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Investigating Adoption and Functionalities of Information and Communication Technologies in Tourism, Travel and Hospitality Enterprises in Tanzania

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Abstract

Information and Communication Technologies (ICT) innovations practically transform the ways tourism enterprises conduct their business globally. ICT development and advancement continually have improved innovation, production and marketing strategies of tourism enterprises globally. This paper examines empirically ICT adoptions and functionalities in the tourism industry. It specifically analyzed awareness by tourism enterprises of ICT, adoption rates and functionalities in travel agents, tour operators and accommodation subsectors in the Mbeya, Iringa, Morogoro, Dar es Salaam, Arusha and Zanzibar regions. The study was guided by technological acceptance model (TAM) and diffusion of innovation theory. It was conducted by using telephone aided interviews, online questionnaires and conventional questionnaires. Convenience and expert sampling procedures were adopted to obtain respondents. According to the results, only one third of tourism enterprises in the study areas have adopted ICT innovations. However, of those who adopted it, travel agencies were the highest while tour operators were the lowest ICT adopters. In terms of functionalities, the majority of ICT adopters use ICT innovations for online marketing, advertisement and a few for online transactions. Additionally, studies show that only few ICT adopters have seriously invested in all spheres of ICT hardware, software and network. Moreover, the results maintain that ICTs are highly applied in online marketing, advertisement, communication, monetary transactions, product and process innovations across all tourism subsectors. However, the ICT functionalities depend on many factors including size of tourism enterprises, areas of operations and ICT policies among other things.

Keywords: ICT in Tourism, Travel agents, Tour operators, Tourism in Tanzania

1.0 INTRODUCTION

Information and Communication Technology (ICT) continues to practically transform the ways tour operators, travel agencies and accommodation or hospitality businesses are conducted globally (Mezgar, 2016; Buhalis, 2005). In other words, ICT development and advancements continually have simplified and improved tourism performance and management worldwide (Mihajlovic, 2012; Buhalis, 2005; O'Connor, 2005). However, some enterprises, particularly in developing countries, are still doubtful of actual ICT contributions to tourism performance and development (Teo, 2003). In this period of digitization, ICT could benefit tourism, travel, and hospitality enterprises by slashing off marketing costs, simplifying financial and social transactions, cutting employment costs and increasing self-services, to mention a few (Law and Jogaratnam, 2005). Nevertheless, if imprecisely adopted, controlled, and executed, ICT innovations may inflict social, financial, and economic problems to tourism enterprises and tourists (Gruescu et al., 2009).

ICT innovations have been widely applied in different sectors including commerce, agriculture, natural resources and financial sectors (Scheidegger, 2006; Gyaase et al., 2013). ICT applicability may vary among sectors as each of them serves a different purpose. In the case of tourism, the enterprises could uniquely apply ICT innovations to track tourist movement and tourist expenditure by using computational simulation, deep learning and geographic information systems (Scharl, 2007; Jacob et al., 2003). Additionally, enterprises may adopt e-tourism for e-ticketing, e-hospitality and virtual tours among others (Gruescu et al., 2009; Law and Jogaratnam, 2005). ICT functionalities not only enhance interactive tourism services but they also empower tourists to control many aspects of tourism services and amenities such travel and accommodation bookings online without or with minimal assistances from suppliers (Mihajlovic, 2012). In this regard, tourism enterprises generally decentralize issuance of their services to tourists distantly and efficiently without spatial and temporal restrictions (Ion and Andrea, 2008).

ICT innovations continue to considerably impact all levels of humanity (Scheidegger, 2006). Such impacts are usually discussed at three domains: societal, organizational, and managerial. In this paper, we provide a brief overview of a widely used Technological Acceptance Model (TAM), Diffusion Theory and related social theories. It will describe their

core concepts and how they have been applied to either ICT adoption or rejection by tourism enterprises. Broadly speaking, TAM entails perceived usefulness and perceived ease of use as a main criterium for ICT adoption or rejection. TAM has generally massive empirical support around its concepts though a perceived ease of use. However, it is sometimes criticized. Therefore, there are many factors that lead to adoption or rejection of ICT-based innovation adoption or rejection, apart from those described in TAM.

Rodgers founded innovation theory that conceptualizes perceived characteristics of ICT innovation as an added factor to ICT adoption or rejection (Teo et al., 2003). According to the theory, users' beliefs or perceptions influence adoption or rejection of a particular technology. Moreover, Diffusion Innovation Theory is concerned with the spread rate of a particular ICT within a social system as another factor to consider (Caselli and Coleman, 2001). The theory states that some people adopt innovations faster than others. Also, ICT adoption or rejection rates depend on many factors including comments from current or previous users and the social status of current adopters. The worst comments from previous adopters are likely to influence current adopters from adopting or rejecting a certain ICT innovation. More importantly, if a highly respected person or enterprise adopts an innovation, many more enterprises or persons are likely to also adopt it. In addition, Goodhue and Thompson (1995) stated that enterprises might adopt or reject new innovations in accordance with Task-Fit Theory which states that enterprises are likely to adopt a new innovation if a new ICT innovation fits with enterprises stipulated tasks. According to Goodhue and his colleagues, enterprises always scrutinize ICT dimensions in terms of quality, locateability, authorization, compatibility, ease of use, timeliness, and reliability before adoption or rejection of the technology.

