factors that are thought to affect firms' web adoption decisions as proposed in the conceptual model in chapter 4. Finally a conclusion is provided in the last section 8.5.

### **8.2 Profile of Respondents Interviewed**

In-depth interviews were conducted with travel agencies in Egypt. Travel agencies were identified from a Travel Agencies Directory (2003-2004). Companies were chosen based on two criteria that are size and category of web adoption. Size was determined based on the capital of the company which is a piece of information available in the agencies directory. Number of employees or sales turnover, which are more commonly used determinants of company size, (Premkumar and Roberts, 1999; Palvia et al., 1994) were not used instead of capital because companies in Egypt do not reveal such data as they regard them confidential. The three categories of size according to capital, as depicted by

the researcher, are small (100,000-499,999 L.E.), medium (500,000-1,000,000 L.E.) and large (greater than 1,000,000 L.E.). These categories were selected based on the distribution of reported capital as listed in the agencies directory. Size was chosen as one of the main criteria for company selection because it is one of the factors that, according to previous empirical research results, has shown importance in affecting IT innovation adoption (Thong, 1999; Kimberly and Evanisko 1981; Damanpour ,1987; Drury and Farhoomand ,1999). It is important to notice though that most of the travel companies operating in Egypt are small and medium size (SMEs) enterprises. Including companies from the three different sizes was important, however, to explore whether this factor had an effect on web adoption/non-adoption by these companies.

As for web adoption status, three categories were identified namely, non-adopters, simple adopters and sophisticated adopters. These categories were identified based on the features available on the web site owned by the company. A classification of these features from basic to advanced provided insights into the level of web adoption of these companies and formed the basis for categorizing companies as simple or sophisticated adopters. Whereas non adopters did not own a web site, simple adopters owned a basic site that contained information on the main tourism services and programs provided. Sophisticated adopters sites, on the other hand, contained more interactive features besides the main tourism programs and services, such as newsletters, virtual tours, e-cards, Egypt directory, new events and the like. The level of sophistication of the web site was determined based on a classification scheme of sites' features developed by the researcher based on the web survey described in the previous chapter (see appendix C).

Drawing on the content analysis, this way of operationalizing web adoption was made possible due to the small sample nature of the qualitative study and the detailed information already collected from the websites. This allowed a complex and elaborate way of classifying adoption based on detail about specific features present on these companies' websites. The quantitative work used a simpler approach of classification based on communication versus transactions based on selling online. Note, however, that these two approaches overlap, i.e. those who are simple adopters are essentially using the

web for basic promotion while those who are sophisticated adopters are using the web for more complex promotion and/or distribution.

It is worth mentioning that companies had no objection about being identified in the research and thus there was no need to disguise their names. The following table provides information on these companies including size and level of web site adoption.

**Table (8.1) Information on Interviewed Companies**

<b>Company</b>	<b>Size</b>	<b>Date of adoption</b>	<b>Level of adoption</b>
Amin Tours	Small	N.A.	non-adopter
Blue Coast tours	Small	N.A.	non-adopter
Touring Club of Egypt	medium	N.A.	non-adopter
Al Wadi tours	Large	N.A.	non-adopter
Egyptian American tours	Small	1999	simple
Amigo tours	Small	1999	simple
Champion tours	Small	1998	simple
National travel service	medium	1998	simple
Spring tours	Large	1995	simple
Egyptian American tours	Small	1999	simple
Experience Egypt	Small	1999	interactive
Intoegypt	Medium	2001	Interactive
Creative Travel International	Large	1999	Interactive

### **8.3 Data Analysis**

Qualitative research methods allow the researcher to get close to organizational members in order to gain insights about their opinions regarding the subject matter studied. The researcher then analyzes the data to draw out meaningful themes and patterns (Easterby-Smith et al., 1991).

In total a series of twelve in-depth interviews were conducted on a convenience sample of travel companies in Egypt. These were semi-structured interviews conducted with the general manager, tourism or marketing manager of these companies. An initial approach was made by contacting the general manager, tourism or marketing manager of these companies to seek his/her agreement to participate in the study and accordingly appoint a meeting date. Interviews lasted between 45 minutes and 2 hours and each interview covered only one meeting with a key informant. The opening question asked “what are your views on the web as an aid to tourism activities carried out by your company?” and subsequent themes including reasons for web adoption or non-adoption, perceived barriers, perceived short and long term benefits and future adoption intentions were then explored (see appendix B). All interviews were tape recorded and also field notes were taken during the interviews.

Following the interviews the transcripts were analyzed using thematic analysis. The first step in the analysis was the transcription of the interviews which involved tape recording the interviews and taking field notes as needed. Following that data was organised into easily retrievable sections. Each interview was given a number and all kept in a secure file. The third step involved re-reading the transcripts carefully again and listening to the tapes to develop familiarization with the data before the formal analysis begins. The next step was themes identification and it involved examining each case individually and trying to identify patterns within each interview in order to discover factors that explain why these companies have adopted/not adopted the web. The cases were then grouped under three groups namely, non-adopters, simple and interactive adopters in order to identify what each group has in common and what makes one group different from the other, hence a cross case analysis was conducted. By identifying the similarities within the three groups as well as the differences between them, the researcher was able to develop a basis to try to understand the factors that influenced web adoption by these companies and to compare these with the model developed earlier in chapter four.

In line with the constructs studied in this research, the following broad groups of factors affecting web adoption were identified from the data and formed the basis for the analysis:

- Innovation attributes
- Firm resources
- Individual factors

## **8.4 In-depth Interviews with Travel Agents**

This section will provide analysis of these interviews' results based on each factor and its effect on the three adoption decisions. As mentioned at the beginning of the chapter this data is used to provide some insight into the hypotheses developed in chapter 4 and thus the hypotheses presented in chapter 4 will be referred to here in order to provide the necessary link to the results of this qualitative work. These results will be presented in the form of quotations thus presenting respondents' opinions and what they have actually said about each of these factors. As mentioned above, these factors are discussed under the three key themes that resulted from reviewing the literature and in line with Rogers (1962) diffusion of innovation model and the resource-based view of the firm.

### **8.4.1 Innovation attributes**

Rogers (1962) seminal text identifies five characteristics pertinent to the innovation itself that have an affect on its adoption that are: relative advantage, compatibility, complexity, trialability and observability. Bauer (1960) added another factor, perceived risk, to those proposed by Rogers. It is worth noting that perceived risk maybe particularly relevant in the adoption of a service innovation like the web since web adopters can not evaluate its functionality before actually adopting it. Relative advantage, compatibility, trialability and observability are positively related to innovation adoption whereas complexity and perceived risk are negatively related (Rogers, 1962; Bauer, 1960). The following is an explanation of the innovation attributes found relevant to web adoption/non-adoption by Egyptian travel agents.

### ***Relative advantage***

Relative advantage has been defined by Rogers (2003, p.229) as “the degree to which an innovation is perceived as being better than the idea it supersedes.” The interviews showed that non-adopters and adopters had different views of the value added benefits of the web to their current way of doing business. While both adopter groups mentioned that one of the main reasons why they adopted the web was the relative advantage of this new medium over traditional marketing methods, non-adopters could not understand the usefulness of this new medium to their business and did not have the interest to learn more about it. Furthermore, some non-adopters mentioned that the web is an unsuitable medium for providing the tourism service as they think that it alienates the interaction between the customer and the travel agent. Some non-adopters explained that the website can not provide the human touch that is possible in physical interactions. Since the tourism service depends to a large extent on human contact and creating good experiences in travelers’ minds, they thought this was a disadvantage of using the Web. According to the marketing manager of Amin Tours (a non-adopter),

*“There is no human contact on the web, a matter that doesn’t give the traveler a chance to discuss all aspects of the service offering with the company and feel comfortable about it. “The web just provides information without personalizing the interaction”*,”

Thus some non-adopters even viewed the web to have a relative disadvantage when compared to the traditional marketing methods.

Common to simple and interactive adopters were reasons including capture new opportunities created by the web, enhance company image, achieve greater visibility on both the B2C and B2B levels, achieve wider reach, provide individualized marketing, reduce cost associated with traditional marketing tools, open new markets, be up to date with world movement of web adoption, market the company’s products to an international audience, increase customer base and increase sales. Since the decision to adopt or not adopt the web is basically a management decision, it is obvious that management’s awareness of the importance of this medium has been influential in these

companies. Some of these contrary views between non-adopters and the two adopter groups are discussed below.

*“We didn’t have the courage to invest in something new that we didn’t know any thing about and couldn’t see any benefits from.” (Touring Club of Egypt; non-adopter)*

*“Most people use the web site for browsing purposes and not for actual reservations, thus the return expected from developing a web site would be too small to justify the cost of investment.....We are already satisfied with the work we do now and we don’t intend to change, especially that we don’t see any added benefits from this change.”(Amin Tours; non-adopter).*

Contrary to these views were the views of simple and sophisticated adopters who showed similar opinions in terms of their perception of the web’s relative advantage over traditional means of doing tourism business.

*“The web can help travel agents greatly with their tourism activities through aiding them with their promotional activities and through increasing their customer base which in turn will be reflected in more sales.” (Egyptian American Tours, simple adopter)*

*“The web is an excellent tool for travel companies to promote their products to an international customer.” (Experience Egypt; interactive adopter)*

Adding to this, the general manager of Creative Travel (interactive adopter) explained that those companies that will not adopt the web and actually start using it in conducting business will be forced out of the market in the near future.

A sub-factor of relative advantage on which different opinions existed between non-adopters and simple and interactive adopters is cost. Although non-adopters saw that cost was a factor that hindered their adoption of the web, both adopter groups saw the opposite. While non-adopters were concerned with the cost of initiating and maintaining the web site to provide accurate and up to date information about the current situation, simple and sophisticated adopters were more focused on the cost of marketing tools used

to promote their tourism programs including flyers, brochures, etc. Simple adopters mentioned that the web decreased the cost associated with these traditional marketing tools since instead of printing thousands of brochures and flyers to keep the customer informed about the offerings of the company, all the needed information can now be posted on the web. Therefore this was seen as part of the relative advantage of this new medium. The marketing manager of National Travel Service explained that the web site saves the company the hassle of providing each customer with information on the company and its offers on an individual level. All the information is posted on the web to all customers and thus this is less costly to the company and less time consuming.

*“Why should I incur the cost of printing and distributing thousands of brochures if I can simply market all my products at a low cost on the web?” (Champion Tours; simple adopter).*

*“It is not practical to print dozens of brochures to distribute in conferences and travel events; you can simply post whatever you want to market on your web site”, (Intoegypt; interactive adopter).*

These results are in line with the literature (Premkumar and Roberts, 1999; To and Ngai, 2006) that indicated that there is a positive relationship between relative advantage and innovation adoption, and also in line with the hypothesis discussed in chapter four on relative advantage that says that a positive relationship is expected to exist between relative advantage and the degree of web adoption.

### ***Compatibility***

Rogers (2003, p.240) defines compatibility as “the degree to which an innovation is perceived as consistent with existing values, past experiences, and needs of potential adopters.” Compatibility with previous values and with needs of adopters seemed obvious for simple and interactive adopters especially when it came to discussions relating to what they think about new ways of doing tourism business and how they would like to interact with their customers in the future. Although not explicitly mentioned, it seemed that the web was in line with management’s existing values

regarding ways of doing tourism business. Some adopters even seemed somehow biased toward the computer world in general and the web in particular in terms of their belief about how business should be done.

*“The web is no more an option, it will force itself one way or another and those companies who won’t start using the web in their business will be kicked out one day” (Intoegypt; interactive adopter).*

This shows how web adoption by these companies was a result of a belief by its owners or decision makers that it is important and a vital tool to cope with the new ways of doing business in tourism. Additionally, discussions showed how the web closely matches adopters’ needs relevant to how they would like to interact directly with their customers and how they aim to make use of the unique features of the web to provide customers with a customized service that meets their specific needs.

Moreover, compatibility in terms of management’s familiarity and experience with computers and the web seemed to facilitate the adoption decision. Most simple adopters developed their web sites internally in terms of content and design and left only the technicalities to an outside company. The general manager of Amigo Tours (simple adopter) mentioned that the idea, content and design of the website were developed by himself whereby he decided on all the details related to the web content including programs and services offered. Non adopters, on the other hand, did not demonstrate any need to use the web to interact with customers.

*“The web does not match the way we would like to do business and the traditional way has already proved successful and therefore there is no need to change.” (Amin Tours; non-adopter).*

Additionally, although not explicitly mentioned, it seems plausible that non-adopters’ lack of experience and interest to learn about computers and the web acted as a barrier to their adoption decision. These results match the expected positive relationship between

compatibility and the degree of web adoption as presented in the hypothesis and as evident in the literature (Grandson and Pearson, 2004; Beatty et al., 2001).

### ***Observability***

Rogers (2003, p.258) defines observability as “the degree to which the results of an innovation are visible to others.” According to him, the degree to which an innovation is observable, as perceived by members in a social system, positively affects its rate of adoption. The web is an innovation that has started to become highly visible among the Egyptian business society in the past few years. In addition, the new generations are using it extensively for several purposes including research, entertainment, and to a lesser extent shopping. From the interviews’ discussions, it was apparent that two aspects helped facilitate the adoption decision by both simple and interactive travel agents that are, watching what other travel agents are doing and how much they have progressed with their web adoption efforts as well as attending international travel fairs and conferences and thus being exposed to new ideas in doing work. It is important to mention however, that these companies couldn’t actually measure how other companies are benefiting from the web due to the fact that the web is still at an early phase in Egypt and no obvious tangible benefits have been reaped up till now. The web is a fairly recent innovation in Egypt that has started to be recognized and used by companies in different industries including the tourism industry not from a long time back. Being a relatively recent innovation, the potential of the web has not been fully exploited by tourism companies until now. It was evident however that adopter companies still perceived that the Web had observable benefits even if these were not yet tangible or measured. Many of the companies that have adopted the Web have done that out of the expectation that the Web can bring to them many benefits in the future including more travel business. When interviewees were asked about whether they have materialized actual benefits as a result of Web adoption, all said that up till now no actual benefits in terms of increase in travel business conducted or increase in profits have occurred. This might be due in part to the fact that of Web being a recent innovation in Egypt but also because most of these companies are using the Web for information provision only and no complete online transactions are conducted.

*“Travelling to attend international travel events has helped provide me with experience and exposure to the idea of the web, a matter that definitely had an effect on my adoption decision (Champion Tours; simple adopter).*

Moreover, the general manager of Amigo Tours mentioned that the web site was developed as a result of observing the market and seeing that many companies have started to adopt the web and developed their own web sites. Whether these companies have gained tangible benefits or not from developing their web sites was not a main concern. What was important was to follow the pattern of web adoption that has started to be widely available in the Egyptian market.

It is also worth mentioning that quite different from simple adopters; interactive adopters paid more attention to the benefits reaped by companies from web adoption. Since tracing results was not possible on a local level because of the newness of web use in Egypt, some interactive adopters mentioned that they observed international travel results. One main reason why Intoegypt has adopted the web, according to its general manager, is observing the international statistics indicating that the travel industry is one of the most highly growing industries on the web.

*“Statistics at the end of 2003 indicate that the travel industry is one of the top five growing industries on the web in the world with an end of year revenue of 30 billion dollars.”*

Contrary, to simple and interactive adopters, it was evident that non-adopters' lack of observability in terms of following what other travel companies are doing in this regard has acted as a barrier to web adoption. These findings suggest that observability had a positive relationship with the degree of Web adoption as proposed in the hypothesis in chapter four. These results are also in line with the literature that indicated that a positive relationship exists between observability and innovation adoption (Chong and Pervan, 2007).

### ***Complexity***

Rogers (2003, p.257) defines complexity as “the degree to which an innovation is perceived as relatively difficult to understand and use.” According to him, the complexity of an innovation, as perceived by members in a social system, negatively affects its rate of adoption. Although complexity was not mentioned explicitly by interviewees as a barrier to web adoption, it was apparent from some comments that it was an issue that affected the adoption decision. It is worth mentioning that this factor is particularly relevant to non-adopters. The marketing manager of Blue Coast Tours said that

*“Although we know that the web is placing a threat on our existence, we don’t know how to cope with this web trend and don’t see how we can capture benefits.”*

Other non-adopters mentioned that they had a problem of employees’ skills and IT knowledge and that they think that this problem affected their decision to not adopt the web. They mentioned that most of their employees do not have reasonable background on how to use a computer to start with, and a large number of them do not have the appropriate experience required to market tourism products not only electronically but also physically. Thus the complexity associated with understanding and use of computers and the web seemed to act as a barrier to adoption by these companies.

On the contrary, complexity did not appear to be a barrier to adoption for simple and interactive adopters as their employees had the necessary IT knowledge and skills needed to provide tourism services on the web. The general manager of Amigo Tours mentioned that in terms of operating the web site and dealing with it beside the current classical system, the employees’ experience and IT knowledge has made that possible and thus they faced no problems or complexities with that. Moreover, the general manager of Creative Travel explained that in updating the web site, the experience of the company’s employees plays an important role in providing more sophisticated and interactive services over time. These results are in line with the literature that showed that a negative relationship exists between complexity and innovation adoption (Lockett and Littler, 1997; Houghton and Winklhofer, 2002). These results are also consistent with the

hypothesis that there is a negative relationship between complexity and the degree of web adoption.

### ***Trialability***

Rogers (2003, p.258) defines trialability as “the degree to which an innovation can be experimented on a limited basis.” According to him, the trialability of an innovation, as perceived by members of a social system, positively affects its rate of adoption. Trialability was not explicitly mentioned by any of the three groups as a factor that affected web adoption. This maybe due to the specific nature of the innovation being a service innovation that can not be easily tried on a partial basis. However, it is not totally impossible to try the web since the web for example can be used for communication only short of conducting complete online transactions and this is an example of trying it partially. This is actually the case of most travel agents in Egypt since they use the web for information provision in the first place and only a few conduct online payments.

*“It is possible to market tourism products over the web but one barrier lies in the impossibility of carrying out a complete transaction since online payment is not yet possible.”(Egyptian American Tours; simple adopter).*

This implicitly indicates that adopters are actually trying the web in parts in that way. The current status of most travel agents in Egypt (including interviewees) who use the web for information provision without conducting online payment indicate that trying the web in parts had an influence on these companies’ adoption decision. This matches the hypothesis on trialability that expects a positive relationship between trialability and the degree of web adoption. This is also somehow in line with the literature that indicates that a positive relationship exists between trialability and innovation adoption (Black et al., 2001).

### ***Perceived risk***

Perceived risk may reflect the risk of error associated with using the innovation or security issues related to the innovation (Lockett & Littler, 1997). For the three groups of

companies, perceived risk associated with conducting online payment transactions seemed to be a main concern. According to the interviewees, there is still a lack of trust in the web as a medium to conduct payment transactions. The marketing manager of Blue Coast Tours said,

*“We are afraid that after we ask our customers to send their credit card information on the web and we withdraw the agreed amount from their accounts, that hackers would access this information and withdraw money from the customers’ accounts and in this case our company will be held accountable.....we don’t want to put ourselves in such a situation since this will affect company image and will result in financial loss by the company.”*

The problem of conducting online payment seems to be augmented in a country like Egypt because banks are not willing to take part in securing the process for either the company or the customer.

*“The commissions are very high making it a costly process. In addition banks are not willing to take the risk to handle this process due to the limited number of web users actually willing to make an online payment. Bank reps told me that they can’t go through something that is risky without doing a risk analysis for it and this analysis requires adequate volume of transactions which is not the case on the web. Thus because web use in Egypt is still very limited and still at an early level as well as the number of tourists who come through it is still small, the risk factor is too high.”(Intoegypt; interactive adopter).*

*“The inability to conduct a complete transaction over the web due to tourists’ lack of trust in providing their credit card information especially when interacting with a travel agent from the Middle East is a main barrier to web adoption. The high political and economic unrest in the region resulted in fear to conduct any financial transactions over the net” (Amigo Tours; simple adopter).*

Highlighting the problem of perceived risk, the general manager of Champion Tours mentioned that one of the main barriers to web adoption is the problem of online payment and the security aspects related to it. According to him,

*“A large number of our tourists do not prefer to send their credit card information over the mail; they prefer to pay when they arrive at the destination....Although we are operating solely on the net, tour packages reservation and payment occur at a secondary level via e-mails and not directly online via the web.”*

Whereas this factor acted as a barrier to adoption by non-adopters, the case was different for simple and interactive adopters who tried to find a way around this problem by postponing payment until the tourist comes or by resorting to other means of payment such as bank transfer. They all agreed that up till now, any holiday booking transaction on the web has to be followed by an offline step whereby the customer sends his credit card information either by mail or fax or decides to make a bank transfer since no complete transaction can be conducted on the web up till now.

In addition to the risk associated with the security of online payment transactions, another type of risk pertinent to travel agents in Egypt and mentioned by the three groups, emerged from the interviews discussions. This is the risk of losing business coming through tour operators as a result of an expected conflict with these tour operators. Travel agents expect that if they use the web to directly reach their customers and post prices over the web, they would be in conflict with their tour operators in Europe and the States who bring the bulk of the business to the region. This conflict is expected because most travel agents in Egypt do not do the actual marketing for their tourism services by themselves, they basically do the selling part, i.e. sell the tourism service or execute the program. Thus they effectively act as brokers for tour operators by supplying them with travel programs and packages who in turn do the actual marketing for them In return for this, tour operators are given favourable prices by travel agents on tour programs that they add a mark-up on and then market to customers. By using the web, travel agents in Egypt would be competing with their tour operators since they will be directly reaching

customers and at the same time they would not know which prices to post on the web. According to the G.M. of Touring Club of Egypt,

*“We are afraid to develop a web site via which we will be able to reach customers directly and will have to post prices on. We can not post the same prices we give to our tour operators on the site, we have to post higher prices or else tour operators could retaliate and we would lose a bulk of the business brought through tour operators to something that is not yet guaranteed in terms of how much business it will generate to the company.”*

This outcome is in line with Houghton and Winklhofer’s (2004) exploratory study on exporting SMEs in the UK who found that these small businesses resisted adoption of ecommerce in order to avoid conflict with their distributors. They found that conflict could be generated through publishing of prices on web sites, any intentions of selling via the web site and the level of involvement that the distributors have in developing these web sites. They found that maintaining good export channel relationships and the dependence of traditional export channel structures were important reasons behind non-adoption. Whereas this factor has acted as a barrier to web adoption by non-adopters, this wasn’t the case for simple adopters who showed varying views in this issue. The general manager of Champion Tours mentioned that one of the main reasons why he decided to operate solely on the web was not to submit to the rules and conditions of any tour operator and to be free to operate in the way he prefers.

