Drivers of E-commerce Adoption in Egyptian Travel Agents

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Abstract

Benefits gained from e-commerce adoption, drivers pushing agents to adopt it, and inhibitors hindering the adoption are examples of factors positively or negatively affecting e-commerce adoption. Drivers of adoption could be internal or external pressures on travel agents to adopt technology in order to support their future survival in the travel and tourism global market. Mixed method approach is used in this study to investigate the drivers of e-commerce adoption in the Egyptian travel agents. Findings revealed that adapting to technology changes is the strongest driver of to adopt e-commerce by travel agents.

Keywords: e-commerce; drivers; travel agencies; Egypt; developing countries

1 Introduction

Environmental factors as cited in literature (Kuan & Chau, 2001; Premkumar & Roberts, 1999; Thong, 1999; Wiertz, 2001) are among those factors significantly affecting the adoption of technologies in small and medium-sized enterprises (SMEs). Environmental factors refer to the pressures that come from the environment surrounding the business (Kuan & Chau, 2001).

Additionally, environmental factors have been included among other factors in literature based models which investigate the factors affecting the adoption of information and communication technologies (ICTs) in SMEs. After reviewing literature models and articles relating to the factors affecting ICTs adoption in SMEs, it is found that environmental factors have been cited among the significant factors affecting the adoption decision.

According literature, environmental factors could be external pressures (Premkumar & Roberts, 1999; Voges & Pulakanam, 2011), industry pressures (Andreu, Aldas, Bigne, & Mattila, 2010; Grandon & Pearson, 2004), pressures of trading partners (Lacovou, Benbasat, & Dexter, 1995), employees' pressures (Mehrtens, Cragg, & Mills, 2001), and customers' pressures (Andreu, et al., 2010; Wiertz, 2001). It is worth to mention that travel agents are typically classified as SMEs (Gammack, Molinar, Chu, & Chanpayom, 2004; Karanasios, 2008; Liu & Arnett, 2000; Standing, Borbely, & Vasudavan, 1999). Furthermore, the word 'drivers' is used in this study to refer to the the forces which push travel agents to adopt e-commerce in order to enhance their competitive and survival positions in the global travel and tourism market.

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The study contributes to the existing body of knowledge by investigating drivers of adoption in Egypt as a developing country, where only few studies have examined these factors in developing countries (Thomas, Shaw, & Page, 2011). It also supports the viewpoint that generalizing the findings of studies conducted in developed countries to developing countries lacks rigor without empirical evidence (MacGregor & Kartiwi, 2010). Additionally, the study investigates these drivers of adoption in the travel sector, and particularly for travel agents, which have not been investigated and documented thoroughly up until now (Hung, Yang, Yang, & Chuang, 2011).

2 Literature Review

Most of literature models and articles have cited drivers of adoption as a broad concept, such as environmental factors or environmental characteristics. Therefore, the literature review of this study lists theses drivers of adoption cited in literature studies. As a result, little information can be found in the academic literature on drivers to adopt e-commerce in SMEs, while more information can be found on broader aspects, like Internet and ICTs, and Internet and e-commerce which are complex and interrelated disciplines (Simpson & Docherty, 2004). Additionally, the drivers relating to ICTs, Internet and information systems are also applicable to e-commerce adoption.

Furthermore, there is a wide agreement among researchers that drivers of ICTs adoption among SMEs are seen as external pressures (Voges & Pulakanam, 2011) derived from customers, suppliers, competitors and business partners (Beekhuyzen, Hellens, & Siedle, 2005; Poon & Joseph, 2001; Simpson & Docherty, 2004). Drivers of adoption have been summarized in table 1.