*“The tour operator takes most of the profit for himself and gives the travel agent peanuts. In addition all tour operators pay travel agents on credit claiming that they will only pay after the tourists have come back from the destination and after they guarantee that the tour program has been implemented as previously agreed upon. I do not accept to work in this way and that is why I decided to develop my business only on the web without any reliance on physical methods.”*

A different view was provided by the G.M. of Spring Tours who explained that dealing with tour operators is a must and will continue because they bring the bulk of the business to the company and also the number of customers coming via the web is marginal if compared to traditional methods of doing business. He thinks that both systems should work in parallel without a problem since the nature of customers targeted by each medium, according to him, is different. Customers coming via the web are singles who are more interested in individualized tour programs whereas those coming via tour operators are groups who are more interested in classical standardized programs. Interactive adopters, similar to simple adopters showed varying views in this issue. According to the general manager of Intoegypt,

*“The web is one way to get out of the control of the tour operator who takes most of the profit for himself and leaves to the travel agent only a marginal share of the profit. Through the web you can directly access customers and market to them your product without having to rely on a tour operator. Of course, there is a risk involved in not being able to get all the volume that the tour operator provides and in having to deal with all marketing aspects that were done by the operator, but in the end you will get all the profit for yourself.”*

Contrary to this view were the opinions provided by the top management of both Experience Egypt and Creative Travel who explained that they do not think that the web will replace the offline work with tour operators as they think that the tour operator will develop for himself creative ways of conducting business in this new medium and thus will remain important to the travel agent.

To conclude, although simple and interactive adopters could foresee perceived risks associated with web adoption, these risks did not hinder their decision to adopt the web. They tried to find ways to overcome these perceived risks but they still think that these risks are main barriers for web adoption by travel agents in Egypt. It is also obvious from the interviews that the perceived risk associated with web adoption consists of two different types of risks that are financial risk or risk on online payment and relationship

risk or risk of conflict with tour operators. These results are in line with the literature that showed that a negative relationship exists between perceived risk and innovation adoption (Doherty et al.,2003; Lockett and Littler, 1997).

To sum up the discussion on innovation attributes, it is necessary to mention that the results of the qualitative work provided some evidence to support the key hypotheses proposed in chapter 4. Interviews discussions showed that relative advantage, compatibility and observability and trialability positively affected the degree of web adoption decisions of travel agents in the sample, while complexity and perceived risk both had negative effect on the degree of web adoption. These results also match previous literature results on perceived innovation attributes. The following section discusses the qualitative interviews results on factors under firm resources and their effect on Web adoption.

#### **8.4.2 Firm Resources**

Moving on to firm resources and in line with the Resource-based view of the firm, the following factors have been studied in the qualitative work done on travel agents.

##### *Company size*

As mentioned in chapter 4, size reflects the resources owned by the company being financial and human. Similar to previous innovation adoption research results that showed variability in terms of the effect of size on innovation adoption, the results of the interviews also showed mixed opinions among the three groups of companies regarding the effect of size on web adoption.

The marketing manager of Amin Tours, for example, mentioned that his company has recently faced a down scaling of its operations due to financial problems and thus they don't want to assume any extra cost to adopt the web. The marketing manager of Blue Coast Tours added that,

*“The web is a luxury that only large firms can afford to have because they possess the needed resources. As for small companies it is a financial burden especially that the return expected from it is marginal until now.”*

Thus obviously these companies saw that their small size negatively affected web adoption. On the contrary, some small simple and interactive adopters mentioned that because of their small size they had the flexibility to adopt the web because they did not have the rigidities and fixed structures of large organizations (Champion Tours and Intoegypt). It could be argued however that what facilitated adoption in this case related more to flexibility rather than size. These companies may have had the flexibility in terms of having the required experience and structure needed to adopt the Web. So their adoption decision was not because they are small in size but because they are more flexible. Additionally, some large simple adopters also mentioned that their large size and their human and financial resources have facilitated their web adoption.

*“Being a big company with large volume of transactions, the cost of developing the web site did not represent any burden on the company in terms of money invested in it”.*(Spring Tours; simple adopter).

*“The web site was developed in-house by company employees who are qualified in terms of IT knowledge and travel experience.”* ”. (Spring Tours; simple adopter).

Therefore, it appears that there is some consensus among interviewees’ concerning the effect of size on web adoption. It is important to note however that most of the travel companies operating in Egypt fall under small and medium size companies. Based on this sample, adopters seemed to be larger. Although most travel companies are SMEs, the bigger ones of these are more likely to adopt the Web due to the availability of more resources within these companies. Thus, in line with previous literature that showed that a positive relationship exists between size and innovation adoption (Malhotra and Singh, 2007; Harrison and Waite, 2005) and in line with the hypothesis, there is evidence that a positive relationship exists between size and the degree of Web adoption.

### ***Employees IT knowledge***

From the interviews discussions, it was possible to identify that the IT background of management or employees acted as an influence on web adoption. This IT background reflects the previous experience with computer use as well as the experience related to how to promote tourism services on the web. While non-adopters mentioned that they have a problem of quality of employees in terms of skills and abilities, simple and interactive adopters mentioned that it was through the knowledge and skills of their employees that they were able to design a web site to promote their services.

*“The web site was developed in-house by company employees who are qualified in terms of IT knowledge and travel experience” (Egyptian American Tours; simple adopter)*

Interactive adopters seemed to place more emphasis on this issue than simple adopters though. Managers of interactive adopters mentioned that providing advanced travel services on the web such as virtual tours, newsletters, e-cards, etc. was only made possible by their highly qualified employees who have command of both the IT required as well as the needed tourism experience and education. According to the marketing manager of Experience Egypt,

*“Our employees have the travel and IT related experience required to develop a satisfactory web site and thus we saw no need to rely on an outside company”*

These results are in line with the hypothesis proposed in chapter four that says that a positive relationship is expected to exist between Employees IT knowledge and the degree of Web adoption. They are also in line with the literature that found that a positive relationship exists between employees IT knowledge and innovation adoption (Thong, 1999; Houghton and Winklhofer, 2002).

### *Marketing capabilities within the company*

Marketing capabilities refer to the integrative processes designed to apply the collective knowledge, skills and resources of the firm to the market-related needs of the business, enabling the firm to add value to its goods and services and to meet competitive demands (Day, 1994). Interview discussions showed that besides IT knowledge, know-how related to marketing on the web was an important factor that affected the adoption/non-adoption decision. This is knowledge within the organization relevant to developing, advertising and distributing a tourism service over the web. It involves thinking and developing new ideas related to marketing on the web.

Whereas simple and interactive adopters mentioned that both their management and employees' know-how related to marketing on the web acted as a facilitator to web adoption, non-adopters mentioned that this acted as a barrier to them. This suggests that there is a limited level of awareness among non-adopters related to marketing travel services over the web.

*“We in Egypt do not have the required experience to market a highly intangible service like tourism and a destination as a whole on the web” (Creative International Travel; interactive adopter).*

This was what the G.M. of Creative Travel International said while explaining the sector's barriers to web adoption. He further explained that his company has a dedicated staff whose task is how to think of new ideas and add new features to the web site on an ongoing basis. The G.M. of Intoegypt added that ideas such as virtual tours, newsletters, e-cards and others were developed through internal brainstorming by both management and employees to come up with new ideas that would attract the visitor to the web site. Adding to this, the G.M. of Spring Tours said,

*“Our employees are dedicated to discovering all what is new in the using the web in the travel industry” (Spring Tours; simple adopter).*

Contrary to these views were those of non-adopters who seemed to have no clear understanding of what can be provided on the web site if it is to be developed and how the web site can be used to attract tourists and how to market for travel services via the web site.

*“We are aware that the web is placing a threat on our existence but we do not know how we can cope with it, how to market our services on it and how to capture benefits.” (Blue Coast Tours; non-adopter).*

These results match previous literature results that showed that a positive relationship exists between marketing capabilities and innovation adoption (Poon and McPherson, 2005; Weerawardena, 2003). They also match the hypothesis proposed in chapter four which expects a positive relationship to exist between marketing capabilities within the company and the degree of web adoption.

### ***Organizational learning***

As discussed in chapter 4, innovation is closely related to learning orientation. Four components of learning orientation are commitment to learning, shared vision, open-mindedness and inter-organizational knowledge sharing (Calantone et al., 2002). It was obvious from the interviews that simple and interactive adopters' managements were open to change and enthusiastic about the web and about learning all what is related to it and its use in their industry.

*“We had the IT background but required a lot of self-learning to develop an adequate level of travel information since most of us did not have travel education as a background”, (Intoegypt; interactive adopter).*

Adding to this, the marketing manager of Experience Egypt mentioned that they continuously keep an eye on all what is new in their industry and try to learn about new techniques used to attract travellers. Although not explicitly mentioned by simple adopters as interactive adopters, the interview discussions suggested that management of

these companies strongly encouraged learning more about the web and its use in the travel industry and were keen to achieve benefits from using it.

*“I have a strong internal drive and interest to learn about this new medium and understand more about the opportunities it provides to the travel industry.”(Champion Tours; simple adopter).*

Whereas simple and interactive adopters showed an interest and encouraged their employees to learn more about the web and its use in the tourism industry, it was obvious that non-adopters, on the contrary, were not interested and did not encourage any learning related to the web in their organizations. The marketing manager of Al Wadi Tours mentioned that introducing the web will require investing in training the employees on how they can use it as a marketing tool for tourism services and there is no time for that given the current workload. Additionally, there seemed to be a resistance to any change that could be brought about due to the introduction of the web to their business. They were satisfied with current ways of doing business and did not see a pressing need to make a change.

These results match previous literature results that showed that a positive relationship exists between organizational learning and innovation adoption (Akgun et al., 2007; Lin, 2008). They also match the hypothesis proposed in chapter four that expects a positive relationship to exist between a positive orientation toward organizational learning and the degree of web adoption.

### ***Market orientation***

The interviews discussions showed that whereas simple and interactive adopters were externally focused in terms of closely watching the local and international competition as well as targeting customers from all over the world, non-adopters were less externally focused and had low awareness of what competitors are doing. Two issues that non-adopters mentioned that might have contributed to this lack of market focus are related to these companies line of business and nature of target customers. Some non-adopters

(Blue Coast Tours and Amin Tours) focus basically on religious tours (Hajj/Omra) and Coptic Cairo tours. The marketing manager of Amin Tours explained that

*“Hajj and Omra do not require availability on the web to attract tourists since these religious tours are done anyways without a need to market for them.”*

In addition to the company’s line of business, the managers of Al Wadi Tours, Blue Coast Tours and Amin Tours mentioned that because they mainly target tourists from the Gulf area, who already come to Egypt anyway, they don’t need to do marketing to them. According to Blue Coast Tours marketing manager,

*“The main reason why we don’t have a web site is that we do not believe that we need one because most of our target customers come from the gulf area through personal contacts and these already know enough information about Egypt and don’t need the web to come. The number of tourists coming from Europe or the states is very limited in comparison to those from the gulf, and they are not the main focus of the company”*,

Simple and interactive adopters, on the other hand, showed more market orientation and high level of awareness of the competition. “An important reason why we adopted the web is to cope with world competition and world pattern. Travelling to attend international travel events has helped provide me with experience and exposure to the idea of the web, a matter that definitely had an effect on my adoption decision”, said the general manager of Champion Tours. Adding to this, the general manager of Spring Tours said,

*“We have staff dedicated to observe competitors steps taken in this field and to check their web sites to see the latest that they have achieved. When we find a good idea implemented by another company, we imitate it. So we look at competition to gather new ideas and to see what others are doing.”*

The general manager of Creative Travel mentioned that international competition had an important role in influencing the web adoption decision by the company. The company observed what international competitors have done on their web sites and also observed international statistics showing the revenues generated from the online industry as a whole.

*“This definitely encouraged our decision to adopt the web.”*

These results provide evidence that having an external focus and watching competitors' steps had a positive effect on the decision to adopt the web. On the other hand, a lack of awareness of the competition and world trend had a negative effect on the decision to adopt the web. These results closely match the hypothesis proposed in chapter four which expect a positive relationship to exist between market orientation and web adoption. They are also in line with previous literature that showed that a positive relationship exists between market orientation and innovation adoption (Leskovar-Spacapan and Bastic, 2007; Salavou et al., 2004).

To sum up the discussion on the effect of firm resources on web adoption, it is necessary to mention that the results of the qualitative work provided useful new insights about the relationship between firm resources and the degree of web adoption. Specifically, the interviews suggest that there is a positive relation between each of company size, employees' IT Knowledge, marketing capabilities, organizational learning and market orientation and the degree of web adoption. As mentioned earlier, market orientation, organizational learning and marketing capabilities, in particular, have not been extensively tested in literature and thus this research provides new insights in relation to these factors. Additionally, the results here confirm the relationships proposed in the conceptual model between the five factors under firm resources and the degree of web adoption, and match previous literature results on the relationship between these factors and innovation adoption.

### **8.4.3 Individual factors**

#### ***Top management support***

The interviews showed that while top management of non-adopters either did not have the level of awareness required to understand the opportunities offered by the web to their business or did not have the willingness or interest to invest in this new medium, top management of both simple and interactive adopters had an adequate level of awareness of the opportunities offered by the web as well as a strong belief in its importance to their business. It was obvious that they strongly supported the adoption decision. The following are some contrasting views mentioned by the three groups in this regard.

*“The web is a must nowadays if travel companies want to operate in an effective way and to benefit from interacting directly with their customers” (National Travel Service; simple adopter).*

In line with this view, an interactive adopter mentioned that:

*“The web is an ideal marketing tool for a travel company to provide accurate and complete information about Egypt as a destination and the services provided by the company to an international customer. Thus it would help in enhancing the image of not only the company but also the country as a whole which is something our company is keen to do” (Creative Travel; interactive adopter).*

Contrary to that a non-adopter mentioned that:

*“The web will be a waste of time since there is no expectation that a large number of customers can come through it, in addition, there is no interest in taking the risk of investing in the web while there is low expected return” (Amin Tours; non-adopter).*

*“We have a problem of old generation thinking among management of companies that is against exploring new ideas.” (Al Wadi Tours; non-adopter)*

It is obvious from these contrasting views that the awareness of top management and their support to the idea of adopting the web had an important influence on the adoption decision. Top management support is important for creating a supportive climate and providing the required resources for the adoption of new technology (Premkumar & Roberts, 1999). Schillewaert et al. (2005) found that supervisors have an important effect on the adoption behaviour of their subordinates in their study on IT adoption by sales force. Thus in line with previous literature results (Bengtsson et al., 2007; Bruque and Moyano, 2007) and with the hypothesis proposed in chapter four, there is evidence that top management support will be positively related to the degree of web adoption.

### *Attitude toward change*

According to Rogers (2003, p.290), earlier adopters of innovations have more favourable attitude toward change than later adopters. Innovators are thought to have more favourable attitude toward change, are more dynamic and more innovative. They are more involved in interpersonal communication and are more exposed to mass media.

Although decision makers within the non-adopters realized that the web is placing a threat on their existence in the near future, they had a general resistance toward change. This resistance was either due to the fact that they were satisfied with the current way of doing work and didn't want to spend time, effort or money to make the required change or because they were afraid of the consequences of this change. The marketing manager of Amin Tours for example, mentioned that the company's employees were afraid of losing their jobs as a result of most of the work being automated. They could not foresee a clear role for them within this new medium and thus highly resisted it to safeguard their current jobs. The marketing manager of Blue Coast Tours added that,

*“We in Egypt usually have a cultural resistance to new ideas and don't consider new ways of doing business unless we're pushed to, so as long as we don't face serious problems without the web we will not consider adopting it in the near future.”*

While these were the views of non-adopters, the situation was different for simple adopters.

*“The web is a must nowadays if travel companies want to operate in an effective way and to benefit from interacting directly with their customers,” (National Travel Service)*

*“Our company has been a pioneer in web adoption; we were among the first companies that developed a web site and started operating on the net” (Spring Tours)*

Interactive adopters, similar to simple adopters were open to new ideas and change. They mentioned the following opinions regarding being open to change.

*“Unless travel companies are willing to explore new ideas that have proved to be successful on an international scale like the web, their existence will be threatened since the gap between them and adopter companies will widen everyday.”(Experience Egypt)*

*“The international exposure and continuous tracking by management of what is new in the travel industry world wide have been main reasons behind the adoption of the web by the company.”(Creative Travel)*

These results are in line with literature results that showed that a positive relationship exists between attitude of the decision maker toward change and innovation adoption (Tan et al., 2007; Thong, 1999). They are also in line with the proposed hypothesis that expects a positive relationship to exist between management’s attitude toward change and the degree of web adoption.

### ***Response to risk***

Response to risk refers to the attitude of the decision maker toward the risks associated with the adoption of an innovation. It is worth mentioning that different names have been used interchangeably in literature to refer to the same idea underlying this construct which is the ability or willingness of firms to take risks associated with web adoption. Wan et al. (2005) used “willingness to take risks”, Yu (2006) used “risk averse attitudes of CEOs”, and Tabak and Barr (1996) used “risk propensity” of decision makers, Sultan

and Chan (2000) used “response to risk” and Lockett and Littler (1997) used “venturesomeness”. In line with the study of Sultan and Chan (2000) this research will use the term “response to risk” to refer to the willingness of firms to take risks associated with web adoption. It is important to acknowledge however that all the different terms used in literature, as mentioned above, refer to the same construct.

The two types of risks that were mentioned by respondents as being associated with web adoption are security aspects of online payment transactions and the risk of losing business as a result of conflict with tour operators. Non-adopter companies viewed these types of risks as major and influential on their non-adoption decision. They had a conservative response to risk and did not want to be among the first to explore how to deal with these types of risks. They wanted to wait and see what other companies that adopt the web will do to overcome these risks. According to the G.M. of Touring Club of Egypt,

*“Being a new medium there were fears related to investing in it.”*

Moreover, the marketing managers of Al Wadi Tours and Blue Coast Tours both had concerns related to the security of online payment transactions and how these transactions could be guaranteed for both the company and the customer so as not to ruin the relationship between both and not to affect the image of the company and cause financial losses to it in case of hackers.

While non-adopters had a passive response toward risk, simple and interactive adopters showed a more positive response. The general manager of Amigo Tours explained how they got around the online payment problem by asking the tourists, once they’ve confirmed their tour packages choices and agreed on prices, to send via email or fax their credit card information to the travel agent and indicate that they accept that the travel agent withdraws the agreed upon amount as well as sign this letter.

As for the fear of conflict with tour operators, some simple and interactive adopters (Champion Tours and Intoegypt) chose to operate solely on the web without relying on traditional marketing methods to avoid being under the control of an operator, others(Spring tours and Experience Egypt) were convinced that the two systems could work in parallel without a problem since both are important and yet another adopter(National Travel Service) explained that tour operators will find for themselves new avenues of making profit via the web. No matter what choice they had made, it is obvious that simple and interactive adopters responded more positively to the risk associated with web adoption.

These results are in line with previous literature that showed that a positive relationship exists between the decision maker's response to risk and innovation adoption (Wan et al, 2005; Sultan and Chan, 2000). They also match the hypothesis proposed in chapter four and that expects a positive relationship to exist between response to risk and web adoption.

Similar to both innovation attributes and firm resources, the results of the qualitative work also support the relationship between individual factors and the degree of web adoption. All three factors being top management support, attitude toward change and response to risk were found to have a positive relationship with the degree of web adoption.

## **8.5 Conclusion**

This chapter presented the results of the evaluation of the hypotheses developed in chapter four, based on the qualitative work conducted on Egyptian travel agents, in order to examine the researched relationships in this study. This qualitative work served the triangulation approach applied in this research since it is used as one of two different ways (qualitative and quantitative) to test the proposed model in this research. Although the sample was small, a thematic analysis of the interviews provided outline support for the combined influence of perceived attributes of the innovation, firm resources and individual management factors on the adoption of the web for marketing purposes among travel agents in Egypt..

Having discussed the qualitative work and how it was used to test the model proposed in this study, the next chapters will quantitatively test these hypothesized relationships. The purpose of utilizing two different approaches of examining data, both qualitatively and quantitatively is to provide a stronger support for the hypotheses of the research.

# **Chapter Nine**

## **Analysis of Empirical Results: Methodological Considerations**

### **9.1 Introduction**

The purpose of this chapter is to provide preliminary insights about the survey data through descriptive analysis and to test the internal validity and reliability of the measurement scale through factor analysis and Cronbach alpha. The chapter will provide a general overview of the sample in terms of characteristics of survey respondents through frequencies analysis. Following that descriptive analysis of the variables affecting web adoption will be presented. A test for significant differences between adopters and non-adopters means will follow. Then the chapter will provide a detailed discussion of the validity and reliability tests conducted on the measurement scale being factor analysis and Cronbach Alpha. The chapter concludes by providing a link between the findings of this chapter and the objectives of the research.

### **9.2 Data collection process**

The data collection process was not without difficulties. As discussed in chapter six, the main problems encountered included difficulty in taking an appointment, uncooperative attitude and lack of interest among respondents and high turnover of students participating in the research. These problems affected the sample size as only 185 completed questionnaires could be secured out of the 230 companies available. It is worth noting however, that most of the companies who did not participate either could not be reached due to very uncooperative attitude from respondents or did not agree to participate. 15 out of the 185 questionnaires were removed for a number of reasons including illegible questionnaires, inconsistent responses and incorrect information. The remaining usable 170 questionnaires consisted of 150 adopters and only 20 non-adopters. Due to the small number of non-adopters, it was decided to go back to the sample frame

specifically to increase the number of non-adopters. A further 8 respondents agreed to participate resulting into a final sample of 178 cases including 150 adopters and 28 non-adopters.

### **9.3 General Overview of the Cases**

#### **Adopters versus Non-adopters**

Travel agents' adoption of the web is measured in different ways. First, two simple and crude measures were used, namely, do you have a web site or not /do you sell via the web or not. Second, a slightly more sophisticated measure which is how much do you sell on the web. This measures the degree of adoption by measuring the extent to which these companies are actually engaged over the web with those highly selling being considered highly engaged. It is worth noting that the approach used to measure the extent of adoption here is based on whether companies sell or do not sell on the web. Those who sell online are classified as sophisticated adopters whereas those who do not sell online are classified as simple adopters. Thus the basis for classification here is whether companies use the web for communication only or also for transactions. This is a slightly cruder operationalization of the adoption construct from the qualitative work that relied on features present on travel agents' websites to determine whether these companies are simple or sophisticated. As mentioned in chapter 8, the small sample nature of the qualitative study and the detailed information already collected in the content analysis allowed the qualitative analysis to use a more complex method of classifying adoption based on detail about specific features present on these companies' websites. For the quantitative work, it was not possible to access that level of detail through the questionnaire and thus a simpler operationalization was used. However, these two approaches overlap substantially and this enables triangulation to be used, i.e. those who are simple adopters are essentially using the web for basic promotion while those who are sophisticated adopters are using the web for more complex promotion and/or distribution.

The questionnaire starts with a question on whether respondents own or do not own a web site. This is a dichotomous variable indicating mere adoption versus non-adoption.

The 178 collected cases include 150 adopters representing 84.3% of the cases and 28 non-adopters representing 15.7% as shown in the following table.

**Table (9.1): Representation of Adoption Status in the Sample**

	Adoption Status (web site or not)		Total
	Adopters	Non-adopters	
Count	150	28	178
Percent	84.3	15.7	100

As mentioned in the methodology chapter, this sample is a judgmental sample that was chosen according to certain criteria. One of these criteria is the line of business of the tourism company whereby only companies doing inbound tourism and thus focusing on foreign tourists as their main target customers were included as part of the sample. This focus on inbound tourism justifies this large number of adopters as compared to non-adopters since the majority of tourism companies found that it was important to develop a web site to be able to reach and market their services to their target customers in different locations of the world. The fewer ones who do inbound tourism but still did not adopt the web, are either still adopting the traditional ways of conducting travel business or are in the process of becoming aware of or ready for adopting the web. It is worth noting that while a judgemental sample was necessary of the purpose of this research, it places some limitations in terms of the generalizability of the results.