Table 1. Review of drivers of technology adoption in SMEs

Drivers	**Researchers**
Continuous demand for improved product/service quality	(Poon & Joseph, 2001)
Existing customers and their pressures power to adopt new technologies	(Andreu, et al., 2010; Beckinsale & Levy, 2004; Bigne, Aldas, & Anderu, 2008; Daniel, Wilson, & Myers, 2002; Dyerson & Harindranath, 2007)
External pressures from new customers	(Simpson & Docherty, 2004)
Social pressure of customers	(Vrana & Zafiropoulos, 2006)
Market demand	(Buhalis & Deimezi, 2004; Hung, et al., 2011)
Competitive pressures	(Beekhuyzen, et al., 2005; Hung, et al., 2011; Poon & Joseph, 2001)
The fear of being behind and level of competition among the industry firms	(Bigne, et al., 2008; Patricia, 2008; Teo, Lin, & Lai, 2009; Wesrthner & Klein, 1999)
Responding to competitors	(Simpson & Docherty, 2004)
Threats of competitive forces	(Jin, 2007)
Emergence of new virtual intermediaries	(Barnett & Standing, 2001)

Cont. Table 1

Fear of innovative competitors	(Buhalis & Deimezi, 2004)
pressures of business partners	(Nour, 2002; Raymond, 2001; Simpson & Docherty, 2004; Teo, et al., 2009)
Suppliers' development programmes	(Quayle, 2002)
Suppliers upgrading to newer technologies	(Vrana & Zafiropoulos, 2006)
Demands from business partners	(Rao, Metts, & Monge, 2003)
Rapidly changing business environment	(Grandon & Pearson, 2004; Kuan & Chau, 2001; Saffu & walker, 2008; Simpson & Docherty, 2004)
Environmental uncertainty	(Raymond, 2001)
Adapting to changes in technology	(Karagozoglu & Lindell, 2004; Law, leung, & Wong, 2004)
Globalization consequences	(Nour, 2002; Poon & Joseph, 2001)
Modernisation	(Buhalis & Deimezi, 2004)
Governmental rules	(Grandon & Pearson, 2004; Kuan & Chau, 2001; Saffu & walker, 2008; Teo, et al., 2009)
Business strategy	(Quayle, 2002)
Employees' pressure	(Beckinsale & Levy, 2004)
Owner/manager push	(Beckinsale & Levy, 2004)
Re-intermediation and future survival of travel agents	(Bennett & Lai, 2005; Heung, 2003; Stansfield & Grant, 2003; Warden & Tunzelana, 2004)

3 Research Gap and Objectives

Travel and tourism industry is increasingly moving online, therefore, travel and tourism businesses need to react accordingly, especially in developing countries (Migiro & Ocholla, 2005). Travel agents are one category of tourism businesses facing the threat of disintermediation in the global travel market. To survive in an increasingly competitive global environment, small businesses need to advent the Internet and achieve economies of scale (Kim, 2005). E-commerce creates opportunities for travel agents' re-intermediation in the market and supports their survival in the new competitive environment (Bennett & Lai, 2005; Hamed, 2003; Patricia, 2008). Drivers of e-commerce emerge not only because of supporting future survival, but as a result of external pressures from customers, suppliers, competitors, and even government regulations as well. This research aims to determine the significant drivers pushing travel agents to adopt e-commerce to support their future existence in Egypt as a developing country.

4 Research Methodology

Mixed method approach is used in this study to identify the drivers of e-commerce adoption by travel agents. The sequential explanatory design strategy grounded on the pragmatism paradigm is employed, starting with the quantitative stage and then moving to the qualitative stage that helps in interpreting the quantitative findings (Creswell, 2009). A questionnaire form was designed for quantitative data collection purposes. Eighteen drivers have been included in the initial form; each driver takes

the value of (5) if strongly agreed, ranging to the value of (1) if strongly disagreed by managers of travel agents. The form has been piloted by 50 managers of travel agents in order to determine the significant drivers of adoption by travel agents. Corrected item-total correlation statistics were used to retain factors with loadings among 0.35 and 0.80 in the final form according to Netemeyer, Bearden, and Sharma (2003). In doing so, a number of 6 out of 18 drivers have been considered in the final questionnaire (table 2). Mean statistics were used to count the agreed drivers. Subsequently, reliability statistics were calculated.