### **Sales on the Web**

In order to determine the level of web adoption by travel companies, a question was asked to differentiate between those companies who only own a web site but do not actually sell on the web and those who do sell on the web. For those who sell on the web, another question was asked in order to determine the percentage of their travel sales that goes through the web. The minimum percent of sales on the web among adopters is 1% and the maximum is 60%. The following tables illustrate the status on travel sales on the web among the respondent travel companies as well as the percentage sales on the web among those companies who actually do selling on the web.

**Table 9.2 (a): Sales on Web Status within Sample**

	Sales on the Web Status			Total
	Selling on Web	Not selling on Web	Selling but refused to answer	
Count	68	99	11	178
Percent	38.2	55.6	6.2	100

**Table 9.2 (b): Representation of Percentage Sales on Web within Adopters**

	Percent Sales on the Web						Total
	1-10	11-20	21-30	31-40	41-50	51-60	
Count	16	28	8	6	5	5	68
Percent	23.5	41.2	11.8	8.8	7.4	7.4	100
Mean							17.71

Only 68 companies representing 38.2 percent of the cases gave responses to what percent of their travel sales goes via the web. The remaining 110 cases include 99 companies who do not sell over the web either because they are adopters but do not sell online or because they are non-adopters. These 99 companies represent 55.6% of the cases. The remaining 11 companies or 6.2% of the cases are companies who do sell on the web but refused to give a response to this question either because they said it was confidential or because they felt uncomfortable about giving out sales information.

This small number of companies who sell of the web is justified by the fact that the web is a relatively new medium for conducting travel business in Egypt. Thus even though the majority of companies are adopters, most of these companies are recent adopters of the web and are not yet fully knowledgeable of all aspects related to conducting travel business via this new medium. Additionally, fears of online payment security and lack of support from the banking system were mentioned by many companies as obstacles to selling online.

The mean value of sales on the web is 17.71 which is a low value suggesting that for those few companies who sell on the web; their sales on the web represent only a small percentage of their travel sales. Additionally, there is a very high variability in the

percentage of online sales among these companies represented by the standard deviation which is 14.275. Percent sales on the web range from 1% to 60% which is a wide range. A large number of these companies representing 41.2% mentioned that their sales on the web represent from 11-20% of their travel sales. The remaining companies mentioned variable responses as to their percent sales on the web. This variability might indicate that there is a large potential to sell on the web but companies do not see it and thus do not apply it. It might also indicate that there is currently ineffective use of the web resulting in these low values of both numbers of companies who sell on the web and percentage sales on the web. It is worth noting however, that the majority of these companies representing 76.5% sell no more than 30% of their travel sales over the web.

### **Sales through Different Channels**

In order to obtain information about the different channels used by Egyptian travel agents to sell their travel services, the questionnaire included an open-ended question that asked respondents to state the percentage of their travel sales that goes through different channels. The question also aimed to determine whether there is diversification in the channels used by travel agents or there is reliance on one or two channels only. The following table illustrates the means and standard deviations of sales through different channels via the travel companies.

**Table (9.3): Representation of Sales via Different Channels within Sample**

<b>Sales via different channels</b>	<b>Mean</b>	<b>St. Dev.</b>
Customers	24.1	28.2
Tour Operators	51.2	35.6
Hotels	3.0	9.0
Partners	16.1	26.2
Others	5.6	13.3

170 out of the 178 companies gave responses to the question on what percent of their sales goes through the different channels such as tour operators, hotels, partners, individual customers or others. As can be seen from the above table, the most established and most highly used channel for travel sales is the tour operator as it has the highest

mean of 51.2. This is consistent with the fact that the traditional way of doing travel business in Egypt has and is still heavily dependent of the tour operator in the foreign country. The travel agent here in Egypt relies on the tour operator for marketing for the destination and bringing the tourist. The travel agent here, in effect acts only as a sales agent. This is the traditional way of doing travel business that is supposed to change if the travel agent in Egypt uses the web to reach the customer abroad. What the results indicate, however is that the current status is still based on the traditional way of doing travel business. The second highly used channel is the sales to individual customers as its mean is 24.1. This suggests that a number of companies sell directly to individual customers. Sales through partners come right after sales to individual customers as its mean is 16.1. This suggests that a number of companies rely on travel partners in different markets to bring the customer for them. Sales through hotels and through other channels are low with means of 3.0 and 5.6 respectively. This indicates that hotels and other channels such as the web are not used as established channels for travel sales by travel agents in Egypt.

The standard deviations for all five channels are very high and even higher than the means. This indicates that within each channel, respondents gave highly varying answers on the percentage of their sales that goes through the channel. This high variability in responses further indicates that there is not one established channel for travel sales that most travel companies rely on.

## **Demographic Characteristics of the Sample**

### **Age of Travel Companies**

In order to obtain descriptive information about these companies, the questionnaire included a question on the date of establishment of these companies. These dates were compared against a benchmark (2007) in order to determine the age of these companies in number of years. Categories were created for these years as shown below. The age range of most Egyptian travel companies is between 20 and 30 years old and the sample has a mean of 21.47 and a standard deviation of 12.56. The following table sheds light on the age of travel companies in terms of number of years of establishment.

**Table (9.4): Age Range of Companies in Sample**

	<b>Age Range of Companies in number of years</b>							<b>Total</b>
	<b>Less than 11</b>	<b>11-20</b>	<b>21-30</b>	<b>31-40</b>	<b>41-50</b>	<b>51-60</b>	<b>More than 60</b>	
Count	41	42	60	22	7	4	2	178
Percent	23.0	23.6	33.7	12.4	4.0	2.2	1.1	100

### **Age of Web Site**

The questionnaire included a question on the date in which the web site was developed. These dates were compared against a benchmark (2007) in order to determine the age of these websites in number of years. Categories of these years were then created. The age range of web sites of most adopters is between 6 to 8 years old and the sample mean is 6.55 and the standard deviation is 3.519. The following table sheds light of the age of web sites of adopters in terms of number of years of development.

**Table (9.5): Age Range of Web sites Among Adopters**

	<b>Age of Web site in number of years</b>					<b>Total</b>
	<b>Less than 3</b>	<b>3-5</b>	<b>6-8</b>	<b>9-11</b>	<b>12-14</b>	
Count	16	47	53	18	16	150
Percent	10.7	31.3	35.3	12	10.7	100

### **Target Customers**

The questionnaire included a question on whether these companies focus on foreign tourists or Egyptian tourists or both. As mentioned earlier this sample consists of companies doing incoming tourism. As shown in the following table the 170 companies representing the sample either focus solely on foreign tourists, i.e.56.7% of the companies, or focus on both foreign and Egyptian tourists, i.e. 43.3%.

**Table (9.6): Target Customers of Travel Companies**

	<b>Foreign Tourists</b>	<b>Foreign and Local Tourists</b>	<b>Total</b>
Count	101	77	178
Percent	56.7	43.3	100

### **Method of Website development**

The questionnaire included a question on how travel companies developed their websites, whether in-house or through the aid of an external consultant or by relying on both methods.

**Table (9.7): Method of Website development Among Adopters**

	<b>In-house</b>	<b>External Consultant</b>	<b>Both</b>	<b>Total</b>
Count	24	51	75	150
Percent	16.0	34.0	50.0	100

As shown in the above table only a few travel companies representing 16% of the companies developed their websites in-house by relying on company employees. The rest of the companies either relied on an external consultant representing 34% of the companies or relied on both internal efforts as well as an external consultant, representing 50%.

## **9.4 Overall Descriptive Analysis of the Data**

### **Variable by Variable Analysis**

The following table is a summary of the descriptive analysis of the 178 cases of adopters and non-adopters in terms of the determinants of web adoption. For ease of interpretation, items have been aggregated to hypothesized constructs. Thus, each factor is an average of all statements measuring that factor. In order to determine whether there are differences among adopters and non-adopters with regard to web adoption factors, an independent-samples t-test was conducted to test for significant differences between the two groups' means as shown below.

It is worth mentioning here that although factor analysis has not been conducted prior to descriptive analysis, it is assumed that the concerned individual statements for each summated variable reflect an initially valid indicator of that variable. Such assumption is based on the conceptualization process grounded by the extensive literature review conducted and the two piloting stages of the questionnaire.

**Table (9.8): Descriptive Statistics for Factors Affecting Web Adoption by Adopters and Non-adopters**

Variable	Adopters		Non-adopters		Sig. (2-tailed) level of sig. 95%
	Mean	CV	Mean	CV	
Relative advantage	4.96	16.46	4.37	19.01	0.00
Compatibility	5.11	27.05	3.93	34.23	0.00
Complexity	4.39	31.76	4.98	34.15	0.07
Observability	4.39	34.39	3.89	32.31	0.10
Perceived risk	3.49	35.72	2.89	43.57	0.02
Employees IT knowledge	5.15	22.18	4.68	20.75	0.04
Marketing Capabilities	4.48	32.26	3.29	30.7	0.00
Organizational learning	5.94	16.07	5.69	19.13	0.22
Market Orientation	6.16	10.35	5.75	12.68	0.00
Top management support	5.97	16.26	3.7	36.37	0.00
Attitude toward change	5.19	14.49	4.39	16.53	0.00
Response to risk	5.86	14.41	5.12	17.56	0.00

## **A-Innovation Attributes**

### **1-Relative Advantage**

The mean value of relative advantage of web adopters is 4.96 and this represents a relatively high mean in the analyzed data. Additionally, the coefficient of variation of relative advantage is 16.46% which is relatively low in comparison with the other factors and suggests that there is a consensus among adopters as to the relative advantage of the web as a channel for marketing travel services. In other words, most of the adopters could recognize the relative advantage of the web. As for non-adopters, the mean of relative advantage is lower than that of adopters at 4.37 and the coefficient of variation is 19.01% also indicating that non-adopters' opinions are close to each other and that there is an agreement among them as to the relative advantage of the web.

It is worth noting that the mean value of non-adopters is not much lower than that of adopters. This indicates that although there is a significant difference between adopters and non-adopters in terms of perception of relative advantage of the web, this difference is not huge. This suggests that non-adopters do recognize that there are some advantages of web adoption but adopters' perception of these advantages is stronger. The coefficient of variation for non-adopters is 19.01% which represents a relatively low value in comparison with other factors' coefficients of variation indicating low variability in responses and further indicating that most non-adopters do realize the relative advantages of the web.

## **2- Compatibility**

The mean value of compatibility for adopters is 5.11 which is higher than that of non-adopters, whose mean value is 3.93. Additionally there is a significant difference between the two groups' means. This suggests that there is a big difference between adopters and non-adopters in terms of whether they perceive the web as being compatible or not with their current work. As for adopters web use is compatible with the way they like to work as well as with the different aspects of their work. As for non-adopters a mean value of 3.93 is lower than that of adopters suggesting that non-adopters do not see web use as being compatible with the way they want to work or with their current work systems. The coefficient of variation of adopters is 27.05% is lower than that of non-adopters at 34.23% indicating that there is more consensus among adopters' responses than non-adopters as to whether they see the web as being compatible or not with the way they want to conduct business.

## **3-Complexity**

The mean value of complexity for adopters is 4.39, which is lower than that of non-adopters whose mean is 4.98. The lower mean value of adopters suggests that they do not find major difficulty in using the web in marketing for travel services. Yet, this figure does not mean that they do not find any difficulty in using the web. As for non-adopters, the higher mean value suggests that non-adopters do find difficulty problems in using the

web. This might be due to the fact that the web has not been used in Egypt for a long time and thus there is not adequate awareness of the medium and how it is being used. However, it is worth noting that there is no significant difference between adopters and non-adopters means indicated by significance value of 0.07 suggesting that both adopters and non-adopters perceive web use as being complex. The coefficients of variation for adopters and non-adopters are 31.76% and 34.15% respectively. These are relatively high values in the analyzed data indicating a high variability in responses of both adopters and non-adopters as to whether they see the web as a complex medium for being used for marketing for travel services. This high variability may suggest that the web, being a relatively new medium in Egypt, is not fully used or understood. It also shows that there are varying opinions for both adopters and non-adopters as to the difficulty encountered in using the web, some finding it difficult and others not.

#### **4-Observability**

The mean value of observability for adopters is 4.39 which is not a relatively high value in the analyzed data. This indicates that adopters are not really seeing other companies making more travel business due to the web. This might be due to the fact that the web has not been used in the travel sector for a long time and thus it is not easy to see tangible gains realized from its use up till now. This value might also imply that adopters will continue using the web but are not likely to make more advanced use of it.

As for non-adopters, a mean value of 3.89 for observability is lower than that of adopters. It is worth noting, however, that there is no significant difference between both groups' means indicated by a significance value of 0.10. This suggests that there is no difference between adopters and non-adopters with regard to observing the web benefits reaped by other companies as a result of web adoption. The coefficients of variation of adopters and non-adopters are 34.39% of 32.31% respectively. These values are both high suggesting high variability among the responses of both groups with regard to this factor.

## 5-Trialability

The following tables illustrate the frequency analysis conducted on trialability. Trialability could be measured for adopters only as it was not relevant to non-adopters. Two statements were used to measure this factor and respondents were asked to give a yes or no response to these questions. The first questions asked respondents to indicate whether they have tried to market their travel services via popular web sites before developing their own and the second asked them to indicate whether they have gradually increased the number of pages on their web site after its launch. As for non-adopters the answers to these questions were no and these were thus recorded as zeros. It is worth noting that non-adopters could have answered “yes” to the first question but in practice they did not. Obviously, non-adopters have to answer “no” to the second question.

**Table 9.9 (a): Use of Popular sites**

Adoption Status		Trialability of Web sites		Total
		used popular web sites	did not use popular web sites	
Adopters	frequency	54	96	150
	<b>percent</b>	<b>36</b>	<b>64</b>	<b>100</b>
Non-adopters	frequency	0	28	28
	<b>percent</b>	<b>0</b>	<b>100</b>	<b>100</b>

**Table 9.9 (b): Web pages**

Adoption Status		Trialability of Web sites		Total
		gradually increased web pages	Did not increase web pages	
Adopters	Frequency	106	44	150
	<b>Percent</b>	<b>70.7</b>	<b>29.3</b>	<b>100</b>
Non-adopters	Frequency	0	28	28
	<b>Percent</b>	<b>0</b>	<b>100</b>	<b>100</b>

The frequency analysis conducted on trialability shows that the majority of adopters, 64% did not try to market their travel services through popular travel sites before developing their own websites. This might be because they did not want to incur costs of paying commission to these travel sites or because they were not aware of the existence of these

sites. The smaller percentage, 36% chose to use these popular sites first as a means to gauge the return expected from marketing on the web and whether it will result in more travel business or not.

As for the second aspect of trialability, the majority of adopters being 70.7% indicated that they made a gradual increase to their web sites number of pages whereby they started with few pages including the basic information on what they offer and then they started adding to it more information, services and thus more pages. A few adopters, 29.3% either said that they started with a few pages and did not add more to it or started with a complete website from their own point of view, including all travel information and also did not add to it afterwards.

### **6-Perceived Risk**

The mean value of perceived risk of adopters is relatively low as it is 3.491 with a coefficient of variation of 35.72%. This reflects adopters' belief in this new medium and their willingness to take calculated risk in order to realize more gains from its use in the travel business. It also indicates that adopters are more inclined to work independently through the web without complete reliance on the tour operator to acquire the customer. The mean value of perceived risk for non-adopters is lower than adopters as it is 2.89 with a coefficient of variation of 43.57% which is very high showing a large variation in responses, some respondents viewing it as risky and others not aware of what these risks are. Additionally, the difference between both groups' means is significant with a significance value of 0.02.

Although it was expected that adopters have lower perceived risk of web adoption than non-adopters, it may be that it is higher because adopters are now more aware of the risks associated with web adoption. Having adopted this medium they now are more familiar with these risks and are willing to take calculated risk in their adoption of this medium. As for non-adopters this lower figure might indicate lack of awareness of the risks related to web adoption.

## B-Firm Resources

### 1- Size

Company size is measured by number of employees. A question asked respondents to indicate whether the full time employees they have are less than 20, 20 to 50 or more than 50. The following table shows the frequency analysis conducted on this factor.

**Table (9.10): Company Size Range (Number of employees)**

		Size Range			Total
		less than 20	20-50	more than 50	
Adopters	Count	57	61	32	150
	Percent	38	40.7	21.3	100
Non-adopters	Count	14	14	0	28
	Percent	50	50	0	100

The frequency analysis on size was conducted separately on adopters and non-adopters. The above table illustrates this analysis. As for non-adopters, all 28 companies lie in the first two categories of size which are less than 20 and from 20-50 with no companies with more than 50 employees. 50% of the companies are in the less than 20 category and the 50% are in the 20-50 category. This indicates that all non-adopters are smaller companies. This might reflect that one of the reasons for their non-adoption might be the few resources that they possess. As for adopters, companies exist in all three categories with the majority, 40.7% lying in the 20-50 category. Following that 38% have less than 20 employees and 21.3% have more than 50 employees. These figures again show that the majority of adopters are SMEs with the larger number being medium sized companies. Few adopters are large companies. This might indicate that large companies do not have the flexibility required to fit their current systems with the new ways of doing business created by the web.

### 2- Employees IT Knowledge

The mean value of employees IT knowledge for adopters is 5.15 which is higher than that of non adopters whose mean value is 4.68. It is worth noting, however, that the mean value of non-adopters is not much lower than that of adopters. This indicates that although there is a significant difference between adopters and non-adopters in terms of

employees' IT knowledge, this difference is not huge. This suggests that both adopters and non-adopters have employees with knowledge in the computers and IT field but presence of this knowledge is focused on more by adopters than non-adopters. The coefficients of variation of employees' IT knowledge for adopters and non-adopters are 22.18% and 20.75% respectively indicating a low variability in responses.

### **3-Marketing Capabilities**

The mean value of marketing capabilities for adopters is 4.48 which is relatively low in comparison with other factors means. An important component of marketing on the web includes the ability to sell travel services online as well as offline which was not the case in most of the companies. Most of these adopters can only sell offline through tour operators with only few ones who can make online sales. This mean value indicates that adopters need to exert effort in understanding how to develop, promote and distribute their travel services over the web. As for non-adopters, the mean value of marketing capabilities is 3.29 which is lower than that of adopters. There is a significant difference between both groups' means suggesting that in comparison to adopters, non-adopters do not market their travel products over the web and thus do not have the know-how related to that. Exactly half of these non-adopters gave a neutral (4) response to this question. The coefficients of variation of adopters and non-adopters are 32.76% and 30.7% respectively indicating large variability in responses for this factor.

### **4-Organizational learning**

The mean value of organizational learning for adopters is 5.94 which is higher than that of non-adopters whose mean is 5.69. However, both means are relatively high in comparison to the other factors' means suggesting that both adopters and non-adopters are investing in their employees and that they believe in learning as a way for achieving competitive advantage and for continuous improvement of the organization. There is no significant difference between both groups means indicated by a significance value of 0.22 and further suggesting that there is no difference between adopters and non-adopters with regard to organizational learning. The coefficients of variation of adopters and non-

adopters are 16.07% and 19.13% respectively showing that all responses are close to the mean.

## **5-Market Orientation**

The mean values of market orientation for adopters and non-adopters are 6.17 and 5.75 respectively. These are both high values, although higher for adopters than non-adopters, indicating that for both groups there is a focus on understanding the market in terms of customers and competitors. As for adopters, this result is in line with their external focus in terms of seeing what other companies are doing in their web adoption initiatives and in terms of paying close attention to understanding customers' needs. As for non-adopters, this might be the case because all of them also do inbound tourism and thus they too focus on understanding their external market in the same sense. It is worth noting that there is a significant difference between adopters and non-adopters but this difference is not huge. As mentioned above, this suggests that both adopters and non-adopters do focus on understanding the external market but this focus is stronger for adopters. The coefficients of variation for adopters and non-adopters are 10.35% and 12.68% respectively which are relatively low values, indicating low variability in responses for both groups.

## **C- Individual Factors**

### **1-Top Management Support**

The mean value of top management support for adopters is 5.97 is higher than that of non-adopters whose mean value is 3.7. The higher mean value of adopters reflects management's belief in and support of web use in these companies. This value further suggests that top managers of adopters are aware of the importance and benefits of web use in the travel industry and thus have allocated adequate resources to developing the website for that purpose. As for non-adopters, the lower mean value at 3.7 suggests that in these companies managers are not yet aware of the benefits of website use in the travel industry and thus do not support the idea of using it. Additionally, it might also indicate that even though top managers in some of these companies support the idea of web use; they have not yet taken a decision to allocate enough resources to implement this idea.

There is a significant difference between adopters and non-adopters means suggesting that there is a big difference between adopters and non-adopters' managements in terms of the support given to the web adoption issue.

The coefficient of variation of adopters is 16.26% which is lower than that of non-adopters whose CV is 36.37% indicating a lower variability in responses for adopters. The higher CV of non-adopters might suggest that although some non-adopters' top managers are not supportive of the idea of web use in the travel industry, other non-adopters' managers do believe that the web is important but have not yet taken the decision to adopt it until now.

## **2-Attitude toward Change**

The mean value of adopters for attitude toward change is 5.19. This value is higher than that of non-adopters whose mean is 4.39 indicating that adopters have a positive attitude toward change and are willing to explore with new ideas such as the web. This value however could have been higher for adopters but it is obvious that general cultural resistance to new ideas such as the web that makes any change a generally slow process in Egypt. Being adopters, these companies are more interested to hear about the web and they believe that it has enhanced their lives but at the same time they still believe that there is generally a cultural resistance toward change in Egypt and that new ideas like the web will take a long time to become well established in terms of use within these companies. As for non-adopters, the lower mean value of 4.39 suggests that these companies apparently have a resistance toward web use in the travel industry, are not interested to hear about web developments and do not see that it has enhanced their lives. It is worth noting that the mean value of non-adopters is not much lower than that of adopters and this difference is significant. This suggests that although there is a significant difference between adopters and non-adopters in terms of attitude toward change, this difference is not huge. This suggests that adopters do have a resistance of change caused by the web but non-adopters' resistance of change is stronger. The coefficients of variation for adopters and non-adopters are low at 14.49% and 16.53% respectively indicating low variability in responses for this factor.

### **3-Response to Risk**

The mean value of response to risk for adopters is 5.86 which is higher than that of non adopters whose mean value is 5.12 and the difference between both is significant. This suggests that adopters are more risk takers when making decisions, are more comfortable with the changes caused by the web to the ways of doing travel work as well as see these changes as a challenge in the positive sense. This is consistent with the fact that they have willingly taken the risk of adopting the web. As for non-adopters, the mean value is lower at 5.12 showing that they are more conservative when making decisions and less comfortable about the changes the web has introduced to the ways of doing travel business. This is consistent with the fact that they have not adopted the web and even for the few of them who said that they believe the web is important for the travel industry, they have not taken the decision to adopt it. The coefficients of variation for adopters and non-adopters are low at 14.41% and 17.56% respectively.