Table 2. Measurement scale

Items (*=Retained Items)	**Corrected Item-Total Correlation**
Consumer demand for enhanced service quality	.271
Increased pressures from new and/or existing customers	.308
Higher level of buyer-seller interaction	.313
Responding to competitor pressures*	.530
Fear of being left behind	.076
Emergence of new virtual intermediaries	.242
Supplier's development programmes*	.506
Business partner influence*	.410
Growing markets changes and demands	.188
Business environmental uncertainty	.227
Adapting to technology changes*	.577
Rapidly industry changes	.285
Globalization consequences*	.497
Governmental rules and regulations	.252
Business strategy (planning to expand and development)	.324
Pressure from employees	.336
Owner/manager and/or IT manager push	.155
Future survival of travel agency*	.590

Logistic regression is used in this study to identify the significant drivers where the outcome (i.e. dependent) variable is binary: adopter travel agents of e-commerce (coded as 1) versus non-adopters (0). The five-point Likert scale of drivers has been recoded to include three categories instead of five. Scales of 'Strongly Agree' and 'Agree' have been recoded to take the value of 1 instead of 5 and 4 respectively. 'Neither Agree nor Disagree' is recoded to 2 instead of 3. Finally, 'Strongly Disagree and Disagree' scales have been recoded to 3 instead of 1 and 2 respectively. The latter category has been used as the baseline in the logistic regression model in this study.

Where the qualitative stage is used to assist in interpreting the results revealed from the quantitative stage, NVivio (ver. 9) was used ot code qualitative data developed

based on quantitative findings. Face to face semi-structured interviews were used to collect qualitative data. In 22 interviews with general managers of travel agents in Egypt, interviewees were provided with a copy of the interview schedule before the event, and clear open questions to reduce bias and to promote validity and reliability issues (Saunders, Thornhill, & Lewis, 2007)

5 Sample of the Study

Among the three categories of travel agents in Egypt, category (A) travel agents is selected as the sample frame in this study. Category (A) includes agencies organising inclusive packages and all other related tourism services for groups or/and individuals, inside and/or outside Egypt, and finally executing the planned packages of other tour operators (Ministry of Tourism, 2008).

There are a total of 1,023 agents in category (A) (Egyptian Travel Agents Association, 2008). With the high percentage of agents based in Greater Cairo (826 agents), it is selected to be the geographic sample frame in this study. Where the study questions have been addressed to adopters and non-adopters of travel agents category (A), therefore, the questionnaire was delivered and collected from two groups of agents' managers. Using the sample frame, it is found that 387 agents are adopters of e-commerce and 439 agents are non-adopters. Adopters are agents who have a static website (initial level of e-commerce) and/or an interactive website that supports an online booking system (mature level of e-commerce adoption). By contrast, non-adopters are agents who do not have websites.

As a result of non-equal representation of the two groups in the sample frame, a stratified sample is used to reduce heterogeneity of the population and to increase the estimates' efficiency. To calculate strata sample size, the following formula was used: stratum size = (n_i/N)*total sample size, where n_i is the stratum size and N is the total number of sample frame. For adopters = (387/826)*278=135 subjects. For non-adopters = (439/826)*287=152 subjects. Technique of simple random sampling with replacement was used within each of these strata to select sample subjects. Finally, 208 and 210 valid forms were collected from adopters and non-adopters, respectively.

6 Validity and Reliability

To ensure validity procedures, the questionnaire was designed and piloted to be ready for data collection purposes. The primary questionnaire form was designed in English language, then validated by an expert panel and 15 PhD students to check its face-validity. Where the respondents' mother language is Arabic and using the mixed techniques in translation, for validity (Saunders, Thornhill, & Lewis, 2009), the questionnaire form was translated into Arabic to check questions' comprehensiveness. Subsequently, it was translated back into English to compare the two English forms and to avoid misleading translation issues. The advantage of mixed techniques in translation is getting the best match between source and target questionnaires to create the final questionnaire form.

More precisely, to achieve the mixed techniques of translation, firstly the source questionnaire was translated from English into Arabic language by a certified

translation centre in Egypt. Sequentially, the Arabic version was translated back from Arabic into English by another independent translator working for a certified translation centre in the UK. The next step was comparing the two English questionnaires by a British lecturer specialized in linguistics. The final questionnaire shows 6 drivers with a Cronbach's alpha value of 0.79 for the 6 items included in the final form for travel agents which reflects its reliability.