Finally, as can be seen from the above table, there are significant differences between adopters and non-adopters in relation to all web adoption factors except for three factors that are complexity, observability and organizational learning. This result suggests that web adoption factors may have an effect on the adoption/non-adoption decision by travel companies. Although simple bivariate comparisons are useful, regression analysis in the next chapter provides a more systematic test of the hypotheses. As for the three factors for which no significant differences were found between the two groups, this result is somehow in line with the outcome of the exploratory work. As for complexity, both adopters and non-adopters saw the web as being complex and that it requires an advanced level of both web and marketing knowledge in order to be able to market travel services over the web. As for observability, both non-adopters and adopters were not able to see that other travel companies are making more travel business because of having a website. As for organizational learning, both adopters and non-adopters saw that they are making good investment in their employees and both believe that learning is important for continuous improvement.

### Differences between Simple and Sophisticated adopters in Web Adoption Factors

Besides looking at the differences between adopters versus non-adopters with regard to web adoption factors, it is also important to examine the differences between simple versus sophisticated adopters. The questionnaire included a question about whether travel agents sell or do not sell travel services over the web. This measure along with a more sophisticated measure involving percentage of these sales over the web, as will be explained in the following chapter, will be used to determine simple versus sophisticated adoption of the web. An independent-samples t-test was conducted to test for significant differences between the two groups' means. The following table (9.11) provides an overall summary of the data to allow for comparison between the means of the two groups.

**Table (9.11): Differences in group means between simple and sophisticated adopters**

Variable	Simple adopters		Sophisticated adopters		Sig. (2-tailed) level of sig. 95%
	Mean	CV	Mean	CV	
Relative advantage	4.83	0.77	5.07	0.84	0.08
Compatibility	4.86	1.49	5.34	1.25	0.00
Complexity	5.14	1.58	4.8	1.58	0.19
Observability	4.20	1.43	4.56	1.57	0.14
Perceived risk	3.17	1.18	3.78	1.24	0.00
Employees IT knowledge	4.97	1.21	5.31	1.06	0.07
Marketing Capabilities	3.74	1.32	5.14	1.23	0.00
Organizational learning	5.94	0.90	5.94	1.01	0.97
Market Orientation	6.15	0.58	6.16	0.69	0.89
Top management support	5.75	0.99	6.15	0.91	0.01
Attitude toward change	5.18	0.77	5.2	0.74	0.82
Response to risk	5.63	0.85	6.05	0.79	0.00

As can be seen from the above table, the main significant differences between simple and sophisticated adopters are in five factors that are compatibility, marketing capabilities,

perceived risk, top management support and response to risk. These results provide an initial idea about the factors that might affect the simple versus sophisticated adoption but will be further tested in the following chapter.

Having conducted descriptive analysis on the data, the following part of the chapter will deal with the validity and reliability test of the questionnaire.

## **9.5 Validity Analysis of Scale Items**

This chapter began by providing an overview of the descriptive statistics from the questionnaire. These were developed based on an extensive literature review on the determinants of web adoption by firms. Table (9.8) shows the means and coefficients of variation of these factors. It is worth mentioning that these variables are composites averaged on the basis of the imposed measurement structure used, i.e. the questionnaire.

It was assumed in the questionnaire that a particular set of items measure a particular set of constructs. Factor analysis was conducted to check whether what has been assumed corresponds with the data. Thus factor analysis was conducted on these determinants of web adoption to search for underlying dimensions in the data and to test whether the measurement scales used are correct.

Hair et al. (19998, p.90) defines validity analysis as “the extent to which a measure or set of measures correctly represent the concept of study.” Validity refers to the extent to which a measurement instrument measures what it is supposed to actually measure. The three main types of validity tests conducted being content, criterion and construct validity were discussed in chapter 6. This chapter will focus on construct validity analysis since it reflects the extent to which the construct being measured relates to the underlying theory of the phenomenon and how is it related to the other constructs (Malhotra, 1996). Construct validity includes convergent, discriminant and nomological validity. The tool used to test construct validity is factor analysis since it is an effective technique for data reduction and for testing validity. Factor analysis is conducted to tackle a large number of variables and examine whether these variables can be condensed or summarized into a

smaller number of common factors which account for inter-correlations. Factor analysis takes all the determinants of web adoption (variables) and searches for a smaller number of factors in common (Diamantopoulos and Schlegelmilch, 1997). Factor analysis thus “derives underlying dimensions that, when interpreted and understood, describe the data in a much smaller number of concepts than the original individual variables” (Hair et al., 1998, p.90). Thus factor analysis is used to identify the underlying dimensions of the concept of web adoption by travel agents in Egypt and to check whether what has been assumed about these dimensions corresponds with the data.

### **Factor Analysis of the Data**

In conducting factor analysis in order to assess construct validity, the principal component factor analysis method was chosen as a method of extraction. This method “considers the total variance and derives factors that contain small proportions of unique variance” (Hair et al., 2006, p.117). This approach to factor extraction is suitable in this research since the main objective of the factor analysis is to explain the underlying dimensions present in the original data with a minimum number of factors (Hair et al., 2006).

VARIMAX rotation was chosen as it is one of the major and proven successful methods to obtaining orthogonal rotation of factors as it “maximizes the sum of variances of required loadings of the factor matrix” (Hair et al., 2006, p.126). Finally, the selected number of factors to be extracted is based on eigenvalues whereby only factors with values greater than 1 were extracted.

Two different scenarios for factor analysis were implemented. First, variables were analyzed at the construct level whereby the variables making up each construct were analyzed separately. Following that variables were analyzed at the level of each group of constructs, i.e. perceived innovation attributes, firm resources and individual characteristics. The results reported here include factor analysis at the group level except for two factors that were analyzed at the construct level that are market orientation and response to risk, as will be explained later. The results of the factor analysis did not turn out as expected in terms of its correspondence with the proposed measurement structure. The following chapter explains how this was dealt with in the analysis.

**Table (9.12): MSA and Bartlett’s Test**

Case	Measure of sampling adequacy (MSA)	Bartlett’s test of sphericity (Sig)
Perceived innovation attributes	.745	.000
Firm resources	.771	.000
Individual attributes	.809	.000

Measure of sampling adequacy (MSA) is a measure to “quantify the degree of inter-correlations among the variables and the appropriateness of factor analysis” (Hair et al., 2006, p.114). The designated levels are as follows: .80 or above meritorious, .70 or above middling, .60 or above mediocre, .50 or above miserable and below .50 unacceptable. Table (9.12) shows that the factor analysis has high (MSA) for the three groups of constructs. In addition, table (9.12) shows the significance of Bartlett’s test of sphericity which represents the test “that the correlation matrix has significant correlations among at least some of the variables” (Hair et al., 2006, p.114). These measurements show that the values are adequate for conducting factor analysis.

**I) Perceived Innovation attributes**

Factor analysis on perceived innovation attributes resulted in a three factor solution explaining 68.53% of the variance in the outcome. The following table (9.13) shows the factor loadings of the variables contributing to this three factor solution.

**Table (9.13): Perceived Innovation Attributes Rotated Component Matrix**

	Factors		
	Web Benefits	Web Costs	Perceived Risk
International customers	.727		
Global markets	.755		
Marketing cost	.711		
Company profit	.732		
Initial cost of website		.945	
Maintenance cost of website		.938	
The web fits the current style of work	.815		
The web is compatible with work	.744		
Online payment security			.855
Business with tour operators			.823

As can be seen from the rotated matrix table all variables have high loadings. All variables that are correlated together in the same factor and have common information were grouped by the researcher and titled with a name that represents the main concept of grouping the variables (Hair et al., 2006). The three factors were named as follows:

Factor 1: Web benefits

Factor 2: Web costs

Factor 3: perceived risk

It was decided to directly include observability and complexity as separate factors in the regression analysis as they are already one statement constructs. Thus these factors will be dealt with as separate constructs in regression analysis. As for tour operator control, this variable which is part of perceived risk construct showed low communality and low factor loadings at both the construct level and perceived innovation attributes level of factor analysis. Thus it was dropped out from the analysis.

## **II) Firm Resources**

Factor analysis at the level of each construct was conducted for employees' IT knowledge, marketing capabilities, organizational learning and market orientation. A one factor solution resulted for each of these constructs with high communalities and high factor loadings for the variables related to each. Factor analysis at the level of the firm resources, was then conducted by including all the statements that pertain to firm resources. All the variables except of the three variables that measure market orientation showed high communalities and high factor loadings. The three variables measuring market orientation had low communalities and low factor loadings and also one of them had cross loadings. These three variables were dropped and the analysis rerun. A three factor solution resulted with high loadings for all variables making each factor. There was a cross loading for technical support but although this was potentially problematic, the variable was not dropped out as it constitutes an important element of the factor measuring employees' IT knowledge. As for the three variables measuring market

orientation, the three of them having low communalities among all others might indicate that they are measuring the same thing. The factor analysis at the construct level proves that since it resulted in one factor solution for these three variables with high factor loadings. Thus it was decided to include this factor but separately based on the outcome of the factor analysis conducted at the construct level, along with the three factor solution that resulted from all other variables. The following table (9.14) shows the factor loadings of the variables contributing to this three factor solution. This three factor solution explains 74.345% of the variance in the outcome variable. Additionally, Table (9.15) shows the factor analysis for market orientation at the construct level.

**Table (9.14): Firm Resources Rotated Component Matrix**

	Factors		
	Marketing Capabilities	Organizational Learning	Employees' IT knowledge
Computer literacy			.862
Employees IT knowledge			.870
Presence of technical staff	.343		.591
Develop travel services on the Web	.849		
Promote travel services on the Web	.897		
Distribute travel services online.	.835		
Organizational learning is important		.831	
Employee learning is important		.875	
Learning as a key to improvement is valued		.895	

**Table (9.15): Market Orientation Component Matrix**

	Factor
	Market Orientation
Meeting customer needs is important	.773
Customer satisfaction is a main focus	.773
The Company shares competitors' information.	.584

As can be seen from the table (9.14) all variables have high loadings. All variables that are correlated together in the same factor and have common information were grouped by the researcher and titled with a name that represents the main concept of grouping the variables (Hair et al., 2006). As for table (9.15) also high factor loadings exist for the one factor solution that resulted for market orientation. Thus in total, a four factor solution resulted for the variables pertaining to firm resources. This outcome is consistent with the factors present in the original model developed by the researcher and thus these factors were given the same names as the original model constructs. The researcher named these factors as follows:

Factor 1: Marketing capabilities

Factor 2: Organizational learning

Factor 3: Employees' IT knowledge

Factor 4: Market Orientation.

### **III) Individual Characteristics**

Factor analysis at the level of each construct was conducted for top management support, attitude toward change and response to risk. A one factor solution resulted for each of these constructs with high communalities and high factor loadings for the variables related to each. One variable, cultural resistance showed very low communality (.065) and low factor loading below the .3 suppressed values. Factor analysis at the level of the individual characteristics was then conducted by including all the statements that pertain to this group of constructs. Again cultural resistance showed very low communality and no factor loadings. Additionally there was a cross loading for one of the variables that make up the response to risk construct which is web challenge. Cultural resistance was dropped and the factor analysis rerun. Again cross loadings existed for web challenge. All the variables pertaining to response to risk construct were dropped along with cultural resistance and the factor analysis rerun. A one factor solution with high communalities and high factor loadings resulted. Therefore, similar to the strategy adopted in firm resources, since the variables constituting response to risk showed high communalities and high factor loadings when factor analysis was conducted at the construct level, it was

decided to include this factor separately based on the outcome of the factor analysis conducted at the construct level. As for cultural resistance, since it has very low communalities and low factor loading it was decided to drop it from the analysis. The following table (9.16) shows the factor loadings of the variables contributing to this one factor solution that explains 64.197% of the variance in the outcome. Additionally, Table (9.17) shows the factor analysis for response to risk at the construct level.

**Table (9.16): Individual Characteristics  
Component Matrix**

	Factor
	Management
Managers support the use of website.	.834
Managers allocate adequate resources to the development of the website.	.895
Top management is aware of the benefits of website use.	.834
Managers read about web development	.749
Managers believe that the web has enhanced their lives	.676

**Table (9.17): Response to Risk  
Component Matrix**

	Factor
	Response to Risk
Managers like to take risks	.780
Managers view the changes caused by the web as a challenge	.894
Management is comfortable with the changes brought about by the web.	.673

As can be seen from the above tables all factors have high loadings. In total a two factor solution resulted from the individual characteristics factor analysis. The researcher named the factors as follows:

Factor 1: Management

Factor 2: Response to risk

### **Main Findings of the Validity Analysis**

The results of factor analysis do not correspond with the factors that were expected to emerge, i.e. not all the determinants of web adoption that existed in the conceptual framework emerged from the factor analysis. As mentioned earlier, the conceptual framework was based on Roger's model of innovation adoption, the resource-based view of the firm and extant literature. Thus, this also implies that the results of the validity analysis are not closely in line with the literature. The following table (9.18) shows a comparison between the determinants of web adoption present in the original model (imposed model) and those that emerged from factor analysis (emergent model). As can be seen from the table, although there is some consistency between the two models in some of the factors, some differences do exist. As for perceived innovation attributes, relative advantage was broken down into two factors that are web benefits and web costs and compatibility became part of web benefits. Perceived risk had one variable dropped which is tour operator control. As for complexity, trialability and observability, they all exist in both models because they are kept separate as they are all single item constructs. As for firm resources, the same factors exactly came out from the emergent model and thus both models are identical regarding factors constituting firm resources. Finally, the three constructs of individual characteristics in the original model resulted into two in the emergent model and the cultural resistance variable was dropped out. Top management support and attitude toward change were combined into one factor that is called management. Response to risk remained as it is in both models.

It is clear from table (9.18) that although the results of the factor analysis are not as expected, the findings are somehow consistent with the proposed framework of the research which consists of composite scales averaged on the basis of the imposed measurement structure used, with a only few differences between the two. This outcome of the factor analysis might indicate that there are some problems with the validity of the proposed measures as originally proposed. The revised measurement structure that emerges from the factor analysis is characterized by levels of convergent and discriminant validity which might be viewed as acceptable, although the need to conduct analysis at the construct level, does limit the assessment of discriminant validity.





### **Reliability Analysis**

Reliability of the questionnaire (measurement instrument) refers to the extent to which the same measurement instrument is likely to produce consistent results if repeated measures of the phenomenon are made over a time span during which the phenomenon is not likely to change radically. Reliability thus measures the extent to which a measure is free from random error, i.e. the more a measure is free from random error; the more it is judged to be reliable. The three ways to assess reliability being test-retest, equivalent reliability and internal consistency reliability were discussed in chapter 6 (Malhotra, 1996; Diamantopoulos and Schlegelmilch, 1997). Focusing on the internal consistency reliability, the researcher conducted the Cronbach Alpha method. This is a reliability measure that assesses the consistency of the entire scale. It calculates the mean reliability coefficient estimates for all possible ways of splitting the total set of measurement items into two halves. Any considerably weak correlation of an item with other items in the scale is an indication that the particular item does not correlate very well with the scale overall and may have to be dropped (Field, 2005). The values of the Cronbach Alpha coefficient range from 0 to 1 with 0.7 being a generally accepted lower limit (Hair et al., 1998). It is worth noting that, strictly speaking, alpha can not be used with two item scales and that increasing the number of items in a scale will increase the reliability value of the scale (Hair et al., 2006). Only two factors exist as two item scales here which are web costs and perceived risk.

The researcher conducted the reliability tests for the main determinants of web adoption that resulted from the factor analysis. Administration of the Cronbach Alpha technique using SPSS for scale items measuring the 9 independent variables that resulted from factor analysis produced reliability coefficients as shown in the following table which is a good indication of the existence of a satisfactory degree of internal consistency reliability among the scales used to measure the model's variables. The individual alpha's for all scales measuring the independent variables are shown in the following table.

**Table (9.19): Cronbach Alpha Coefficient**

<b>Variables</b>	<b>Cronbach Alpha</b>
Web benefits	0.852
Web costs	0.910
Perceived risk	0.617
Marketing capabilities	0.862
Employees' IT knowledge	0.719
Organizational learning	0.838
Market Orientation.	0.478
Management	0.869
Response to risk	0.672

From the previous table one can conclude that the reliability coefficient is within a satisfactory level which supports the argument that the research instrument is reliable with regard to its internal consistency. One scale which is market orientation, however, showed a low alpha of 0.478 which might be due to the fact that this construct had to be compressed from four items to three items in order to reach an appropriate length of the questionnaire as explained in the methodology chapter.

## **9.6 Conclusion**

This chapter began by examining the data through descriptive analysis. It provided us with a general picture of the factors affecting adoption versus non-adoption or simple versus sophisticated adoption through the group means. This will be further tested quantitatively in the next chapter. Following that, the chapter tested the validity and reliability of the scale items using factor analysis and Cronbach Alpha. The chapter discussed the factor analysis results for all the statements included in the questionnaire. The results of the factor analysis were not as expected in that some differences existed between the original model proposed in the conceptual chapter and the factors that emerged from factor analysis. The emergent model includes the following nine independent variables resulting from factor analysis: web benefits, web costs, web risks, marketing capabilities, employees' IT knowledge, organizational learning, market orientation, management and response to risk. Additionally, three other variables which are complexity, observability and company size that were not included in the factor analysis because they are based on one statement scales, but are part of the original

model, will also be included as part of the emergent model in the following chapter analysis. The following chapter will include analysis of the data using the regression technique.

## **Chapter Ten**

# **Analysis of Empirical Results: Findings and Interpretations**

### **10.1 Introduction**

The previous chapter presented the data analysis of this research in the form of descriptive analysis, and testing of the validity and reliability of the measurement scale items. The purpose of this chapter is to present the main findings of the research and the results of hypothesis testing. The chapter starts with a discussion of the techniques used to analyze data which are logistic regression as well as multiple regression and the reason for using these types of regression. Different models are used because of the different ways used to measure adoption as will be discussed later in this chapter. The data are checked to ensure that they meet the assumptions of regression analysis. An emergent regression model is developed that includes constructs that resulted from the factor analysis besides the imposed regression model that includes the hypothesized constructs. Two models are used for analysis because as shown in the previous chapter, the results of the factor analysis were not as expected in that some differences existed between the constructs proposed in the original model and the factors that emerged from factor analysis. The main findings of the research are then presented.

### **10.2 Analysis Approach**

The analysis tools used for the testing and interpretation of the hypotheses are the logistic regression and the multiple regression analysis techniques. In explaining these analysis techniques, it is necessary to look at the aim of this research first. This research aims to empirically test the determinants of web adoption by travel agents in Egypt, i.e. test the theoretical framework developed in order to suggest the generalization of the results. In order to do that, different approaches were used in the questionnaire as explained in the methodology chapter. Web adoption is typically not a discrete phenomenon because it oversimplifies the situation to regard it as a mere dichotomy of do you use or do you not

use the web. It is more about the way and degree of web use; however it is difficult to measure. Thus two approaches were used to measure adoption in the questionnaire.

First, a simple and crude measure but one that is easy to get data on; ownership of a web site and selling via the web. This is a simplified measure but it is a reasonable proxy because if companies do sell on the web then this indicates that they are actually doing business over the web and making use of the technology rather than just using the web to communicate. Also this is a commonly accepted and widely used measure and it is data that can be gathered. This measure has been used by other researchers who studied adoption as a dichotomous variable (Frambach et al., 1998; Premkumar and Roberts, 1999; Sultan and Chan, 2000; Teo and Ranganathan, 2004; To and Ngai, 2006). Second, a slightly more sophisticated measure which is how much do you sell on the web. This measures the degree of adoption by measuring the extent to which these companies are actually engaged over the web with those highly selling being considered highly engaged. This is a measure of degree of sophistication of adoption that is based around sales but it is more difficult to measure because it is more sensitive because companies usually do not like to give information on sales. This measure is quite difficult to collect but it tells us something about the degree of engagement of these companies over the web. A similar measure has been used by Hong and Zhu (2006) in their study on the adoption of e-commerce by firms where they used the percentage of revenue from web sales as an indicator of the extent to which a firm migrated from the traditional channel to the web channel.

Both of these measures have their weaknesses and it is not clear which is best so it was decided that together, these two different measures will be used to measure web adoption in this research. Taken together, these two measures tell us much more about the degree of adoption of these companies.

Logistic regression was selected for studying the dichotomy of adoption versus non-adoption and selling versus not selling on the web. There are three reasons for this selection. First, logistic regression is a specialized form of regression that is used to

predict and explain a binary (two-group) categorical dependent variable as is the case in this research (Hair et al., 1998). Second, logistic regression is flexible and not restrictive as discriminant analysis in terms of meeting assumptions and is robust when assumptions are not met. Third, logistic regression is similar to regression with straightforward statistical tests and a wide range of diagnostics (Hair et al., 1998).

Besides logistic regression, multiple regression was selected for studying the degree of engagement of travel companies measured by the percentage of sales conducted over the web by these companies. There are three reasons for this selection. First, multiple regression is the suitable technique when there is a single metric dependent variable and a set of metric independent variables. Second, multiple regression provides a means of objectively assessing the magnitude and direction of each independent variable on the dependent variable (Hair et al., 1998). Finally, multiple regression will empirically test the overall fit of the proposed model and reflect its explanatory power.

The question that needs to be answered before moving to the next step is whether to use factor means or factor scores for hypotheses analysis. Factor scores are “composite measures of each factor computed for each subject” (Hair et al., 1998, p.119). On the other hand, factor means represent the average of the variables that are loading highly on a specific factor (Hair et al., 1998). Thus the difference between factor scores and factor means is that factor scores are calculated based on the factor loadings of all variables on a factor whereas factor means are calculated by combining only those variables loading highly on a factor. Factor scores have the advantage of representing a composite of all the variables loading on a factor, although this also represents a potential disadvantage in that all variables have some degree of influence on computing the factor score and this makes the interpretation more difficult (Hair et al., 1998). The analysis will use factor means as they are more meaningful and clearer in their interpretation since they only include the variables loading highly on a factor.

A problem occurred which is that the emergent dimensions from factor analysis were not as expected during the development of the conceptual framework and hypotheses. The

factors that emerged from the factor analysis were quite different from those used during the development of the model. Accordingly, the constructs do not match the hypothesis originally specified which means that these hypotheses can not be tested directly unless the original measurement structure is imposed. Thus for each measure of adoption, there are two models estimated. As a result, the researcher has two models for regression analysis which are the imposed model based on the dimensions that were measured by the questionnaire and the emergent model based on the dimensions that resulted from factor analysis. In the following sections the data will be initially examined for regression assumptions and then the regression analysis will be presented in details.

### **10.3 Regression Assumptions**

Generally using regression analysis is based on four main assumptions that are needed to exist in the data in order to ensure a high degree of confidence in the results of the regression analysis. These assumptions are: normality, linearity, homoscedasticity and independence of the variables. The first assumption is about normality of the phenomenon. This is a basic assumption that refers to the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution (Hair et al, 1998). In this research a histogram was plotted for each independent variable as well as for the dependent variable and the results suggested the normality of each variable as most of the distributions of the variables took the general shape of the normal distribution (Hair et al, 1998). Multivariate normality (the combination of two or more variables) means that individual variables are normal in a univariate sense and their combinations are also normal. A situation in which all variables exhibit univariate normality will help assure multivariate normality to a large extent but would not guarantee it. This indicates that multivariate normality is more difficult to test (Hair et al., 2006). The simplest diagnostic test for normality is a visual check of the histogram that compares the observed data values with a distribution approximating the normal distribution. Histograms for the dependent variables and the independent variables were obtained using SPSS. Most distributions of variables approximated quite substantially to the general shape of a normal probability distribution.

The second assumption is about homoscedasticity of the error term. This assumption is related to the dependence relationships between variables. The dependent variable should exhibit equal levels of variance across the range of predictor variables. Homoscedasticity is desirable because “the variance of the dependent variable being explained in the dependence relationship should not be concentrated in only a limited range of the independent values” (Hair et al, 1998, p.73). The data should thus show a constant variance in order for the results to be efficient. The test for this assumption could be conducted through the graphical plots of the residuals or through a statistical test called the Levene test for homogeneity of variance that assesses “whether the variances of a single metric variable are equal across any number of groups” (Hair et al, 1998, p.75). Both graphical and statistical tests were conducted on the data and no significant heteroscedasticities were found.

The third assumption is about the linearity between the dependent variable and each of the independent variables. The most common way to examine linearity is through scatter-plots of the variables to show whether any nonlinear pattern exists in the data (Hair et al., 1998). Scatter plots were done for each independent variable in relation to the dependent variable. The general trend of the data shows linearity of the variables as there is no significant departure from linearity in most of the cases.

The fourth assumption is about the independence of the error terms which suggest that the predicted values are independent (Hair et al., 1998). The residuals rather than the original variables should be used in this test because “the focus is on the prediction errors, not the relationship captured in the regression equation” (Hair et al., 1998, p.205). The pattern appeared random suggesting that dependence of error terms was unlikely to be a problem and hence this assumption exists in the data (Hair et al., 1998).

Having examined the regression assumptions, the following sections will present in details the results of logistic and multiple regression for both the emergent and imposed models.

## **10.4 Logistic Regression**

### **10.4.1 Adoption versus Non-adoption**

The adoption versus non-adoption regression model compares those firms that do not use the web at all and thus do not have a website (non-adopters) with those who do use the web and have a website (adopters). Additionally, among adopters this model compares those who do not sell on the web and thus use it for communication only (simple adopters) with those who do sell on the web and thus use it for both communication and transactions (sophisticated adopters).

As mentioned above, the emergent regression model is based on the determinants of web adoption that emerged from the factor analysis as shown in the previous chapter. In this model the factor means are used for implementing the regression analysis.

The emergent model includes the following nine independent variables resulting from factor analysis: web benefits, web costs, web risks, marketing capabilities, employees' IT knowledge, organizational learning, market Orientation, management and response to risk. Additionally, three other variables which are complexity, observability and company size that were not included in the factor analysis because they are based on one statement scales, but are part of the original model, will also be included. The imposed regression model is based on the dimensions that were measured by the questionnaire and includes the average of the statements measuring each determinant of web adoption.

Logistic regression employs the maximum likelihood procedure instead of the sum of squares when calculating measure of overall model fit (Hair et al., 1998). Given the sensitivity of maximum likelihood estimators to outlying observations on the dependent variable and to extreme values of the independent variables (Pregibon, 1981); a residual analysis was conducted after first estimation. The residual analysis identified four cases (non-adopters) with studentized residuals greater than two and cook's distance greater than one (Field, 2000). These cases were removed and a second estimation was conducted which resulted in a better output in terms of the predictors turning out as significant. Additionally, due to the small sample size used (174 cases), significance up to

10% will be accepted. It is worth noting that the number of non-adopters is small and thus this should be taken into consideration while evaluating these adoption versus non-adoption models.

This section will present the results of logistic regression for both the emergent and imposed models using adoption versus non-adoption as the dependent variable. The following table includes a summary of the results of logistic regression for the emergent model.

**Table (10.1) :Adoption versus Non-adoption Logistic Regression : Emergent Model**

<b>Emergent Model Summary</b>			
<b>-2 Log Likelihood</b>	33.877		
<b>Model Chi-square Improvement</b>	105.737	p=0.000	
	105.737	p=0.000	
<b>Hosmer and Lemeshow Test</b>	7.448	p=.489	
<b>Emergent Determinants of Web adoption</b>	<b>Beta</b>	<b>Wald Statistic</b>	<b>Sig.</b>
<b>Perceived Innovation Attributes</b>			
<b>Web benefits</b>	<b>2.237</b>	<b>6.825</b>	<b>.009</b>
Web costs	-.252	.308	.579
Web risks	-.219	.398	.528
<b>Complexity</b>	<b>-.694</b>	<b>2.565</b>	<b>.109</b>
<b>Observability</b>	<b>-1.216</b>	<b>4.726</b>	<b>.030</b>
<b>Firm Characteristics</b>			
<b>Company size</b>	<b>2.075</b>	<b>3.074</b>	<b>0.080</b>
Marketing capabilities	-.955	2.454	.117
Organizational learning	-1.329	2.105	.147
<b>Employees IT knowledge</b>	<b>-1.220</b>	<b>5.314</b>	<b>.021</b>
Market orientation	.534	.641	.423
<b>Individual Characteristics</b>			
<b>Management</b>	<b>5.169</b>	<b>10.452</b>	<b>.001</b>
Response to risk	.719	.929	.335
Percentage correctly classified	96.6%		

**Table 10.1 (a): Adoption versus Non-adoption logistic regression: Emergent Model Classification Table**

<b>Observed</b>		<b>Predicted</b>		
		<b>Adoption Status</b>		<b>Percentage correct</b>
		<b>Non-adopter</b>	<b>Adopter</b>	
Adoption Status	Non-adopter	21	3	87.5
	Adopter	3	147	98.0
Overall Percentage				96.6

As can be seen from table 10.1, the chi-square test for the change in the -2 log likelihood (-2LL) value from the base model is highly significant at 0.000 indicating that the model including the determinants of web adoption is significantly better than without those predictors and thus significantly improves our ability to predict web adoption. The model chi-square is an analogue to the F test in multiple regression (Hair et al., 1998). The small value (33.877) of the -2LL indicates a better model fit with the amount left unexplained by the model being minimal. Also, the Hosmer and Lemeshow test of overall model fit shows that there is no statistically significant difference between the observed and predicted classifications of the dependent variable indicated by a non-significant chi-square value and thus a good model fit exists.

Similar to t-test in multiple regression, the Wald statistic shows whether the b-coefficient for each predictor is significantly different from zero and thus making a significant contribution to the prediction of the outcome. The magnitude of the relations is presented by the beta coefficients.

As can be seen from the table, three factors are positively related and significant in their relation with web adoption. Management with a beta value of 5.169 (P=0.001), web benefits with a beta of 2.237 (P=0.009) and company size with a beta of 2.075 (P=0.080). Additionally, the results show that three other factors which are employees IT knowledge, observability and complexity are negatively related and significant.

It is clear from these results that management has a high influence on the adoption/non-adoption decision. Thus what fundamentally affects the adoption decision is management's awareness and support of this decision. Additionally, it is also obvious that awareness of the benefits of the web in terms of its perceived attributes is also vital

and influential on the adoption decision. Thus knowledge of these perceived benefits does have a significant influence on the adoption decision. Additionally, company size being significant indicates that the adoption/non-adoption decision is related to the size and consequently resources available in the company.

Employees' IT knowledge shows a significant but negative influence on adoption. This is quite contradictory to the results of previous researches that indicate that employees' IT knowledge is positively related to web adoption. Also, contrary to previous research, observability shows a negative impact on adoption. As for complexity, the negative correlation indicates that the more complex companies perceive the web to be, the less likely they are to adopt the web.

The classification table 10.1 (a) shows a very high hit ratio (96.6%) for correctly classified cases for the model. As can be seen from the table there is a distortion caused by the small number of cases in the non-adopter category. It is thus important to mention that this result is dominated by the large group difference that exists in the data. The 150 adopters versus 24 non-adopters indicate that the 96.6% hit ratio is a little better than correct classification by chance which is 86%.<sup>2</sup>

Having examined the results of the emergent model, the following section will discuss the results of the imposed model. The following table includes a summary of the results of logistic regression for the imposed model. As mentioned earlier, the imposed regression model is based on the dimensions that were measured by the questionnaire and includes the average of the statements measuring each determinant of web adoption

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<sup>2</sup> In order to deal with this problem and to test the robustness of the results, the model was re-estimated ten times using ten series of random samples of 40 adopters and the 24 non-adopters. The ten sets of resulting parameter estimates were compared and the pattern across them was examined. The results showed reasonable correct classifications and pretty consistently the same predictors turned out as significant across the ten samples. Thus although the above model is problematic in terms of the large difference between adopters and non-adopters, the results of the ten valid random samples indicate that a fairly consistent pattern emerges which confirms that these same factors discussed above are the ones that influence the adoption/ non-adoption decision.

**Table (10.2): Adoption versus Non-adoption logistic regression: Imposed Model**

<b>Imposed Model Summary</b>			
<b>-2 Log Likelihood</b>	32.774		
<b>Model Chi-square Improvement</b>	106.840	p=0.000	
	106.840	p=0.000	
<b>Hosmer and Lemeshow Test</b>	1.968 p=.982		
<b>Imposed Determinants of Web adoption</b>	<b>Beta</b>	<b>Wald Statistic</b>	<b>Sig.</b>
<b>Perceived Innovation Attributes</b>			
<b>Relative advantage</b>	<b>2.073</b>	<b>4.622</b>	<b>.032</b>
Compatibility	.228	.156	.693
Perceived risk	-.447	.955	.329
<b>Complexity</b>	<b>-.805</b>	<b>4.218</b>	<b>.040</b>
Observability	-.663	1.786	.181
<b>Firm Characteristics</b>			
Company size	.261	.043	.837
<b>Marketing capabilities</b>	<b>-.715</b>	<b>2.639</b>	<b>.104</b>
<b>Organizational learning</b>	<b>-1.849</b>	<b>4.648</b>	<b>.031</b>
<b>Employees IT knowledge</b>	<b>-1.247</b>	<b>4.794</b>	<b>.029</b>
Market orientation	.625	.690	.406
<b>Individual Characteristics</b>			
<b>Top management support</b>	<b>3.773</b>	<b>11.679</b>	<b>.001</b>
<b>Attitude toward change</b>	<b>2.569</b>	<b>5.440</b>	<b>.020</b>
Response to risk	.836	1.634	.201
Percentage correctly classified	96.6%		

**Table 10.2 (a): Adoption versus Non-adoption logistic regression: Imposed Model Classification Table**

		Predicted		
		Adoption Status		Percentage correct
Observed		Non-adopter	Adopter	
Adoption Status	Non-adopter	20	4	83.3
	Adopter	2	148	98.7
Overall Percentage				96.6

As can be seen from table 10.2, the chi-square test for the change in the -2 log likelihood (-2LL) value from the base model is highly significant at 0.000 indicating that the model including the determinants of web adoption significantly improves our ability to predict web adoption. The small value (32.774) of the -2LL indicates a better model fit with the amount left unexplained by the model being minimal. Also, the Hosmer and Lemeshow Test of overall model fit shows that there is no statistically significant difference between the observed and predicted classifications of the dependent variable indicated by a non-significant chi-square value and thus a good model fit exists.

The table shows that seven factors out of the 11 are significant. Three of these are positively correlated and the other four are negatively correlated to web adoption. Similar to the results of the emergent model, top management support is significant with a beta of 3.773 ( $p=0.001$ ) and attitude toward change with a beta of 2.569 ( $p=0.020$ ). These two factors together make up the management factor in the emergent model. Additionally, relative advantage is significant with a beta of 2.073 ( $p=0.032$ ). This is similar to web benefits which turned out significant in the emergent logistic model.

Again, the classification table 10.2 (a) shows a very high hit ratio (96.6%) for correctly classified cases for the model as was the case for the emergent model. The table shows a distortion caused by the small number of cases in the non-adopter category.

Contrary to previous research results, three factors that are employees' IT knowledge, marketing capabilities and learning capabilities, which are part of firm resources, turn out as significant but with negative correlation on adoption. These results are not easy to explain but it maybe chance that these factors turn out significant in one of the models or maybe because of the multiple models used that resulted in some ambiguity. However, these odd results occur only once across the six models used. The dominant body of evidence is that organizational learning and employees' IT knowledge are not significant and that marketing capabilities is significant for the simple versus sophisticated adoption. Finally, complexity shows a negative and significant influence on adoption indicating that the more complex the web is perceived the less likely companies are to adopt it.

Again these results indicate that the adoption/ non-adoption decision is highly influenced by management related issues as well as the awareness of the relative advantage of the web. These are the most important factors when it comes to deciding whether to adopt or not adopt the web. Thus it is obvious that characteristics of management and its awareness and support to the web as well as its attitude toward the change created by the web are fundamental to the adopt/non-adopt decision. Additionally awareness of the perceived attributes of the web is important in taking the decision to adopt the web.

Having discussed the results of logistic regression using adopt versus non-adopt as the dependent variable, the following section will discuss the results of the two different approaches used to measure the level of web adoption identified as simple versus sophisticated adoption. These techniques are logistic regression using sell versus not sell over the web as the dependent variable and multiple regression using the percentage of sales over the web as the dependent variable.

#### 10.4.2 Simple versus Sophisticated Adoption

As mentioned earlier this model is used to compare simple adopters or those who use the web for communication only with sophisticated adopters or those who use the web for communication and transactions by actually selling online. This section will thus present the results of logistic regression for both emergent and imposed models using selling or not selling on the web as the dependent variable. As mentioned at the beginning of the chapter, this technique is used to answer the research question that deals with the level of web adoption by travel agents. The following table includes a summary of the results of logistic regression for the emergent model.

**Table (10.3) : Simple versus Sophisticated Adoption logistic regression : Emergent Model**

<b>Emergent Model Summary</b>	
<b>-2 Log Likelihood</b>	153.543
<b>Model Chi-square Improvement</b>	53.974 p=0.000 53.974 p=0.000

<b>Hosmer and Lemeshow Test</b>	7.179 p=.517		
<b>Emergent Determinants of Web adoption</b>	<b>Beta</b>	<b>Wald Statistic</b>	<b>Sig.</b>
<b>Perceived Innovation Attributes</b>			
Web benefits	-.396	1.786	.180
Web costs	-.147	1.109	.242
<b>Web risks</b>	<b>-.241</b>	<b>2.560</b>	<b>.101</b>
Complexity	-.069	.200	.654
Observability	.095	.366	.545
<b>Firm Characteristics</b>			
Company size	.291	.476	.490
<b>Marketing capabilities</b>	<b>1.083</b>	<b>23.141</b>	<b>.000</b>
Organizational learning	-.233	.784	.376
Employees IT knowledge	.101	.002	.966
Market orientation	-.399	1.086	.297
<b>Individual Characteristics</b>			
Management	-.225	.300	.584
<b>Response to risk</b>	<b>.521</b>	<b>3.019</b>	<b>.082</b>
Percentage correctly classified	74.7%		

As can be seen from the above table, the chi-square test for the change in the -2 log likelihood (-2LL) value from the base model is highly significant at 0.000 indicating that the model including the determinants of web adoption significantly improves our ability to predict web adoption. Additionally, the Hosmer and Lemeshow Test of overall model fit shows that there is no statistically significant difference between the observed and predicted classifications of the dependent variable indicated by a non-significant chi-square value and thus a good model fit exists.

The table shows that from the nine emergent determinants of web adoption, two (marketing capabilities and response to risk) are positively correlated and significant in relation to web adoption and one (web risks) is negatively correlated and significant. The magnitude of the relationship is presented by the beta coefficients. Marketing capabilities is significant with a beta value of 1.083 (p=0.000) and response to risk is significant with a beta value of .521 (p=0.082). Web risks is significant with a beta of -.241 (p=.101).

These results suggest that in the simple versus sophisticated adoption decision what really matters is the ability within the company to develop, promote and distribute a travel service over the web and this explains the high significance that the marketing capabilities factor has. Additionally, in individual characteristics, response to risk turned out as an influential and significant factor on simple versus sophisticated adoption. This suggests that in order to be willing to sell on the web, management must be risk takers rather than conservative in terms of the decisions they make regarding their business on the web. Moreover, web risks being significant with a negative impact on selling versus not selling on the web indicates that travel companies are concerned about the risks associated with online payment and the risks of losing travel business with their tour operators as a result of selling directly on the web. This implies that knowledge of these risks does have a negative impact on deciding to sell or not sell on the web.

It is worth noting that none of the firm resources other than marketing capabilities turned out as significant here suggesting that Knowledge of IT, being market oriented or having a certain level of learning within the organization are not important factors influencing selling over the web, the willingness to sell is determined by possessing the marketing capability for doing that. This might indicate that these are hygiene factors meaning that they are needed anyways to sell on the web but what really matters or persuades the company to sell on the web is the presence of the marketing capability needed for that.

It is also worth noting that, contrary to the adoption versus non-adoption logistic regression results, management did not turn out as a significant factor in simple versus sophisticated adoption indicating that at this level of adoption management support already exists, not like the case when we are considering adoption versus non-adoption, but what really matters here is the response of management to the risks associated with web selling.

Finally, the bottom row of the table shows a high hit ratio (74.7%) for correctly classified cases for the model. This ratio indicates that the model performs well in terms of predicting the number of observed simple and sophisticated adopters. The two groups are

similar in numbers whereby number of simple adopters is 71 cases and the number of sophisticated adopters is 79 cases and thus there was no problem of large group differences as the one that existed for adopters versus non-adopters.

Having examined the results of the emergent model, the following section will discuss the results of the imposed model.

**Table (10.4): Simple versus Sophisticated Adoption logistic regression: Imposed Model**

<b>Imposed Model Summary</b>			
<b>-2 Log Likelihood</b>	152.179		
<b>Model Chi-square Improvement</b>	55.338 p=0.000 55.338 p=0.000		
<b>Hosmer and Lemeshow Test</b>	5.419 p=.712		
<b>Imposed Determinants of Web adoption</b>	<b>Beta</b>	<b>Wald Statistic</b>	<b>Sig.</b>
<b>Perceived Innovation Attributes</b>			
Relative advantage	-.395	1.730	.188
Compatibility	-.223	1.335	.248
<b>Perceived risk</b>	<b>-.336</b>	<b>2.766</b>	<b>.096</b>
Complexity	-.057	.131	.717
Observability	.110	.477	.490
<b>Firm Characteristics</b>			
Company size	.319	.557	.455
<b>Marketing capabilities</b>	<b>1.087</b>	<b>23.179</b>	<b>.000</b>
Organizational learning	-.230	.779	.377
Employees IT knowledge	-.048	.034	.853
Market orientation	-.431	1.262	.261
<b>Individual Characteristics</b>			
Top management support	-.096	.092	.762
Attitude toward change	-.240	.772	.395
<b>Response to risk</b>	<b>.526</b>	<b>3.151</b>	<b>.076</b>
Percentage correctly classified	76.0%		

As can be seen from the above table, the chi-square test for the change in the -2 log likelihood (-2LL) value from the base model is highly significant at 0.000 indicating that

the model including the determinants of web adoption significantly improves our ability to predict web adoption. The value of the -2LL indicates a better model fit. Also, the Hosmer and Lemeshow Test of overall model fit shows that there is no statistically significant difference between the observed and predicted classifications of the dependent variable indicated by a non-significant chi-square value and thus a good model fit exists.

The table shows that two factors (marketing capabilities and response to risk) are positively correlated and significant in relation to selling on the web. Additionally, one factor (perceived risk) is significant but negatively correlated. The magnitude of the relations is presented by the beta coefficients. Marketing capabilities is significant with a beta value of 1.087 ( $p=.000$ ) and response to risk with a beta value of .526 ( $p=.076$ ). These results are similar to the results of the emergent logistic model suggesting that the simple versus sophisticated adoption decision is highly influenced by the marketing capabilities existing within the firm and that these capabilities are fundamental for a travel firm to be able to sell on the web. Additionally, similar to the other model, response to risk comes directly after marketing capabilities in terms of influence and significance and this indicates that selling on the web requires a management to be able to take risks and be less conservative in terms of the decisions they make regarding the web. Additionally, similar to the results of the emergent model, perceived risk has a significant negative influence on selling on the web with a beta of  $-.336$  ( $p=.096$ ) suggesting that that travel companies are concerned about the risks associated with online payment and the risks of losing travel business with their tour operators as a result of selling directly on the web. This implies that knowledge of these risks does have a negative impact on deciding to sell or not sell on the web.

It is worth mentioning that none of the firm resources other than marketing capabilities turned out as significant here suggesting that Knowledge of IT, being market oriented or having a certain level of learning within the organization are not important factors influencing selling over the web, the ability to sell is determined by possessing the marketing capability for doing that. Moreover, management does not turn out as a significant factor affecting selling or not selling on the web. Finally, similar to the

emergent model, the bottom row of the table shows a high hit ratio (76%) for correctly classified cases for the model. This ratio indicates that the model performs well in terms of predicting the number of observed simple and sophisticated adopters.

Having examined the results of simple versus sophisticated adoption using logistic regression, the following section will illustrate the results of simple versus sophisticated adoption using multiple regression.

## **10.5 Multiple Regression**

### **10.5.1 Emergent Regression Model**

Multiple regression was conducted to analyse simple adopters or those who use the web for communication only (zero sales via the web) with sophisticated adopters (those who use the web for communication and transactions). Thus the dependent variable here is the percentage of sales over the web. Only 68 companies out of the 150 adopters answered this question. The rest of the adopters do not sell on the web and thus these were coded as zeros for analysis purposes. 9 companies mentioned that they sell on the web but refused to answer the question and therefore these were coded as missing values. The total number of data points here is 141 (150-9) with zeros given to all those who do not sell on the web.

As for multiple regression, the emergent model includes web adoption measured by percentage sales over the web and the same dimensions that emerged from factor analysis as well as complexity, observability and company size as the independent variables. It is important to mention that before examining this model, an assessment of the multicollinearity in the model was conducted to prove that the variables are independent from each other or else the predictive power of any single independent variable will decrease (Hair et al., 1998; Diamantopoulos & Schlegelmilch, 1997). The test for multicollinearity was conducted by calculating the Tolerance and Variance Inflation Factor (VIF), which are reciprocal of each other, for each independent variable in order to indicate whether an independent variable can be predicted by another independent variable within the same model. If the VIF is higher than 10, this suggest a high degree of

multicollinearity (Hair et al., 1998). The above table shows that there is no high degree of multicollinearity within the model and thus the model is suitable for hypothesis testing.

The following table includes a summary of the results of multiple regression for the emergent model.