7 Research Results

7.1 Drivers of E-Commerce Adoption in Travel Agents

From descriptive analyses and using mean scores of managers' opinions in travel agents (table 3) it becomes clear that agents' responses ranged between 3 and 4 except for the driver of 'adapting to technology changes'. Generally, responses lie between neutral and managers' agreement.

Table 3. Statistics of drivers of e-commerce adoption in travel agents

Drivers	Mean	Std Deviation.
Responding to competitors pressures	3.26	1.19
Supplier's development programmes	3.29	1.22
Business partner influence	3.09	1.20
Adapting to technology changes	2.79	1.16
Globalization consequences	3.15	1.26
Future survival of travel agency	3.04	1.22

7.2 Significant Drivers of Adoption According to Logistic Regression Model

A number of 418 cases were included in the analysis. Logistic regression and a -2 Log likelihood and Chi-square test model revealed the following results for overall goodness of fit: it is found that including predictors in the model reduced the -2likelihood by 340.606. Rsquare value for Nagelkerke is 58% and the value for Cox & Snell is 43.5%, suggesting the model offers a reasonable explanation of variance. Furthermore, Chi-square (χ^2) value for Hosmer and Lemeshow test is 14.051 (df.=7) and $p>0.05$. Therefore, the null hypothesis of no difference between observed and predicted values of dependent variable is accepted and the model appears to be a good fit to the data. To test the null hypothesis that all coefficients=0, it is revealed that χ^2 value of Omnibus tests of model coefficients is 238.855 (df.=10) and $p<0.01$, therefore the null hypothesis is rejected and the independent variables as a whole are significantly affecting the dependent variable.

Additionally to assess the effects of how many explanatory variables (the independent variables) have in the model over the constant only, it is useful to compare the classification table in step 1 (i.e. independent variables included in the model) with the classification table in step 0 (i.e. no independent variables included in the model). In step 0, the % value was 50.2% and in step 1, it is 81.8%. This means that the

inclusion of independent variables significantly improves the explanation of the model regarding the drivers pushing the adoption of e-commerce by travel agents.

Table 4 indicates the significance of coefficients. Using the values of Wald statistics for drivers with p values less than 0.05, the null hypothesis can be rejected that B=0 and, thus, those drivers appeare as significant variables affecting the adoption of e-commerce in travel agents. Generally, the significant influences of the six drivers on the adoption of e-commerce according to managers who agree to these drivers in comparison to others, who have neutral opinions, are shown in table 4.

Table 4. Logistic regression output (variables in the equation)

	B	S.E.	Wald	df	Sig.	Exp(B)
Competitor_pressure(1)	.729	.275	7.041	1	.008	2.073
Suppliers_programs(1)	1.065	.275	15.006	1	.000	2.901
Suppliers_programs(2)	-21.215	40192.970	.000	1	1.000	.000
Business_partner(1)	.596	.281	4.507	1	.034	1.814
Business_partner(2)	.971	1.140	.725	1	.394	2.641
Technology_changes(1)	1.932	.355	29.542	1	.000	6.901
Technology_changes(2)	-20.508	40192.970	.000	1	1.000	.000
Globalisation_consequences(1)	1.395	.299	21.814	1	.000	4.035
Future_survival(1)	.766	.305	6.325	1	.012	2.151
Future_survival(2)	-.870	2.341	.138	1	.710	.419
Constant	-2.686	.296	82.290	1	.000	.068

To describe the variables in the model using the Logit of e-commerce adoption form:

$Logit_{ecomadoption}$= -2.686+ 0.729 * managers agree to competitors' pressures + 1.065 * managers agree to suppliers' development programs + 0.596 * managers agree to business partner's pressures + 1.932 * managers agree to adapting to technology changes + 1.395 * managers agree to globalisation consequences + 0.766 * managers agree to future survival of travel agents.

To express the same model in odds ratios (Exp (B) instead of B values):

$Odds_{ecomadoption}$= 0.068 x 2.073* managers agree to competitors' pressures x 2.901* managers agree to suppliers' development programs x 1.814* managers agree to business partner's pressures x 6.901* managers agree to adapting to technology changes x 4.035* managers agree to globalisation consequences x 2.151* managers agree to future survival of travel agents.