**Table (10.5) Emergent Multiple Regression Model**

<b>Emergent Model Summary</b>			
<b>R</b>	0.627		
<b>R square</b>	0.394		
<b>Adjusted R square</b>	0.337		
<b>F</b>	6.925		
<b>Sig.</b>	0.000		
<b>df1</b>	12		
<b>df2</b>	128		
<b>Emergent Determinants of Web adoption</b>	<b>Standardized Coefficients</b>		<b>Collinearity Diagnostics</b>
	<b>Beta</b>	<b>Sig.</b>	<b>Variable inflation factor (VIF)</b>
<b>Perceived Innovation Attributes</b>			
Web benefits	.029	.775	1.978
Web costs	-.073	.312	1.097
<b>Web risks</b>	<b>-.143</b>	<b>.062</b>	<b>1.215</b>
Complexity	-.001	.989	1.345
Observability	.067	.395	1.288
<b>Firm Characteristics</b>			
Company size	-.027	.711	1.088
<b>Marketing capabilities</b>	<b>.555</b>	<b>.000</b>	<b>1.803</b>
Organizational learning	.035	.676	1.453
Employees IT knowledge	-.024	.784	1.594
Market orientation	-.052	.530	1.443
<b>Individual Characteristics</b>			
Management	-.144	.192	2.554
<b>Response to risk</b>	<b>.146</b>	<b>.101</b>	<b>1.650</b>

It is worth noting that the “adjusted R<sup>2</sup>” is considered a better population estimate and is useful when comparing R<sup>2</sup> models with different number of independent variables because it makes allowances for the specific number of independent variables (Hair et al., 1998, p.182). Since in this research the researcher is comparing two models that are the

emergent and imposed models with different numbers of independent variables, the researcher will depend on the adjusted  $R^2$  in the analysis.

The above table shows that for the emergent dimensions model, the independent factors account for 33.7% of the variance in web adoption (Hair et al., 1998). Although not high, this is regarded as a relatively adequate level of explanatory power given the small sample size and the large number of independent variables considered. Additionally, the significant F, as presented in the table, reflects a significant value of .000. These results support the suggested conceptual framework. The table shows that from the nine emergent determinants of web adoption, two are positively correlated and significant and one is negatively related and significant in relation to web adoption. The magnitude of the relations is presented by the beta coefficients. Beta values show that marketing capabilities is the variable that has the largest influence on web adoption with a beta value of .555 ( $p=.000$ ) as measured by volume of sales on the web. Following that response to risk is significant with a beta value of .146 ( $p=.101$ ) and web risks is significant with a beta value of -.143 ( $p=.062$ ). The significance value of t indicates that marketing capabilities is highly significant at .000. These results are similar to the results of the logistic regression on simple versus sophisticated adoption.

These results show that when comparing simple versus sophisticated adopters in terms of selling versus not selling travel services over the web, what really makes a difference is not being aware of benefits of the web, but the ability to actually develop, promote and distribute a travel service over the web. Additionally, web benefits not turning out as a significant factor further supports this argument since at this level of adoption (simple versus sophisticated) all companies already have an awareness of the perceived attributes of the web measured in terms of web benefits and costs, contrary to the case when considering adoption versus non-adoption whereby awareness of these attributes is important, and thus this factor is not significant at this level since what influences selling or not selling on the web is the actual ability to do that. Also complexity and observability, which are part of the perceived innovation attributes did not turn out as significant factors on simple versus sophisticated adoption thus, supporting the same

argument. Web risks turning out as a significant factor indicate that travel companies are concerned about the risks associated with online payment and the risks of losing travel business with their tour operators as a result of selling directly on the web. This implies that knowledge of these risks does have a negative impact on deciding to sell or not sell on the web.

As for firm characteristics, organizational learning and employees' IT knowledge not turning out as significant factors in simple versus sophisticated adoption further support the same argument that the willingness to sell on the web is not affected by the internal IT knowledge or learning within the organization since the organization can rely on an external consultant to do the technical part related to developing a web site. Selling on the web requires marketing ability to do that rather than technical IT knowledge.

In individual characteristics, response to risk turned out as an influential and significant factor on simple versus sophisticated adoption. This is consistent with the fact that in order to be willing to sell on the web, management must be risk takers rather than conservative in terms of the decisions they make regarding their business on the web. Management did not turn out as a significant factor on simple versus sophisticated adoption indicating that at this level of adoption management support already exists, not like the case when we are considering adoption versus non-adoption, but what really matters here is the response of management to the risks associated with web selling.

### **10.5.2 Imposed Regression Model**

The imposed regression model is based on the dimensions that were measured by the questionnaire and includes the average of the statements measuring each determinant of web adoption. This section will present the results of the imposed regression model.

The following table includes a summary of the results of multiple regression for the imposed model.

**Table (10.6): Imposed Multiple Regression Model**

<b>Imposed Model Summary</b>			
<b>R</b>	0.646		
<b>R square</b>	0.418		
<b>Adjusted R square</b>	0.358		
<b>F</b>	7.014		
<b>Sig.</b>	0.000		
<b>df1</b>	13		
<b>df2</b>	127		
<b>Imposed Determinants of Web adoption</b>	<b>Standardized Coefficients</b>		<b>Collinearity Diagnostics</b>
	<b>Beta</b>	<b>Sig.</b>	<b>Variable inflation factor (VIF)</b>
<b>Perceived Innovation Attributes</b>			
Relative advantage	-.049	.542	1.432
Compatibility	-.047	.604	1.808
<b>Perceived risk</b>	<b>-.182</b>	<b>.023</b>	<b>1.363</b>
Complexity	.002	.981	1.316
Observability	.088	.253	1.276
<b>Firm Resources</b>			
Company size	-.008	.915	1.100
<b>Marketing capabilities</b>	<b>.577</b>	<b>.000</b>	<b>1.805</b>
Organizational learning	.041	.612	1.403
Employees IT knowledge	-.017	.837	1.576
Market orientation	-.077	.344	1.438
<b>Individual Characteristics</b>			
Top management support	-.076	.447	2.194
Attitude toward change	-.142	.110	1.201
<b>Response to risk</b>	<b>.160</b>	<b>.062</b>	<b>1.582</b>

The above table shows that for the imposed dimensions model, the independent factors account for 35.8% of the variance in web adoption represented by the adjusted  $R^2$  (Hair et al., 1998). This is again a relatively adequate level of explanatory power given the sample size and the number of independent variables considered. Additionally, the significant F, as presented in the table, reflects a significant value of .000. These results support the suggested conceptual framework. The table shows that from the thirteen imposed determinants of web adoption, two are positively correlated and significant in relation to web adoption. One factor is negatively correlated and significant in relation to web adoption. The magnitude of the relationships is presented by the beta coefficients.

Beta values show that marketing capabilities is the variable that has the largest influence on web adoption with a beta value of .586 ( $p = .000$ ). Following that is the perceived risk with a beta of  $-.182$  ( $p = .023$ ). Following that is response to risk with a beta of .160 ( $p = .062$ ). It is worth noting at this point that these results closely match the results of the emergent regression model whereby the same factors turned out significant in both models.

Again before examining this model, an assessment of the multicollinearity in the model was conducted and no high degree of multicollinearity was found within the model and thus the model is suitable for hypothesis testing.

## **10.6 Hypotheses Results**

In order to formally test the hypotheses outlined in Chapter 4 this chapter will initially use only the quantitative results. Testing the hypotheses required an analysis and evaluation of the results across different measures of the dependent variable and different configurations of the independent variables which produced contradictory results for many of the constructs. Moreover, findings were not entirely consistent across all models. As mentioned in chapter four, this research used a single set of hypotheses to measure both likelihood and extent of adoption because the same factors are seen as relevant to both decisions but the strength of their impact may vary. However, while designing the questionnaire and as explained earlier in this chapter, a number of approaches were used to measure adoption of the web. A simple and crude measure was used to measure adopt versus not adopt and sell versus not sell on the web. While a richer and more sophisticated measure of percentage sales on the web was used to measure the simple versus sophisticated adoption. These different measurement methods used resulted in different results that made analysis more complex. Additionally, as mentioned in the previous chapter, because the results of factor analysis were not as expected and some differences existed between the emergent factors from factor analysis and the hypothesized constructs, two models being the imposed model and the emergent model were used for the analysis. This matter added to the complexity of the analysis process because it resulted into six different models. Testing the hypotheses relied more heavily

on the emergent model when the relevant construct appeared as an emergent factor. Otherwise the the imposed model was used. The following table provides a summary of the results for each construct across the six models. Whenever a factor did not appear as an emergent one, the box was left blank.

### **Summary of Results**

<b>Construct</b>	<b>Adopt Vs Non-adopt (logistic-imposed)</b>	<b>Adopt Vs Non-adopt (logistic-emergent)</b>	<b>Simple Vs Sophisticated (logistic-imposed)</b>	<b>Simple Vs Sophisticated (logistic-emergent)</b>	<b>Simple Vs Sophisticated (multiple-imposed)</b>	<b>Simple Vs Sophisticated (multiple-emergent)</b>
Relative Advantage	(+) sig.		N.S.		N.S.	
Compatibility	N.S.		N.S.		N.S.	
Observability	N.S.	(-) sig.	N.S.	N.S.	N.S.	N.S.
Complexity	(-)sig.	(-) sig.	N.S.	N.S.	N.S.	N.S.
Perceived risk	N.S.		(-) sig.		(-) sig.	
Size	N.S.	(+) sig.	N.S.	N.S.	N.S.	N.S.
Employees IT knowledge	(-) sig.	(-) sig.	N.S.	N.S.	N.S.	N.S.
Marketing capabilities	(-) sig.	N.S.	(+) sig.	(+) sig.	(+) sig.	(+) sig.
Organizational learning	(-) sig.	N.S.	N.S.	N.S.	N.S.	N.S.
Market orientation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Top management support	(+) sig.		N.S.		N.S.	
Attitude toward risk	(+)sig.		N.S.		N.S.	
Response to risk	N.S.	N.S.	(+) sig.	(+) sig.	(+) sig.	(+) sig.

Having provided a comparative summary of the results of each construct across the six models the following table summarizes the main findings of the research followed by a detailed discussion of each hypothesis.

**Table (10.7): Results of Hypotheses Testing**

Proposed Hypotheses	Emergent/Imposed Models		Accepted		Comments
	Beta	Sig.	Simpl e	Complex	
H1 The perceived relative advantage of the web will be positively related to web adoption.	Imposed Model		Yes	No	Positive relationship exists between relative advantage and Web adoption.
	2.073	0.032			
H.2 The perceived compatibility of the web will be positively related to web adoption.	Imposed Model		No	No	Insignificant relationship exists between compatibility and Web adoption.
	0.228	0.693			
H.3 The perceived observability of the web will be positively related to web adoption.	Imposed Model		Ambiguous	No	Insignificant relationship exists between observability and Web adoption.
	-0.663	0.181			
H.4 The perceived complexity of the web will be negatively related to web adoption.	Imposed Model		Yes	No	Negative relationship exists between complexity and Web adoption.
	-0.805	0.040			
H.6 The perceived risks associated with the web will be negatively related to web adoption.	Imposed Model		No	Yes	Negative and significant relationship exists between perceived risk and Web adoption.
	-0.182	0.023			
H.7 The size of a travel agent will be positively related to Web adoption.	Imposed Model		Ambiguous	No	Insignificant relation exists between company size and Web adoption.
	0.261	.837			
H.8 Employees IT knowledge will be positively related to web adoption.	Emergent Model		No	No	Insignificant relationship exists between employees' IT knowledge and Web adoption
	0.101	0.966			
H.9 Marketing capabilities within the company will be positively related to Web adoption.	Emergent Model		Ambiguous	Yes	Positive and significant relationship between marketing capability and Web adoption
	1.083	0.000			
H.10 Organizational learning will be positively related to Web adoption.	Emergent Model		Ambiguous	No	Insignificant relationship exists between organizational learning and Web adoption
	-0.233	0.376			
H.11 Market orientation will be positively related to web adoption.	Emergent Model		No	No	Insignificant relationship exists between market orientation and Web adoption.
	-0.399	0.297			
H.12 Top management support will be positively related to web adoption.	Imposed Model		Yes	No	Positive and significant relationship exists between top management support and Web adoption
	3.733	0.001			
H.13 Management's attitude toward change will be positively related to web adoption.	Imposed Model		Yes	No	Positive and significant relationship exists between management's attitude toward change and Web adoption
	2.569	0.020			
H.14 Management's response to risk will be positively related to web adoption.	Emergent Model		No	Yes	Positive and significant relationship exists between management's response to risk and Web adoption
	0.521	0.082			

The above table summarizes the main findings of the research based on hypothesis testing. This research results indicate that management factors are important for initial

adoption decision while marketing capabilities drive more complex adoption. Following is a separate interpretation of each of the research hypotheses with respect to either the emergent or the imposed model as presented in the table above.

In interpreting each hypothesis, the findings from the quantitative analysis will be triangulated with the results of the qualitative work and the literature wherever possible. As mentioned earlier the operationalization of web adoption in the qualitative work was slightly different from the one used in the quantitative work here. Operationalization in the qualitative work was based on the features present on these companies' web sites whether basic or advanced. The quantitative survey more simply looked at whether companies use the web for communication only or for communication and transactions by actually selling online, in determining the level of sophistication of companies. This slight difference in the way the construct was operationalized could present a limitation. However, as mentioned earlier, these two approaches overlap, i.e. those who are simple adopters are essentially using the web for basic promotion while those who are sophisticated adopters are using the web for more complex promotion and/or distribution. Two out of the three companies classified as sophisticated adopters in the qualitative work distributed their travel services online and the third one had many advanced features on its website that made it eligible as a sophisticated adopter.

Moreover, this should not present a problem since the sample of qualitative research is small (Malhotra, 1996) which means that the conclusive output of the quantitative work and the tentative output of the qualitative work still provides a meaningful basis for triangulation.

#### **10.6.1 Perceived Innovation Attributes**

Based on the literature review, perceived innovation attributes being relative advantage, compatibility, observability, trialability, complexity and perceived risk affect the adoption of innovations (Rogers, 1963; Bauer, 1960). More analysis of each of these factors will be explained in the interpretation of the following hypotheses.

***H1 argues that the perceived relative advantage of the web will be positively related to web adoption.***

Relative advantage has a positive and significant relationship in the adoption versus non-adoption logistic regression model, and a non significant relationship in the simple versus sophisticated regression models. The imposed model was used to analyze the results of this construct as it did not appear as a separate factor in the emergent model. It is worth mentioning, however, that web benefits, which is a related construct, has a positive and significant relationship in the adoption versus non-adoption emergent logistic model. The positive and significant relationship between relative advantage and adoption versus non adoption is in line with the results in the literature review whereby relative advantage was found to have a significant and positive relationship with web adoption as can be seen in table (3.3) in chapter 3. Additionally, it is in line with the results of the qualitative work which showed that while adopters were aware of the relative advantage of the web in terms of the benefits that it could bring to their business, non-adopters could not see the usefulness of this new medium. However, the non significant relationship found in the simple versus sophisticated regression models is difficult to explain and contradictory to the majority of previous researches. It is also contrary to the results of the qualitative work that showed that relative advantage had an effect on more sophisticated levels of adoption. One possible explanation is that at this level of adoption, companies already have an adequate awareness of the advantages of the web and thus it is not relevant as a factor when considering more advanced levels of adoption. Given the significance of relative advantage to the adoption versus non-adoption decision and the explanation that relative advantage does not affect the simple versus sophisticated adoption decision, this hypothesis will be accepted while acknowledging that relative advantage has most relevance to the early levels of adoption.

## ***H.2 The perceived compatibility of the web will be positively related to web adoption.***

Compatibility has a non significant relationship in all six models. The imposed model was used to analyze the results of this construct as it did not appear as a separate factor in the emergent model. Although a positive relationship was expected to exist between compatibility and web adoption and although the qualitative work showed that the web was in line with adopters' beliefs and how they would like to work, these results are somehow consistent with previous research results as compatibility was not

consistently found to have a positive and significant relationship with innovation adoption. Some researchers found no relation (Sultan and Chan, 2000). Similar to relative advantage, the non-significant relationship with regard to advanced levels of adoption maybe explained as companies considering complex adoption have already adopted the web and can see it being compatible with their current operations and thus are considering more advanced levels of adoption. Based on the above, this hypothesis will be rejected.

***H.3 The perceived observability of the web will be positively related to web adoption.***

Five out of the six models show a non-significant relationship between observability and web adoption. Only one shows a significant negative relationship. As mentioned in the previous chapter, observability was directly included in the regression analysis since it is a single item construct. The non significant relationship indicates that the adoption decision was not based on observing how other companies have benefited from their adoption of the web. This is inconsistent with the results of the qualitative work that showed that observability did have an impact on the degree of adoption. It is also inconsistent with previous literature results that found that a positive relationship exists between observability and innovation adoption. The significant negative relation, however, that appears for the logistic adoption versus non-adoption model is contradictory to expectation and is difficult to explain. It may simply be chance that observability turned out significant in one of the models. However, the dominant body of evidence is that it is not significant and thus this hypothesis will be rejected.

***H.4 The perceived complexity of the web will be negatively related to web adoption.***

Complexity has a significant negative relation for the adoption versus non-adoption model and a non-significant relation for the simple versus sophisticated models. These results show that when considering whether to adopt or not adopt the web, the difficulty of using the web is an influential factor whereby companies who perceive adopting the web as being complex are less likely to adopt. On the other hand, for more advanced levels of adoption complexity is not a relevant factor and that is why it did not turn out significant because these companies already know how to use the web and are considering more sophisticated levels of adoption. These results are consistent with previous research that found that a negative relationship exists between

complexity and innovation adoption. Additionally, these results are consistent with the qualitative work that showed that while complexity acted as a barrier to adoption/non-adoption decision; it did not affect simple or sophisticated levels of adoption. Therefore, this hypothesis will be accepted.

***H.5 The perceived trialability of the web will be positively related to web adoption.***

As mentioned in the methodology chapter, trialability was a bit of a problematic factor. The construct consisted of two statements on which respondents gave yes or no as answers. Although the researcher recognized that trialability is a difficult to measure construct, it was still included in the questionnaire as it was thought that it would give an indication of whether these companies have tried to put their services on the web or even sell through popular sites before making the decision to actually adopt the web. In practice when the data was collected it was found that everyone who has tried the web has also adopted. This might suggest that we can not test this construct as it is perfectly correlated with the dependent variable. Additionally, a (1-7) likert scale was not used for this construct due to the difficulty of understanding this concept by respondents in both the in-depth interviews and the piloting stage. Moreover, trialability is a difficult concept with regards to sophisticated adoption of the web as it is difficult to *try* sales over the web and it is a very crude measure by its nature. Therefore, due to the above reasons this hypothesis was not tested.

***H.6 The perceived risks associated with the web will be negatively related to web adoption.***

Perceived risk has a non significant relation with adoption versus non-adoption and a significant negative relation with simple versus sophisticated adoption. This result might indicate that perceived risk is not a relevant factor when considering adoption of the web in simple terms because companies at this level are not yet aware of the risks associated with web adoption and so it does not affect their decision to adopt/not adopt the web. As for the more advanced levels of adoption which includes selling on the web, more risks are associated with making online payment and securing the full transaction online. Thus those considering more advanced levels of adoption are aware of these risks and it has a negative impact on them. This result is somehow consistent with the result of the qualitative work where simple and sophisticated adopters were found to have varying views in this regard but most mentioned that

they believe that perceived risk is a barrier to web adoption in Egypt. However, perceived risk was also found to negatively affect the adoption/non-adoption decision in the qualitative work. This result is also consistent with previous literature results that showed that a negative relationship exists between perceived risk and innovation adoption. Therefore, this hypothesis will be accepted.

### **10.6.2 Firm Resources**

Based on literature review and the conceptual framework which considered the resource based view of the firm, organizational factors affecting innovation adoption are company size, employees' IT knowledge, marketing capabilities, organizational learning and market orientation. More analysis of each of these factors will be explained in the interpretation of the following hypotheses.

#### ***H.7 The size of a travel agent will be positively related to web adoption.***

Size showed a non significant relation for all models except for one model where it showed a significant positive relation as can be seen in the above table. Previous literature research results on the influence of organization size on innovation adoption have been inconsistent. Some researches showed a positive relation indicating that larger organizations because of access to resources, other researches found a negative relation indicating that smaller companies because of more flexibility are more likely to adopt the web. Moreover, other researches showed a non significant or no relation. The results of this research are in line previous literature results that found a non significant relationship. They are however, inconsistent with the results of the qualitative work that showed that size had a positive effect on the degree of adoption. Nevertheless, given the balance of evidence, this hypothesis will be rejected.

#### ***H.8 Employees IT knowledge will be positively related to web adoption.***

Employees IT knowledge was found to have a non significant relation for all models except for the adoption versus non-adoption (emergent and imposed) logistic regression models where a significant negative relation was found. These results are contradictory to previous literature research results that found a significant positive relation between employees IT knowledge and innovation adoption. They are also inconsistent with the results of the qualitative work that showed that employees' IT knowledge had a positive effect on the degree of web adoption. Moreover, the

significant negative relation can not be explained as employees IT knowledge is expected to foster adoption and not inhibit it. Therefore, this hypothesis will be rejected while noting that IT knowledge does have some relevance to the simple adoption process.

***H.9 Marketing capabilities within the company will be positively related to web adoption***

Marketing capabilities were found to have significant positive relation for all models except for the adoption versus non adoption (emergent and imposed) regression models where it showed contradictory results between the imposed and emergent models one being non significant and the other being significant with a negative relation. Marketing capabilities deal with the ability of travel agents to develop, promote and distribute travel services over the web. The research results show that this factor is more relevant to the more advanced levels of adoption since the results of all the simple versus sophisticated models consistently show a significant positive relation between marketing capabilities and web adoption. This result is consistent with the results of the qualitative work that showed that marketing capabilities had a significant effect on simple and sophisticated levels of adoption. It is also consistent with previous literature results that showed that a positive relationship exists between marketing capabilities and innovation adoption. The non significant relation in the adoption non adoption emergent model further confirms that this factor is not relevant in the adoption/ non-adoption context. Therefore, this hypothesis will be accepted in relation to simple versus sophisticated adoption.

***H.10 Organizational learning will be positively related to web adoption***

Organizational learning showed a non significant relation for all models except for the imposed adoption versus non adoption logistic regression model where a significant negative relation was found. These results are contradictory to previous literature research results that found that a significant positive relation exists between organizational learning and innovation adoption. They are also inconsistent with the results of the qualitative work that found a significant positive relationship between organizational learning and the degree of web adoption. Additionally, the significant negative relation found can not be explained as organizational learning should foster and not hinder web adoption. Therefore, this hypothesis will be rejected.

***H.11 Market orientation will be positively related to web adoption.***

Market orientation showed a non significant relation with web adoption across all models. It was expected that the more the companies are oriented toward obtaining information about customers, competitors and the market in general, the more likely they are to adopt the web because they have more information about market dynamics. Additionally, the results of the qualitative work provided evidence that having an external focus and watching competitors' steps had a positive effect on the decision to adopt the web. On the other hand, a lack of awareness of the competition and world trend had a negative effect on the decision to adopt the web. However, this research found a non significant relation. This result is inconsistent with previous literature results that found that a positive relationship exists between market orientation and innovation adoption. The result here might be due to the fact that companies in Egypt do little marketing in the real sense by developing a product or acquiring a certain technology after identifying customers' needs. They act more like sales agents. Additionally, companies do not study competitors' strategies and react accordingly. Companies in Egypt, to a big extent act independently. Moreover, research is not highly relied on in Egypt. Therefore, this hypothesis will be rejected.

**10.6.3 Individual Factors**

Based on literature review the individual factors that affect innovation adoption are related to the characteristics of the individual owning or managing the organization. These are top management support, attitude toward change and response to risk. These factors are more relevant when dealing with SMEs, as in this research because in these companies the owner is usually the manager and the decision maker at the same time and thus his/her characteristics influence the adoption decision. More analysis of each of these factors will be explained in the interpretation of the following hypotheses

***H.12 Top management support will be positively related to web adoption.***

Top management support did not appear as a separate factor when factor analysis was conducted. Therefore the researcher relied on the imposed model in testing this hypothesis. The results show that whereas top management support has a significant positive relationship with adoption versus non-adoption, it has a non significant

relationship with simple versus sophisticated adoption. These results indicate that the support of management is vital when considering whether to adopt or not adopt the web. In the more advanced levels of adoption, however, management support is not relevant because these companies have already adopted the web and are now more considering more sophisticated levels of adoption and thus this means that management already supported the idea of adoption in the first place. These results are partly consistent with the results of the qualitative work that showed that top management support had an influence on adoption/non-adoption and also on simple and sophisticated levels of adoption. These results are also consistent with previous literature results that showed that a positive relationship exists between top management support and innovation adoption. Therefore, this hypothesis will be accepted in relation to adoption versus non-adoption.

***H.13 Management's attitude toward change will be positively related to web adoption.***

Management's attitude toward change did not appear as a separate factor when factor analysis was conducted. Therefore the researcher relied on the imposed model in testing this hypothesis. The results show that whereas management's attitude toward change has a significant positive relationship with adoption versus non-adoption, it has a non significant relationship with simple versus sophisticated adoption. These results indicate that when considering a shift from the traditional ways of doing travel business to the web, management's attitude toward change whether there are conservative or more have willingness to make a change, does affect firms' adoption/non-adoption decision. These results are partly consistent with the results of the qualitative work that showed that management's attitude toward change had an influence on adoption/non-adoption and also on sophisticated levels of adoption. They are also consistent with previous literature results that showed that a positive relationship exists between the decision maker's attitude toward change and innovation adoption.

In more sophisticated levels of adoption, however, it is assumed that management already had the willingness to make the changes brought about by web adoption when they accepted to adopt the web earlier on. Thus it is not relevant in the context of more advanced levels of adoption. Therefore, this hypothesis will be accepted in relation to adoption versus non-adoption.

#### ***H.14 Management's response to risk will be positively related to web adoption.***

Management's response to risk has a significant positive relation with simple versus sophisticated adoption and no significant relationship with adoption versus non adoption. These results show that companies willing to make more advanced levels of adoption of the web are more likely to take the risks associated with the web such as security risks related to online payment. These results are somehow in line with the results of the qualitative work that showed that while non-adopters had a passive response toward risk, simple and interactive adopters responded more positively toward the risk associated with web adoption. These results are in line with previous literature that found that a positive relationship exists between management's response to risk and innovation adoption.

As for adopters versus non-adopters, the non-significant relation is in line with the results of perceived risk which also showed a non significant relation with adoption versus non adoption indicating that these companies are not aware of the risks associated with the web and thus again here their response to risk is also not relevant. Therefore, the positive response to risk is more relevant to the advanced levels of web adoption. Therefore, this hypothesis will be accepted in relation to simple versus sophisticated adoption.

### **10.7 Conclusion**

This chapter presented and interpreted the empirical findings of this research. The chapter presented six regression models as explained above based on both the emergent factors that resulted from factor analysis and the hypothesized constructs based on the literature review and the conceptual framework. The chapter considered one adoption versus non adoption model and two simple versus sophisticated adoption models. The chapter includes the main findings of the research that resulted from testing the hypotheses. It was found that management factors are important for the initial adoption decision whereas marketing capabilities are important for the sophisticated adoption. As for management factors, this result is partly consistent with the results of the qualitative work that showed that top management support had an influence on adoption/non-adoption and also on sophisticated levels of adoption. As for marketing capabilities, this is consistent with the results of the qualitative work

that showed that marketing capabilities had a significant effect on simple and sophisticated levels of adoption.

Among the innovation attributes, relative advantage and complexity were found to be important for the initial adoption decision and not the more sophisticated adoption decision. This is somehow consistent with the qualitative work that found that in comparison to non-adopters, adopters were aware of the relative advantage of the web and this affected their adoption decision. However, contrary to the results here, the qualitative work also found that relative advantage has a positive effect on more sophisticated levels of adoption. As for complexity, the results here are consistent with the results of the qualitative work that found that complexity had a negative effect on the adoption versus non-adoption decision. Perceived risk was found to affect the more sophisticated adoption and not the initial adoption decision. This result is somehow consistent with the result of the qualitative work where simple and interactive adopters were found to have varying views in this regard but most mentioned that they believe that perceived risk is a barrier to web adoption in Egypt. However, perceived risk was also found to negatively affect the adoption/non-adoption decision in the qualitative work.

Surprisingly, except for marketing capabilities, firm specific factors were not found to affect both the initial and the more sophisticated adoption decisions. This result is consistent with the results of the qualitative work that showed that marketing capabilities had a significant effect on simple and sophisticated levels of adoption. Contrary to the quantitative results here, the qualitative work found other firm specific factors namely; company size, employees' IT knowledge, organizational learning and market orientation to have a positive effect on the degree of web adoption.

# **Chapter Eleven**

## **Research Conclusions and Limitations**

### **11.1 Research Contributions and Conclusions**

This study has contributed to the body of knowledge, particularly in the web marketing discipline. The outcomes of this research have enhanced the understanding of the effect of innovation attributes, firm resources and individual factors on firm adoption and which factors are critical for the different levels of adoption. This section will discuss the contributions made by this study from two perspectives: theoretical and managerial.

#### **Theoretical Contributions**

The main contribution of this research is an empirical contribution through investigating the concept of web adoption in the travel industry in Egypt which presents an important extension to the web adoption studies that have focused largely on developed countries. As mentioned in the tourism chapter, Mavromatis and Buhalis (2003) conducted a survey on 76 tourism companies in Egypt including travel agents, hotels and transportation companies to discover the benefits/barriers as well as the incentives to use the web by travel companies in Egypt. Their study however did not focus on the factors affecting web adoption by these companies including innovation attributes, firm resources and individual factors. Additionally, they did not attempt to discover whether travel companies merely adopt versus not-adopt the web or whether there are different levels of adoption, i.e. information provision, online sales and so on. Moreover, they did not focus specifically on travel agents who have been the earliest companies in comparison with other travel companies in Egypt on the web and they had a small sample size. This research thus is the first research to be conducted in Egypt on web adoption factors by travel agents from a level perspective. Thus this study has made an original contribution toward the current body of knowledge on web adoption through this empirical contribution. Thus an empirical contribution of this research is its ability to identify critical factors that affect different levels of web adoption by firms. Marketing capability for example was found to be an important factor affecting simple versus interactive adoption whereby those who actually

sell on the web need to have the capability to develop, promote and distribute a travel service over the web.

The theoretical implications of this research include integrating both Roger's theory of innovation adoption as well as the Resource-based View (RBV) of the firm to discover the relationship between three groups of factors that are innovation attributes, firm resources and individual factors and web adoption. Including the RBV along with Roger's model serves the business to business context of this research and has been rarely used in this context in literature on innovation adoption. Other studies have utilized factors that might be considered as resources including company size and employees' IT knowledge, but have not necessarily done so in a systematic way and have not conceptualized adoption in this way. This research has found that innovation attributes are not the whole story when studying firms' adoption of the Web. Firm resources also affect firms' adoption decision whereby marketing capabilities were found to affect sophisticated levels of adoption.

Although the model includes firm adoption of the web as the dependent variable which might indicate a dichotomous variable, the questionnaire attempted to measure different levels of adoption. While designing the questionnaire and as explained earlier in chapter ten, a number of approaches were used to measure adoption of the web. A simple and crude measure was used to measure adopt versus not adopt and sell versus not sell on the web. While a richer and more sophisticated measure of percentage sales on the web was used to measure the simple versus sophisticated adoption. This way of conceptualizing adoption represents another theoretical contribution. The following will review the findings of the research regarding the effect of each of the three groups of factors studies and web adoption.

#### A- Relationship between innovation attributes and web adoption

Relative advantage, complexity and perceived risk were found to be significant factors affecting web adoption. Relative advantage has a significant positive relationship with the adoption versus non-adoption (imposed) logistic regression model and a non-significant relationship with the simple versus sophisticated regression models. This might indicate

that relative advantage is important for the initial adoption decision and not for the sophisticated adoption decision where companies are already aware of the attributes of the web. This result is consistent in part with the qualitative work that found that relative advantage affects both the initial adoption decision and also more sophisticated levels of adoption. Complexity has a significant negative relation for the adoption versus non-adoption model and a non-significant relation for the simple versus sophisticated models. This indicates that when considering whether to adopt or not adopt the web, the difficulty of using the web is an influential factor whereby companies who perceive adopting the web as being complex are less likely to adopt. On the other hand, for more advanced levels of adoption complexity is not a relevant factor. These results are consistent with the qualitative work that showed that while complexity acted as a barrier to the initial adoption decision; it did not affect more sophisticated levels of adoption. These results are also consistent with previous research as shown in table (3) in chapter the literature review chapter 3.

Perceived risk has a non significant relation with adoption versus non-adoption and a significant negative relation with simple versus sophisticated adoption. This result might indicate that perceived risk is not a relevant factor when considering adoption of the web because companies at this level are not yet aware of the risks associated with web adoption and so it does not affect their decision to adopt/not adopt the web. As for the more advanced levels of adoption which includes selling on the web, more risks are associated with making online payment and securing the full transaction online. Thus those considering more advanced levels of adoption are aware of these risks and it has a negative impact on them. This result is somehow consistent with the result of the qualitative work where simple and interactive adopters were found to have varying views in this regard but most mentioned that they believe that perceived risk is a barrier to web adoption in Egypt. Additionally, this result is consistent with the results of the web survey that provided evidence that the web is being used much more for promotion rather than for distribution since most travel agents are using it basically for information provision. This was later explained by respondents in the in-depth interviews who said that security concerns acted as an obstacle to more advanced levels of adoption. Security concerns of businesses might

be related to security concerns of customers who are unwilling to provide their credit card information and pay online.

However, contrary to the result here, perceived risk was also found to negatively affect the adoption/non-adoption decision in the qualitative work.

Compatibility shows a non-significant relationship across all models indicating that this might not be an important factor to initial and more sophisticated adoption decisions. This is contrary to the qualitative work results where compatibility was found to affect the degree of web adoption. Observability shows a non-significant relationship with five of the six models used and a negative relation in one (emergent logistic adoption versus non adoption model). Again, this is contrary to the qualitative work results where observability was found to affect the degree of web adoption. Trialability as mentioned in the analysis chapter ten was not tested due to the explained problems with the factor itself. It is worth mentioning that these results might indicate that perceived innovation attributes are important for both the initial adoption decision and for more advanced levels of adoption.

#### B-Relationship between firm resources and web adoption

As for firm resources marketing capability was found to be a highly significant factor with a positive relationship with simple versus sophisticated adoption of the web. Marketing capability deals with the ability of travel agents to develop, promote and distribute travel services over the web. The research results show that this factor is more relevant to more sophisticated levels of adoption since the results of all the simple versus sophisticated models consistently show a significant positive relation between marketing capabilities and web adoption. Thus when it comes to more sophisticated levels of adoption of the web having the ability to market a travel product on the web becomes fundamental. Additionally, the non significant relation in the adoption/ non adoption logistic (imposed and emergent) models further confirms that this factor is not relevant to the initial adoption decision. This result is consistent with the results of the qualitative work that showed that marketing capabilities had a significant effect on sophisticated levels of web adoption. This result is also consistent with the result of the web survey that provided evidence that most travel agents are simple adopters and that they need to develop their marketing capabilities

in order to attract more customers. This could be done through linking to popular websites and focusing more on providing augmented and potential services that exceed customers' expectations.

The other factors under firm resources being company size, employees' IT knowledge, market orientation and organizational learning showed contradictory results including negative relations and non-significant relationship with web adoption. These results are inconsistent with the qualitative work that found a positive relationship between these factors and the degree of web adoption.

#### C-Relationship between individual factors and web adoption

As mentioned in the literature review chapter individual factors are particularly relevant here because of the focus on SMEs where the owner or manager makes all the decisions and thus his/her individual characteristics have an influence on the adoption decision. The three individual factors studied being top management support, management's response to risk and attitude toward change were all found to have a significant positive relationship with web adoption. Top management support and management's attitude toward change were found to be positively significant with adoption versus non-adoption whereas management's response to risk was found to be positively significant with simple versus sophisticated adoption.

Top management support has a highly significant positive relationship with adoption versus non-adoption and a non significant relationship with simple versus sophisticated adoption indicating that the support of management is vital when considering whether to adopt or not adopt the web. In the more advanced levels of adoption, however, management support is not relevant because these companies have already adopted the web and are now considering more sophisticated levels of adoption and thus this means that management already supported the idea of adoption in the first place. These results are partly consistent with the results of the qualitative work that showed that top management support had an influence on adoption/non-adoption and also on the degree of adoption.

Similarly management's attitude toward change has a significant positive relationship with adoption versus non-adoption and a non significant relationship with simple versus sophisticated adoption indicating that when considering a shift from the traditional ways of doing travel business to the web, management's attitude toward change whether they are conservative or are willing to make a change, does affect form's adoption/non-adoption decision. In more sophisticated levels of adoption, however, it is assumed that management already had the willingness to make the changes brought about by web adoption when they accepted to adopt the web earlier on. Thus it is not relevant in the context of more advanced levels of adoption. These results are partly consistent with the results of the qualitative work that showed that management's attitude toward change had an influence on adoption/non-adoption and also on the degree of adoption.

Finally, management's response to risk has a significant positive relation with simple versus sophisticated adoption and no significant relation with adoption versus non adoption indicating that companies willing to make more advanced levels of adoption of the web are more likely to take the risks associated with the web such as security risks related to online payment. These results are somehow in line with the results of the qualitative work that showed that while non-adopters had a passive response toward risk, simple and interactive adopters responded more positively toward the risk associated with web adoption.

To summarize, the results of this research indicate that factors affecting adoption versus non-adoption are different from those affecting simple versus sophisticated adoption. Whereas top management support turned out to be highly significant for adoption versus non-adoption, marketing capabilities turned out as highly significant for simple versus sophisticated adoption. Additionally relative advantage and complexity are significant factors for those companies considering whether to adopt or not and not for those considering more advanced levels of adoption. Moreover, perceived risk affects more advanced levels of adoption and not the adoption/non-adoption decision.

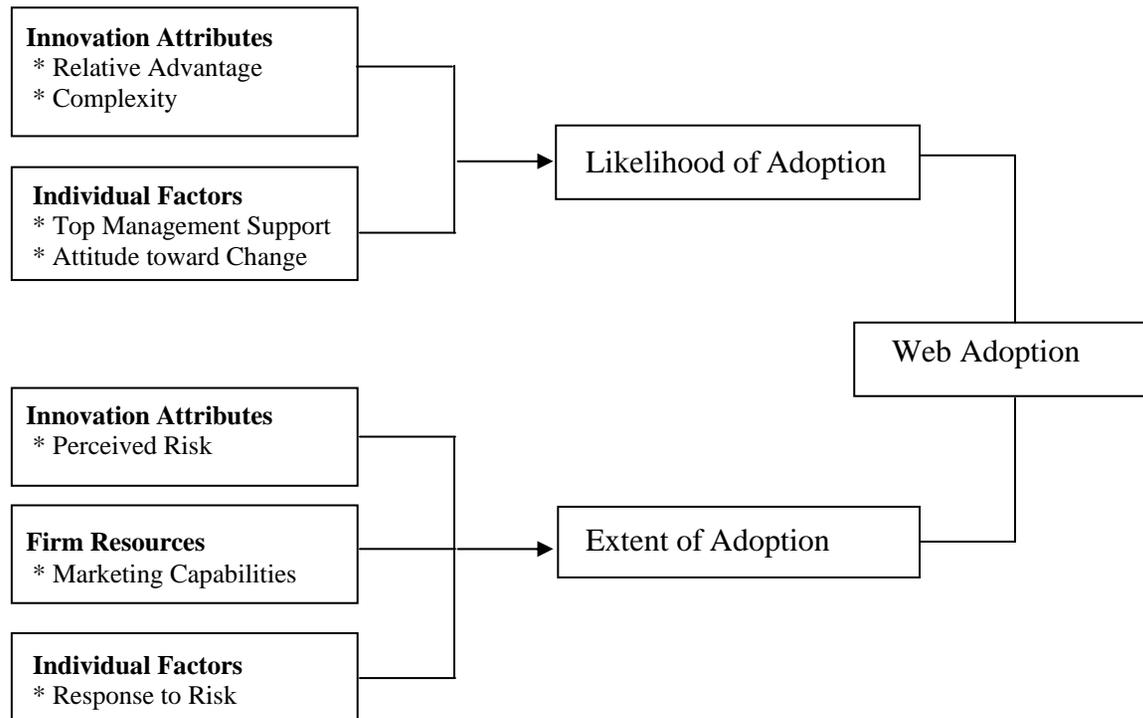
Additionally, the significant positive relationship between all individual factors studied and web adoption might indicate that for small and medium sized enterprises these factors are

of primary importance in comparison with innovation attributes and firm resources. SMEs are usually owned and managed by one person and this person is also the decision maker too and thus his/her characteristics have an important impact on the adoption/ non-adoption or simple/sophisticated adoption decisions.

To sum up, these results suggest that perceived innovation attributes are important for both the initial adoption decision and for more advanced levels of adoption. Additionally, management factors are important for the initial adoption decision whereas marketing capabilities are important for the more sophisticated adoption decision. Moreover, the web survey provided evidence that perceived risk had an influence on more advanced levels of adoption and that developing marketing capabilities was necessary for travel agents to move to more sophisticated levels of adoption by providing customers with services that exceed their expectations.

These results emphasize the fact that the adoption of the web is comprised of levels and that the critical factors affecting each level are different. Additionally, the results also suggest that small firms have different characteristic features than larger ones, and thus it important to study their innovative behaviour separately (Hausman, 2005). The large influence of the owner or manager whose own innovativeness being the main determinant of the firm's innovativeness is confirmed in the results of this research whereby all individual factors turned out to have a significant positive relationship with web adoption.

**Figure (11.1): Modified Conceptual Model of the Factors Affecting Firms' Adoption of the Web in the Travel Industry**



As can be seen from the above model, this research has found that management factors are important for the initial adoption decision whereas marketing capabilities are important for sophisticated adoption.

The model here contributes two things at the general level. First; innovation attributes are not the whole story when studying firms' adoption of the web. This research has found that firm resources also affect firms' adoption decision whereby marketing capabilities were found to affect sophisticated levels of adoption. Therefore, integrating RBV along with Roger's perceived innovation attributes provides a theoretical framework for studying firms' characteristics which has not been done before in research. Previous studies have included various factors under firm characteristics but have not necessarily done that in a systematic fashion and the theory has not been well developed. This is a contribution that this research has made to theory. The model presented in this research is a synthesis of Roger's innovation adoption model and the Resource-based View of the firm (RBV).

Second, this research found that different factors affect different levels of adoption. This implies that when studying innovation adoption by firms, it is important to consider the adoption process as quasi-continuous process that consists of different stages rather than a dichotomous process of adopt vs. non-adopt. The results of this research show that management factors namely; top management support, attitude toward change and response to risk are important for the initial adoption decision which might indicate that there should be a lot of focus on raising management's awareness of the web and encouraging them to adopt it. Additionally, marketing capabilities are important for more sophisticated levels of adoption which implies that firms can not expect more advanced levels of adoption unless they are able to develop the skills required to, promote and distribute their travel services online. Thus firms have to exert effort to develop this know-how in order to be able to assume sophisticated levels of adoption. The finding that different factors affect different levels of adoption is another contribution to theory that this research has done.

At the context level, this research is the first to be conducted in Egypt which represents an important extension to the web adoption studies that focused largely on developed countries and where there is no previous empirical work conducted. Additionally, it must be noted that it is unwise to generalize to all contexts but only to those that share similarities with Egypt. Thus, the results of this research may be generalizable to countries that share similarities with Egypt and may also be of relevance to SMEs in other sectors in Egypt. These similarities include offering a diverse tourism product like Egypt including cultural, heritage and seaside tourism; having an inbound tour operator sector that is dominated by SMEs where one person, usually the owner and general manager is in control and thus individual characteristics are important. Other similarities may include, being at an early stage of web adoption like Egypt and perhaps being less developed in terms of the infrastructure supporting online operations and securing online transactions. Additionally, having a culture that is close to the culture of Egypt as discussed earlier is another similarity that might indicate generalizability of results. The results of this research maybe generalizable to countries that share these similarities with Egypt like for example Syria, Yemen , Sudan and maybe Libya to some extent.

### **Managerial Contributions**

As it is necessary for any research to contribute to the body of knowledge within the discipline of study, it is also important to consider the managerial or practical implications of the study. This research presents important implications for travel agents in Egypt and for the travel industry in general. Policy makers could use the results of this research to develop more focused policies to motivate SMEs in the travel sector to adopt and use the Web for marketing purposes. The results of this research have the following implications for managers and policy makers.

The first managerial contribution relates to the finding that web adoption occurs in levels and that different factors affect different levels. This carries implications for consultants and institutions promoting the adoption of Web by travel agents who should realize that there are different levels of adoption and thus they need to focus on the relevant factors to each level. Additionally, third parties like web vendors who look for increased use of the

Web by travel SMEs should target their services at different segments of SMEs based on their current level of adoption.

The second managerial contribution is related to the finding that individual factors are highly influential on the adoption versus non-adoption decision.. This implies that when considering the adoption/non-adoption decision, it is necessary to focus on individual factors as they are the primary driver for this decision. Management support showing a highly significant relationship with web adoption indicates that individuals can have a very significant influence on the decision to adopt or not adopt the web. Additionally it suggests that there should be effort exerted in terms of increasing management's awareness of the importance of the web to the tourism industry and the benefits that travel agents can reap from adopting the web. This might have implications for the government that needs to develop a program aimed at raising the level of awareness of these businessmen and encouraging them to adopt the web. The government can contribute to web adoption by travel agents by conducting informational campaigns to increase awareness, by giving financial support and also by increasing the knowledge of English and facilitating access to the web. Additionally, management's attitude toward change having a significant positive relationship with adoption versus non-adoption and a non significant relationship with simple versus sophisticated adoption indicate that when considering a shift from the traditional ways of doing travel business to the web, management's attitude toward change whether they are conservative or are willing to make a change, does affect firms' adoption/non-adoption decision. This result might indicate that one of the main reasons why travel companies of Egypt refrain from adopting the web lies in the resistance to change which might be an issue of culture. An implication here might be that managers must recognize that communication is important for a positive company culture. Additionally, managers should especially communicate with workers who feel threatened by the implementation of the web and explain to them how their tasks and duties will be affected. Another implication is for policy makers like the tourism federation and other tourism governing institutions who need to explain to travel companies the benefits of the web and encourage them to adopt.