To interpret the odds ratios, it can be as follows:

- Agents' managers who agree on competitors' pressure are 2.073 times more likely to adopt e-commerce than others who disagree on these pressures;
- Agents' managers who agree on suppliers' development programs are 2.901 times more likely to adopt e-commerce than others who disagree on these pressures;

- Agents' managers who agree on business partner's pressures are 1.814 times more likely to adopt e-commerce than others who disagree on these pressures;
- Agents' managers who agree on adapt to technology changes are 6.901 times more likely to adopt e-commerce than others who disagree;
- Agents' managers who agree on globalisation consequences are 4.035 times more likely to adopt e-commerce than others who disagree on these pressures; and
- Agents' managers who agree on future survival of travel agents are 2.151 times more likely to adopt e-commerce than others who disagree on these pressures.

To sum up, for managers who agree on those drivers of e-commerce adoption in travel agents, it clearly emerged that adapting to technology changes is the strongest driver affecting their decision to adopt e-commerce, followed by globalisation consequences, the supplier's development programs, then the future survival of travel agents in the global tourism market, the competitors' pressures, and finally, the business partners' pressures.

7.3 Drivers of Adoption: Qualitative Analysis

Figure 1 illustrates the responses of interviews with general managers in travel agents. Analysis is described according to the number of times items were referred to in the 22 interviews. Responding to competitors was the most commonly driver of technology adoption by the managers. 'Competition', 'continue competing', 'competitors' pressure', and 'international competition' were the words used by the managers to define the strongest driver behind adopting e-commerce. Comparison with competitors, competitive position, and not wishing to be left behind competitors are some of the explanations managers used to justify their adoption of e-commerce. Future survival was also identified. Managers perceive that the future survival of their agencies is empowered by e-commerce and internet technology adoption. Additionally, 'continue', 'staying', 'survive' and 'exist' [in the travel market] are some of the phrases used in defining the drivers that push these agents to adopt e-commerce.

Adapting to technology changes came next. The interviewed managers used words like 'revolution', 'trend', and 'fashion' to describe the age of internet technologies. 'There is an emergent need to adopt internet technologies' said one manager, describing their need to adopt e-commerce. Some of the managers perceived e-commerce as the fashion saying 'this is the trend in the world now'. Other managers expressed the view that the new generations as well as some current customers are more interested in using technology and the Internet. Customer pressure is, thus, perceived by the managers as one of the drivers of e-commerce adoption. 'Potential' and 'online' customer requirements are behind the emergent need to adopt e-commerce in their activities.

The benefits to be gained from adoption are another driver behind the adoption of e-commerce in the view point of some managers. They claim that increasing the awareness of benefits gained from adoption pushes agents to adopt these technologies. Some managers request the support of government bodies and organisations to raise the awareness of e-commerce and their benefits for SMEs.

Further drivers include governmental regulations imputed by the ministry of tourism and other related bodies, which force companies to use internet technologies for registrations and collecting information when dealing with the ministry. Another key factor is business strategy, which encompasses adopting technology, expanding into global markets, and developing and increasing their business size.