Another contribution lies in the finding that marketing capabilities turned out to have a highly significant positive relationship with simple versus sophisticated levels of adoption. This result implies that when moving from simple to sophisticated levels of adoption managers should focus on building marketing capabilities with the firm. As mentioned earlier in this research and in line with the results of the in-depth interviews, most travel agents in Egypt act as sales agents to their tour operators abroad and do not do marketing for their travel services. This might explain why most of the Egyptian travel agents who adopt the web are only simple adopters with only few ones exhibiting more sophisticated levels of adoption. Thus an implication for managers is that in order to move from simple to sophisticated levels of adoption, they should focus on developing the necessary capabilities that allow them to market their travel services online including the actual selling of these services. This requires both the necessary know-how and the infrastructure for selling online. This might first have implications for the government that needs to focus on creating the infrastructure needed for finalizing the travel transaction online such linking banks with travel agents. It might also have implications for web based vendors who need to create more sophisticated travel sites by creating databases that link the different travel parties together including travel agents, hotels, airlines, banks, etc. in order to facilitate a complete online transaction.

Another finding of this research that carries implications to managers is relevant to the perceived innovation attributes that turned out as significant in this research. Among the six attributes studied, relative advantage, complexity and perceived risk had significant relationships with web adoption. As for the adoption/non-adoption decision, relative advantage and complexity turned out to be influential factors indicating that travel companies might choose not to adopt the web because of a lack of awareness of the benefits that the web might bring to their business or because of the difficulty associated with using the web. A major implication of this finding is that increasing SMEs awareness of the benefits of the Web would have a positive effect on adoption. Awareness could be increased through providing better education and training. Seminars could be useful in facilitating adoption and could be provided by non-profit agencies and community groups. As for complexity, the companies interviewed actually mentioned

that most of their employees do not have a reasonable background on how to use a computer to start with, and a large number of them do not have the appropriate experience required to market tourism products not only electronically but also physically. Thus the complexity associated with the understanding and use of computers and the web acted as a barrier to adoption by these companies. This might imply that companies should train their employees on how to use the web in order to reduce the resistance that they might have to this new medium and to decrease the level of difficulty that they encounter when using it. A disruptive technology like the Web that alters the way work is done must be accompanied by modes of training for all employees. This might also have implications for web focused vendors who can use a push strategy to market for their web services by providing travel companies with, for example, free IT training to staff on how to use the web and how to deal with all features present on it.

Additionally, perceived risk being an influential factor affecting simple versus sophisticated levels of adoption implies that managers, through coordinated efforts with the governing travel institutions and banks, should build the necessary infrastructure allowing the finalization of a travel service purchase online. The qualitative work showed that perceived risk associated with conducting online payment transactions seemed to be a main concern. Thus in order to move from simple to more advanced levels of adoption this acted as a main barrier. This implies that the government should build the necessary infrastructure to allow online payment of travel services to be conducted. The government must also play an active role to ensure that the cyber laws could effectively regulate online transactions and to protect against virtual theft and hacking. An implication for web providers could be that they need to provide anti-virus systems to prevent spy ware, viruses and hackers.

Finally this research outlines the factors that have affected travel companies to adopt the web and to move from simple to more advanced levels of adoption and thus provides managers with valuable information on how to enhance drivers and overcome challenges to web adoption in order to make maximum use of the web. Knowledge of these factors and the critical ones, in particular, provides travel managers with a well-studied

framework that can aid them with their decisions on web strategies through better management of the factors that affect the web adoption. Additionally, gaining insights into the factors that have influenced other firms' decisions to adopt the web may provide useful information to firms that have not yet adopted the web or who are reassessing their original decisions.

## **11.2 Limitations and Directions for Future Research**

As any social science research, this research has a number of limitations that can be summarized as follows. First, as mentioned earlier in chapter ten, web adoption was measured in two different ways being; a simple and crude measure of do you adopt or not adopt (sell/ not sell) the web and a more sophisticated measure of how much do you sell on the web. Both of these measures have their weaknesses and it is not clear which is best so it was decided that together, these two different measures will be used to measure web adoption in this research. However, for the more sophisticated measure of how much do you sell on the web only 79 companies out of the 150 adopters do sell on the web of which 11 refused to answer the question. The rest of the companies do not sell on the web and thus these were coded as zeros resulting in a large number of zeros for this analysis.

Second, the sample size represents a limitation as the researcher could only reach 178 usable questionnaires out of which 4 outliers were identified resulting in 174 cases for analysis. The problems encountered by the researcher during data collection including the difficulty of taking an appointment and the uncooperative attitude and a lack of interest in participating in the research by respondents largely affected the sample size of this research. Third, the selected sample is a convenience sample and in spite of the advantages of selecting such a sample, it places some limitations in terms of generalizability of the results. Fourth, this research used a single set of hypotheses to measure both likelihood and extent of adoption because the same factors were seen as relevant to both decisions but the strength of their impact may vary. However, while designing the questionnaire and as explained in chapter ten, a number of approaches were used to measure adoption of the web. This resulted in contradictory results for a number of the determinants of adoption studied and made analysis more complex since six different models were used to analyze data.

Fifth, the data and findings in the analysis chapters were derived from research in a single country and a single sector which is the tourism sector. This raises questions as to the generalizability of the results of this research to different cultures. As such the results and

discussions are applicable particularly to the Egyptian context, but may also provide insights to the travel industry in other countries.

The area of web marketing and in particular the adoption of the web by organizations is considered an important one and still needs more conceptual and empirical contributions. Hence, a number of directions for future research exist as follows.

Researchers can apply the framework of the determinants of web adoption used here including Roger's theory of innovation adoption and the Resource-based View of the firm to another service other than the tourism service to be able to generalize it. Also researchers can do a cross cultural analysis by applying this framework to the tourism industry in another country to compare the results of this research in terms of whether the same factors turn out as significant and to be able to generalize the framework in different cultures.

Additionally, having found that different factors affect the different levels of adoption and to overcome the limitation of this research discussed above, future studies could attempt to develop better ways of measuring adoption by identifying the factors affecting the different levels of adoption and developing hypotheses to reflect these differences in determinants of adoption thus resulting in a set of hypotheses for each of the different levels under study. Additionally, future studies should focus more on studying web adoption from a stage perspective rather than as a mere dichotomy of adoption versus non-adoption.

Another direction for research would be to make a modification to the research model studied here by including both firm and consumer sides in the same model. In the qualitative work in this study some interviewees mentioned that the nature of their target customers has affected their decision to adopt or not adopt the web. This might indicate that firms are more likely to adopt the web if they perceive a high level of adoption among consumers indicating a link between the firm and consumer adoption. The researcher thinks that this link is mutual between both sides, i.e. consumers are also more

likely to adopt the web if they perceive a high level of adoption among firms. Studying both forms of adoption for a particular innovation and context will provide an improved understanding of whether there is a link between both and whether they are affected by each other.

Finally, future studies on organizational adoption of the web could incorporate both adopter-side variables and supply-side variables when considering the adoption of innovations. The results of this research indicated that the governing tourism bodies in Egypt have a role to play in increasing the level of awareness and encouraging travel companies to adopt the web. Thus since we are dealing with a business to business context here whereby a company is adopting technology from another company, factors like the marketing strategy of the supplier company aimed at positioning the innovation by communicating its distinctive properties or focused at reducing the risk of early adoption by offering the innovation at a low introduction price and so on may have an important effect on the adoption decision and are thus worth studying.

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# **Appendices**

## **Appendix A: Questionnaire**

## Initial Version of Questionnaire

### The adoption of the Internet by Egyptian Tourism Companies

Please answer all of the following questions. These questions deal with the adoption of the Internet by your company. This questionnaire is part of a Ph.D. research aimed at understanding the factors that affect Internet adoption by Egyptian travel agents in an attempt to identify facilitators and barriers to Internet adoption by these companies.

#### Part One: Internet adoption by your company

Q1. Does your company have a web site? Yes/No

Q2. Does your company engage in e-commerce? Yes/No

Q3. Please indicate to what extent do you agree or disagree with the following statement:

There is an increasing number of customers who visit the web to search for travel packages

Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

#### Part Two: Internet Characteristics

Please indicate to what extent you agree or disagree with each of the following statements. Please circle the appropriate answer that ranges from 1 (strongly disagree) to 7 (strongly agree).

Q4. Owning a website:

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. Will allow us to better communicate with our international customers	1	2	3	4	5	6	7
2. Will provide us with increased access to global consumer markets	1	2	3	4	5	6	7
3. Will allow us to cut costs of traditional marketing methods	1	2	3	4	5	6	7
4. Will increase the profitability of our travel business	1	2	3	4	5	6	7
5. The initial cost of developing a web site is high for our company	1	2	3	4	5	6	7
6. The costs of maintaining a web site and updating	1	2	3	4	5	6	7

information on it are high for our company							
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Q.5 Concerning using a website to market for travel service, please indicate to what extent you agree or disagree with the following:

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. Using a web site to market for travel services is not matching with our values and beliefs	1	2	3	4	5	6	7
2. Using a web site to market for travel services fits well with the way we like to work	1	2	3	4	5	6	7
3. Using a web site to market for travel services is compatible with all aspects of our work	1	2	3	4	5	6	7

Q.6 Concerning the level of complexity of using a web site to market for travel services, please indicate to what extent you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. The skills required to market for travel services via a website are too difficult for our employees	1	2	3	4	5	6	7
2. Integrating the website into our current work will be very difficult	1	2	3	4	5	6	7
3. Using a web site to market for travel services is clear and understandable	1	2	3	4	5	6	7

Q.7 Regarding the possibility of trying to use a website to market for travel services on a limited basis before deciding whether to fully adopt the internet or not, please indicate your opinion on the following:

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. It would be easy to try using a web site to market for travel services before committing oneself	1	2	3	4	5	6	7
2. Before deciding to use a web site to market for travel services, we were able to properly try it out	1	2	3	4	5	6	7
3. We used a web site on a trial basis long enough to see what we could do in terms of marketing travel services on it	1	2	3	4	5	6	7

Q.8 Do you think the Internet is widely used by travel agents to market for their travel services? Please indicate to what extent you agree or disagree with the following:

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. Marketing for travel services via a website is widely communicated in Egypt	1	2	3	4	5	6	7
2. We have seen what other travel companies are doing with their website initiatives	1	2	3	4	5	6	7
3. It is easy for us to observe other companies using websites to market for their travel services	1	2	3	4	5	6	7

Q.9 Please indicate your opinion on the risks associated with using the Internet in the travel business. These are divided into financial risk of online payment and relationship risk with tour operators.

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. We have security concerns regarding online payment for travel services	1	2	3	4	5	6	7
2. We feel confident about online payment for travel services	1	2	3	4	5	6	7
3. We get afraid of hackers when it comes to online payment	1	2	3	4	5	6	7
4. The tour operator provides the bulk of tourists who come to Egypt	1	2	3	4	5	6	7
5. We are afraid to lose business with our tour operators if we directly reach customers via the web	1	2	3	4	5	6	7
6. By marketing travel services on the web we would be directly competing with our tour operators	1	2	3	4	5	6	7
7. Marketing travel services over the web is one way to get out of the control of the tour operator	1	2	3	4	5	6	7

### Part Three: Firm Characteristics

Q.10 How many full-time employees are working in your company?

- Less than 20
- 20-50
- More than 50

Q.11 Please provide your opinion regarding the level of computer and Internet knowledge within your company

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. Our company employees are all computer literate	1	2	3	4	5	6	7
2. Our company employees have adequate in-house knowledge of information technology	1	2	3	4	5	6	7
3. Our company employees are experienced with information technology	1	2	3	4	5	6	7
4. Our company has capable technical support staff	1	2	3	4	5	6	7

Q.12 Please provide your opinion regarding the level of Internet marketing know-how within your company

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. We do a good job of developing new travel services over the Internet	1	2	3	4	5	6	7
2. Our promotional activities (e.g. advertising) over the Internet are effective in gaining market share	1	2	3	4	5	6	7
3. We are able to distribute our travel services online as well as offline	1	2	3	4	5	6	7
4. Our market research skills help us develop effective marketing programs on the Internet	1	2	3	4	5	6	7

Q.13 Please provide your opinion regarding the level of learning within your company

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. Managers basically agree that our organization's ability to learn is the key to our competitive advantage	1	2	3	4	5	6	7
2. The basic values of this organization include learning as key to improvement	1	2	3	4	5	6	7
3. The sense around here is that employee learning is an investment, not an expense	1	2	3	4	5	6	7

4. Learning in my organization is seen as a key commodity necessary to guarantee organizational survival	1	2	3	4	5	6	7
--	---	---	---	---	---	---	---

Q.14 Please indicate your opinion regarding your company's focus on obtaining information about customers and competitors in your target market

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. We pay close attention to understanding customers' needs	1	2	3	4	5	6	7
2. In our organization, achieving customer satisfaction is a main focus	1	2	3	4	5	6	7
3. In our organization, we share information about competitors	1	2	3	4	5	6	7
4. We respond rapidly to competitors' actions	1	2	3	4	5	6	7

#### Part Four: Individual Characteristics

Q.15 Do you think that your company's management supports the idea of using the Internet to market for travel services? Please indicate the extent to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. The owner or manager enthusiastically supports the use of a web site to market for travel services	1	2	3	4	5	6	7
2. The owner or manager has allocated adequate resources to development of a web site	1	2	3	4	5	6	7
3. Top management is aware of the benefits of website use in marketing for travel services	1	2	3	4	5	6	7

Q.16 How do you perceive the changes caused by the Internet to the usual ways of doing business? Please indicate the extent to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. I am interested to hear about new internet developments	1	2	3	4	5	6	7
2. Internet development has enhanced our lives	1	2	3	4	5	6	7

3. We in Egypt have a cultural resistance toward new ideas such as the Internet	1	2	3	4	5	6	7
---	---	---	---	---	---	---	---

Q.17 How do you perceive the risks associated with using the Internet in the travel business? Please indicate the extent to which you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. I generally see myself as a risk taker rather than being conservative on decisions I make	1	2	3	4	5	6	7
2. I perceive changes caused by the internet to the current ways of doing travel work as a challenge	1	2	3	4	5	6	7
3. I am comfortable with the changes caused by the internet to the current ways of doing travel work	1	2	3	4	5	6	7

### Part Five: General Company Information

Please answer the following. Please tick one answer only.

- e- In which year was your company established? -----
- f- When did you develop your website? -----
- g- How was the website developed
  - o In-house
  - o External consultant
  - o Both
- d- Who is your target customer?
  - o Foreign tourists
  - o Egyptian tourists
  - o Both
- e- What is your position in the company?
  - o Owner
  - o Manager
  - o Other (please specify)-----

Thank you very much for your cooperation.

## Final Version of Questionnaire

### The adoption of the Internet by Egyptian Tourism Companies

Please answer all of the following questions. These questions deal with the adoption of the Internet by your company. This questionnaire is part of a Ph.D. research aimed at understanding the factors that affect Internet adoption by Egyptian travel agents in an attempt to identify facilitators and barriers to Internet adoption by these companies.

#### Part One: Internet adoption by your company

Q1. Does your company have a web site? Yes ( ) No ( )

Q2. Does your company sell its travel services over the Internet? Yes ( ) No ( )

Q3. If “Yes” approximately what percentage of your travel business is done via the web?

-----

Q4. Please indicate to what extent you agree or disagree with the following statement:

There is an increasing number of customers who visit the web to search for travel packages

Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

#### Part Two: Internet Characteristics

Please indicate to what extent you agree or disagree with each of the following statements. Please circle the appropriate answer that ranges from 1 (strongly disagree) to 7 (strongly agree).

Q5. Owning a website:

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. Will allow us to better communicate with our international customers	1	2	3	4	5	6	7
2. Will provide us with increased access to global consumer markets	1	2	3	4	5	6	7
3. Will allow us to reduce costs of traditional marketing methods	1	2	3	4	5	6	7
4. Will increase the profitability of our travel business	1	2	3	4	5	6	7
5. The initial cost of developing a web site is high for our company	1	2	3	4	5	6	7
6. The costs of maintaining a web site and updating information on it are high for our company	1	2	3	4	5	6	7

Q.6

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. Using a web site to market our travel services fits well with the way we like to work	1	2	3	4	5	6	7
2. Using a web site to market our travel services is compatible with all aspects of our work	1	2	3	4	5	6	7

Q.7 Please indicate to what extent you agree or disagree with the following statement:  
Our employees find it difficult to use the web to market travel services

Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

Q.8 Did you try to market your travel services through popular travel sites before developing your own website? Yes ( ) No ( )

Q.9 Did you start your web site with a few pages and then added more to it afterwards? Yes ( ) No ( )

Q.10 Please indicate to what extent you agree or disagree with the following statement:  
Other Egyptian travel companies are getting more travel business because of having a web site

Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

Q.11 Please indicate your opinion on the risks associated with using the Internet in the travel business.

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. We have security concerns regarding online payment for travel services	1	2	3	4	5	6	7
2. We are afraid to lose business with our tour operators if we directly reach customers via the web	1	2	3	4	5	6	7
3. Marketing travel services over the web is one way to get out of the control of the tour operator	1	2	3	4	5	6	7

### Part Three: Firm Characteristics

Q.12 How many full-time employees are working in your company?

- Less than 20
- 20-50
- More than 50

Q.13 Please provide your opinion regarding the level of computer and Internet knowledge within your company

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. Our company employees are all computer literate	1	2	3	4	5	6	7
2. Our company employees are experienced with information technology	1	2	3	4	5	6	7
3. Our company has capable technical support staff	1	2	3	4	5	6	7

Q.14 Please provide your opinion regarding the level of Internet marketing know-how within your company

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. We do a good job of developing new travel services over the Internet	1	2	3	4	5	6	7
2. Our promotional activities (e.g. advertising) over the Internet are effective in gaining market share	1	2	3	4	5	6	7
3. We are able to distribute our travel services online as well as offline	1	2	3	4	5	6	7

Q.15 Please provide your opinion regarding the level of learning within your company

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. Managers basically agree that our organization's ability to learn is the key to our competitive advantage	1	2	3	4	5	6	7
2. The sense around here is that employee learning is an investment, not an expense	1	2	3	4	5	6	7
3. The basic values of this organization include learning as key to improvement	1	2	3	4	5	6	7

Q.16 Please indicate your opinion regarding your company's focus on obtaining information about customers and competitors in your target market

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. We pay close attention to understanding customers' needs	1	2	3	4	5	6	7
2. In our organization, achieving customer satisfaction is a main focus	1	2	3	4	5	6	7
3. In our organization, we internally share information about competitors	1	2	3	4	5	6	7

**Part Four: Individual Characteristics**

Please indicate the extent to which you agree or disagree with the following statements:

Q.17

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. The owner or manager enthusiastically supports the use of a web site to market for travel services	1	2	3	4	5	6	7
2. The owner or manager has allocated adequate resources to development of a web site	1	2	3	4	5	6	7
3. Top management is aware of the benefits of website use in marketing for travel services	1	2	3	4	5	6	7

Q.18

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. I am interested to hear about new internet developments	1	2	3	4	5	6	7
2. Internet development has enhanced our lives	1	2	3	4	5	6	7
3. We in Egypt have a cultural resistance toward new ideas such as the Internet	1	2	3	4	5	6	7

Q.19

	Strongly Disagree	Disagree	Fairly Disagree	Neutral	Fairly Agree	Agree	Strongly Agree
1. I generally see myself as a risk taker rather than being conservative on decisions I make	1	2	3	4	5	6	7
2. I perceive changes caused by the internet to the current ways of doing travel work as a challenge in the positive sense	1	2	3	4	5	6	7
3. I am comfortable with the changes caused by the internet to the current ways of doing travel work	1	2	3	4	5	6	7

**Part Five: General Company Information**

Please answer the following. Please tick one answer only.

- h- In which year was your company established? -----
- i- When did you develop your website? -----
- j- Approximately what proportion of your sales are to:
  - o Individual consumers-----
  - o Through foreign tour operators-----

- Through hotels-----
- Through a partner company abroad-----
- Through other channels-----
- k- How was the website developed
  - In-house
  - External consultant
  - Both
- e- Who is your target customer?
  - Foreign tourists
  - Egyptian tourists
  - Both
- f- What is your position in the company?
  - Owner
  - Manager
  - Other (please specify)-----

Thank you very much for your cooperation.

## **Appendix B: Interview Schedule**

## Interview Schedule

### Questions:

1-What are your views on the Internet as an aid to tourism activities carried out by your company?

Purpose: an opening question aimed to trigger discussion on the Internet generally and to provide insights on how the Internet is perceived by the company (i.e. usefulness/significance).

2-Why did/didn't you adopt the Internet? (If yes, when)

Purpose: discover the reasons/ factors that affect internet adoption/ non-adoption by travel agents.

3-In your own point of view, what are the facilitators/ inhibitors (or advantages/disadvantages) to Internet adoption by travel agents in Egypt generally and your company specifically?

Purpose: further probe on the factors that affect internet adoption/non-adoption but by focusing on the perceived problems/ benefits related to internet adoption.

4-Do you think that internet adoption has paid off or will pay off financially/strategically? i.e. were you able to expand your market, increase sales, locate new customers, enhance customer services, etc? What evaluation criteria do you use to evaluate whether the internet has achieved its goals?

Purpose: understand the actual reasons behind internet adoption by travel agents, i.e. has the adoption decision been a result of competitive pressure, customer demand or only to develop an online presence, or has it been a result of an actual plan to enhance provision of tourism services and capture expected benefits.

5-What are your future adoption intentions, if any?

Purpose: discover whether non-adopters are considering future adoption and reasons for that and also whether basic adopters are considering more sophisticated forms of adoption and why.

## **Prompts:**

1-Is your adoption/non-adoption decision affected by your target customers adoption/non-adoption? i.e. characteristics of target customers such as internet access and computer literacy?

Purpose: discover whether there is a relationship between firms' adoption of the internet and customers' adoption to determine whether there is a link between both.

2-Was your adoption decision affected by other travel agents adoption decisions, i.e. competition? Do you think that the Egyptian government has played a role in facilitating internet adoption in the tourism sector?

Purpose: discover the importance of supply-side factors in the adoption decision by travel agents to determine whether internet adoption/non-adoption decisions by travel agents are based on both adopter-side and supply-side factors or only adopter side variables.

3-What method did you use to adopt the internet, i.e. outsource or in-house? What was the investment made in time, people or money?

Purpose: trigger discussion on adoption factors such as cost, compatibility, trialability, top management support, employees' IT knowledge and any other factors that may emerge from the discussion.

## **Appendix C: Classification of Web Sites' Services**

## **Classification of Travel Agents Sites' Services**

### **Core/basic Services:**

- 1-Tour packages
- 2-Nile cruise programs
- 3-Diving programs
- 4-Excursions
- 5-Safari
- 6-Hotels (information)

### **Expected services:**

- 1-Travel tips
- 2-Online reservations
- 3-Prices
- 4-Hotel booking
- 5-Hints on Egypt
- 6-Map
- 7- Restaurants

### **Augmented services**

- 1-Tailor made packages
- 2- Hot deals/special offers
- 3-Extra tour options
- 4-Weather forecast
- 5-Honeymoon packages
- 6-Currency converter
- 7-Guest book
- 8-Transfer and car rentals
- 9-Train reservation
- 10-Flight booking
- 11- Coptic tours
- 12-Hujj and Omra

### **Potential Services**

- 1-Marketplace
- 2-Chat room
- 3-Egypt directory
- 4-New events
- 5-Newsletter
- 6-send an e-card
- 7-virtual tours