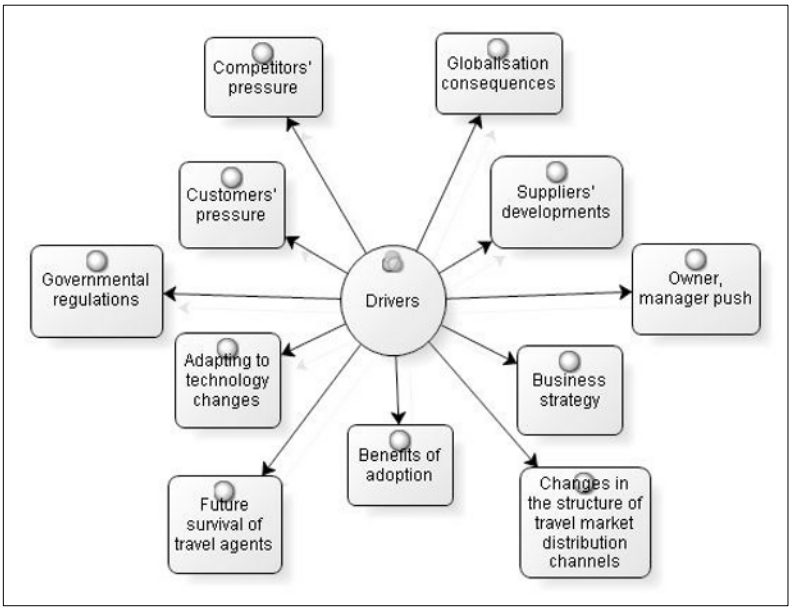

Fig. 1. NVivo output of the drivers of e-commerce adoption

Supplier's development programmes and upgrades to new technologies are another driver of adoption. This form of pressure from suppliers and partners stems from the need to manage problems of compatibility, and enhance business performance. For example, the travel supplier may choose a technology, such as Sabre or Amadeus, and then pushes the travel agent to adopt it as well. Some managers recognize the manager/owner's commitment to adopt technology as another driver of adoption. The consequences of globalisation, such as the possibility of international travel agents to open branches in various destinations, create another form of competition for travel agents, and are, thus, another driver of technology adoption. Finally, the changes in the travel market distribution structure and the appearance of virtual intermediaries are further pressures on travel agents to adopt e-commerce technologies.

8 Conclusion

This paper has highlighted the significant drivers of e-commerce adoption in the Egyptian travel agent branch. A total of 418 surveys were conducted in order to test a logistic regression model identifying the drivers pushing travel agents to adopt e-commerce. In addition, 22 interviews with managers in travel agents were taken. This study has met its aim identifying the significant drivers of e-commerce adoption in travel agents. It is found that agents' adaptation to technology changes is the strongest

driver of e-commerce adoption. The perception of globalisation consequences and its impact on the necessity to adopt technology is ranked as the second important driver in the agents' priorities. The development of suppliers' programs push agents to use the same programs in order to keep their relationships with suppliers. Future survival in the fierce competitive global markets occupies the fourth driver of technology adoption by travel agents. Finally, the competitors' pressure is the last driver of adoption. Qualitative results confirmed quantitative findings, however, adding new drivers, namely benefits of adoption, governmental regulations, and manager/owner's commitment to adopt technology.

These drivers could explain why agents are caring about adaptation to technology changes and developed programs of suppliers as a gateway to enhance their competitive positions and, in turn, supporting their future survival that leads to effectively re-intermediating themselves in the global travel and tourism market. These drivers also claim that agents are in need to adopt technology to fulfil their business defects. However, this leads to a question of why the majority of travel agents in Egypt are still non-adopters (more than 50% of agents do not even have websites) although they believe that adopting technology is enhancing their business operations. This suggests that drivers are not the only factors affecting the decision of technology adoption in travel agents. There might be inhibitors and barriers of adoption represented, for instance, by resource limitation, customers' readiness, suitability of technology to the nature of services or even the belief that technology adoption will not sufficiently enhance their competitive positions as expected.

9 Limitations and Suggestions for Further Research

When reviewing the results of this study, one limitation is the need to include the benefits and inhibitors of adoption to the research model to fully investigating factors affecting the adoption decision. Although managers found these drivers pushing agents to adopt e-commerce technologies, further research should be addressed to interpret why the majority of travel agents do not even have websites. Thus, future studies might focus on what are the barriers to adopt and how they affect travel agents' decisions to adopt e-commerce technologies. This will help both, agents and governments to take coordinated actions to maximize the benefits of adoption and to overcome existing adoption barriers.

References

Andreu, L., Aldas, J., Bigne, J. & Mattila, A. (2010). An analysis of e-business adoption and its impact on relational quality in travel agency–supplier relationships. *Tourism Management* 31: 777-787.

Barnett, M. & Standing, C. (2001). Repositioning travel agencies on the internet. *Journal of Vacation Marketing* 7(2): 143-152.

Beckinsale, M. & Levy, M. (2004). SM*Es and internet adoption strategy: who do SMEs listen to?* Retrieved 14 February, 2009, from http://is2.lse.ac.uk/asp/aspecis/20040016.pdf

Beekhuyzen, J., Hellens, L. & Siedle, M. (2005). *Cultural barriers in the adoption of emerging technologies.* Retrieved 26 February, 2009, from http://www.ucd.smartinternet.com.au/Documents/Cultural_Barriers.pdf

Bennett, M. & Lai, C. (2005). The impact of the internet on travel agencies in Taiwan. *Journal of Tourism and Hospitality Research* 6(1): 1-17.

Bigne, J., Aldas, J. & Anderu, L. (2008). B2B services: IT adoption in travel agency supply chains. *Journal of Services Marketing 22*(6): 454- 464.

Buhalis, D. & Deimezi, O. (2004). E-tourism developments in Greece: information communication technologies adoption for strategic management of the Greek tourism industry. *Tourism and Hospitality Research, 5*(2): 1467-3584.

Creswell, J. (2009). *Research design: qualitative, quantitative, and mixed methods approaches* (3rd ed.). London: SAGE Publication.

Daniel, E., Wilson, H. & Myers, A. (2002). Adoption of e-commerce by SMEs in the UK: towards a stage model. *International Small Business Journal 20*(3): 253-270.

Dyerson, R. & Harindranath, G. (2007, 5-9 August). *ICT adoption and use by SMEs in the UK: a survey of South East.* Paper presented at the Portland International Center for Management of Engineering and Technology (PICMET), Portland, Oregon - USA.

Gammack, J., Molinar, C., Chu, K. & Chanpayom, B. (2004). *Development needs of small to medium size tourism businesses: a report prepared for APEC workshop group*. APEC international Centre for Sustainable Tourism.

Grandon, E. & Pearson, J. (2004). Electronic commerce adoption: an empirical study of small and medium US businesses. *Information & Management 42*: 197-216.

Hamed, H. (2003). *E-commerce in tourism Sector.* Cairo: Faculty of Tourism and Hotels, Helwan University.

Heung, V. C. S. (2003). Barriers to implementing e-commerce in the travel industry: a practical perspective. *International Journal of Hospitality Management 22*(1): 111-118.

Hung, Y., Yang, Y., Yang, H. & Chuang, Y. (2011). Factors affecting the adoption of ecommerce for the tourism industry in Taiwan. *Asia Pacific Journal of Tourism Research 16*(1): 105-119.

Jin, N. (2007). *A study of information technology adoption for small and medium sized enterprises: strategic competitiveness*. Paper presented at the 2007 International Conference on Wireless Communications, Networking and Mobile Computing.

Karagozoglu, N. & Lindell, M. (2004). Electronic commerce strategy, operations, and performance in small and medium sized enterprises. *Journal of Small Business and Enterprise Development 11*(3): 290-301.

Karanasios, S. (2008). *An E-commerce Framework for Small Tourism Enterprises in Developing Countries.* Unpublished Doctorate thesis, School of Information Systems, Faculty of Business and Law, Victoria University.

Kim, C.-W. (2005). Enhancing the role of tourism SMEs in global value chain: a case analysis on travel agencies and tour operators in Korea. In *Global tourism growth: a challenge for SMEs* 6-7 September, Gwangju, KoreaKwangju, Korea. Retrieved July 20, 2008 from http://www.oecd.org/dataoecd/26/48/36886129.pdf

Kuan, K. & Chau, P. (2001). A perception-based model for EDI adoption in small businesses using technology-organization-environment framework. *Information & Management* 38: 507-521.

Lacovou, C., Benbasat, I. & Dexter, A. (1995). Electronic data interchange and small organizations: adoption and impact of technology. *MIS Ouarterly* 19(4): 465-485.

Law, R., leung, K. & Wong, J. (2004). The impact of the internet on travel agencies. *International Journal of Contemporary Hospitality Management* 16(2): 100-107.

Liu, C. & Arnett, K. (2000). Exploring the factors associated with Web site success in the context of electronic commerce *Information & Management* 38: 23-33.

MacGregor, R. & Kartiwi, M. (2010). Perception of barriers to e-commerce adoption in SMEs in a developed and developing Country: a comparison between Australia and Indonesia. *Journal of Electronic Commerce in Organizations* 8(1): 61-82.

Mehrtens, J., Cragg, P. & Mills, A. (2001). A model of internet adoption by SMEs. *Information and Management 39*: 165-176.

Migiro, S. & Ocholla, D. (2005). Information and Communication Technologies in Small and Medium Scale Tourism Enterprises in Durban, South Africa. *Information Development* 21(4): 283-294.

Netemeyer, R., Bearden, W. & Sharma, S. (2003). *Scaling procedures: issues and applications*. London: Sage Publications.

Nour, S. (2002). *ICT opportunities and challenges for development in the Arab World, Discussion paper*. Paper presented at the Paper prepared for the UNU/WIDER Conference on the New Economy in Development 10-11 May 2002.

Patricia, D. (2008). *The Internet, threat or tool for travel agencies?* Retrieved 5 February, 2009, from http://steconomice.uoradea.ro/anale/volume/2008/v2-economy-and-business-administration/017.pdf

Poon, S. & Joseph, M. (2001). A preliminary study of product nature and electronic commerce. *Marketing Intelligence & Planning 19*(7): 493-499.

Premkumar, G. & Roberts, M. (1999). Adoption of new information technologies in rural small businesses. *Omega, International Journal of Management Science 27*: 467-484.

Quayle, M. (2002). E-commerce: The challenge for UK SMEs in the twenty-first century. *International Journal of Operations & Production Management 22*(10): 1148-1161.

Rao, S., Metts, G. & Monge, C. (2003). Electronic commerce development in small and medium sized enterprises: a stage model and its implications. *Business Process management Journal 9*(1): 11-32.

Raymond, L. (2001). Determinants of web site implementation in small business. *Internet Research: Electronic Networking Applications and Policy 11*(5): 411-422.

Saffu, K. & Walker, J. (2008). Strategic value and electronic commerce adoption among small and medium-sized enterprises in a transactional economy. *Journal of Business & Industrial marketing 23*(6): 395-404.

Saunders, M., Thornhill, A. & Lewis, P. (2007). *Research methods for business students* (4th ed.). London: Financial Times Prentice Hall.

Saunders, M., Thornhill, A. & Lewis, P. (2009). *Research methods for business students* (5th ed.). London: Financial Times Prentice Hall.

Simpson, M. & Docherty, A. (2004). E-commerce adoption support and advice for UK SMEs. *Journal of Small Business and Enterprise Development 11*(13): 315-328.

Standing, C., Borbely, S. & Vasudavan, T. (1999). A study of Web diffusion in travel agencies. In *Thirty-second Annual Hawaii International Conference on System Sciences* (Vol. 5, pp. 1-9). Maui, Hawaii: HICSS.

Stansfield, M. & Grant, K. (2003). An investigation into issues influence the use of the internet and electronic commerce among small-medium sized enterprises. *Journal of Electronic Commerce Research 4*(1): 15-33.

Teo, T., Lin, S. & Lai, K. (2009). Adopters and non-adopters of e-procurement in Singapore: An empirical study. *Omega 37*(5): 972-987.

Thomas, R., Shaw, G. & Page, S. (2011). Understanding small firms in tourism: A perspective on research trends and challenges. *Tourism Management 32*: 963-976.

Thong, J. (1999). An integrated model of information systems adoption in small businesses. *Journal of Management Information Systems 15*(4): 187-214.

Voges, K. & Pulakanam, V. (2011). Enabling factors Influencing internet adoption by New Zealand small and medium size retail enterprises. *International Review of Business Research Papers 7*(1): 106-117.

Vrana, V. & Zafiropoulos, C. (2006). Tourism agents' attitudes on internet adoption: an analysis from Greece. *International Journal of Contemporary Hospitality Management 18*(7): 601-608.

Warden, S. & Tunzelana, S. (2004). E-Commerce: a critical review of SMME organisational barriers in tourism. In *Proceedings of 6th WWW Applications Conference 2004*, Rand Afrikaans University, Johannesburg, South Africa.

Wesrthner, H. & Klein, S. (1999). ICT and the changing landscape of global tourism distribution. *Electronic markets 9*(4): 256-262.

Wiertz, C. (2001). *The Internet adoption decision in small and medium enterprises (SMEs)*. Retrieved 12 February, 2009, from http://www.bonissen.de/ib/papers/Small%20Biz.pdf