Studies show evidence that tourism enterprises in the developed countries have adopted ICT innovations more than those in developing countries (Caselli and Coleman, 2001; Evans and Peacock, 1999). Moreover, studies disclose the existence of a digital gap between tourist markets and potential destinations occurring among countries, regions, districts, or any geographical area. This creates the so-called Digital Divide (Minghetti and Buhalis, 2010). According to empirical studies, most tourism destinations suffer from Digital Divide due to inadequate ICT infrastructure or national ICT policies that may or may not enhance a timely

provision of required ICT services. The Digital Divide mostly affects small tourism enterprises operating in rural areas. Studies maintain that ICT has finally penetrated almost into all domains of tourism including hospitality and travel (Shanker, 2008; Law and Jogaratnam, 2005). However, there is insufficient published information on the ICT adoption rates and applicability of ICT innovations to tourism enterprises in developing countries. Therefore, a closer investigation of functionalities and adoption rates of ICT in tourism is highly justified.

In this article, we limited our discussion to ICT functionalities and adoption rates without digging deeper into performance and management ICT in tourism industry. The choice is justified because only we aimed at understanding ICT adoption rates and ICT functionalities. In particular, the research focuses on online marketing, service innovations and online transactions by tourism enterprises in Tanzania. Investigation on ICT infrastructural investment is vindicated because such infrastructure facilitates the existence, operations and management of the enterprise's IT environment (Osterwalder, 2013; Alu, 2002). ICT infrastructure contributes to constituting the tourism enterprise's environment. It guarantees its functionalities, associated hardware and software (Montealegre, 1999; Hargittai and Norris, 2002). In this paper, we restrict ICT infrastructure to hardware, networks, software and websites that facilitate the functioning of a tourism enterprise for daily routines (Pease et al., 2007; Slyke, 2008; Scharl, 2007; Sigala, 2004).

2.0 METHODOLOGY OF THE RESEARCH

The study consisted of six independent variables. They were ICT adoption, ICT investment, online transactions, online orders, online marketing, product and process innovations. The data were collected from a field survey conducted in the March, 2020 in the Mbeya, Iringa, Morogoro, Dar as Salaam, Arusha and Zanzibar regions of Tanzania. Techniques involved in this survey included telephone aided interviews, online questionnaires and conventional questionnaires. This research was part of a comprehensive survey conducted to investigate ICT's impact on different sectors including tourism, travel agency, hospitality, conservation, financial and manufacturing industries. Selection of tourism enterprises for this paper was chosen because is in line with themes and policy of this journal. Distribution and collection of conventional questionnaires were carried out at different time

interval depending on the availability and convenience of the respondents. A total of 181 respondents from 97 firms, in five regions of the United Republic of Tanzania representing about 88.12 per cent of the total respondents participated in this study. A stratified sampling technique was adopted where 10 per cent was selected from the available population of tour, travel and hospitality enterprises. They were sampled from each participating region.

Before distributing the questionnaires, the researcher fully briefed participants about the nature, aim and time required to respond to the survey during village meetings and when handing out questionnaires to the respondents. Furthermore, participants were asked to complete a consent form. It assured them that they could withdraw from the study at any time within a six-month period following the survey. The study allocated 30 minutes for each participant to understand the questionnaire and 15 minutes to fill it. In addition, the researcher allocated to respondents a maximum of seven days to respond to the survey at his or her convenience. The survey sought the participation from both adult females and males with adequate experience. The collected data was analyzed with the SPSS statistics program.

3.0 RESEARCH FINDINGS

Table 1: Survey Results

Variables	Responses	TA	TO	H
1. ICT Adoption	Yes	22	14	27
	No	0	88	57
	Total	22	102	84
2. ICT Investment	Yes	04	05	15
	No	18	97	69
	Total	22	102	84
3. Online Transaction	Yes	22	03	25
	No	0	99	59
	Total	22	102	84
4. Online Marketing	Yes	22	14	27
	No	0	88	57
	Total	22	102	84
5. Product and Process Innovation	Yes	12	2	11
	No	10	100	73
	Total	22	102	84

Source: Survey Data, 2020

*TA stands for Travel Agents

*TO stands for Tour Operators

*H stands for Hospitality

It is clear that there is a massive variation in ICT adoption, investment and practice in various tourism enterprises in Tanzania as indicated in Table 1. According to these findings, almost one third of tourism enterprises (30.3%) use ICT to streamline their operations while the remaining two thirds (29.7%) still operate with the traditional approach. A higher proportion of ICT adopters were travel agents (34.9%) than hospitality (34.9%) and tour operators (29.0%) ($p > 0.05$).

Due to confidentiality, it was difficult to disclose monetary expenditure details on infrastructure. Instead, each tourism enterprise was assessed regarding the possession of ICT hardware, network and software. In other words, the type and number of hardware, network and software were identified from each enterprise. In this case, about one tenth of tourism enterprises (11.5%) have invested in ICT infrastructure while the remaining two thirds (88.5%) still outsourced their ICT services. A higher proportion of those enterprises with ICT investment were hospitality (60.0%), tour operators (20.8%) and travel agents (19.2%) ($p < 0.05$). Also, the findings suggest that about one quarter of tourism enterprises (24.1%) perform their financial transactions online while the remaining three quarters (88.5%) performed offline transactions. A higher proportion of these enterprises were hospitality (50.0%), travel agents (44.0%) and tour (6.0%) ($p > 0.05$). Almost one third of tourism enterprises (30.3%) use ICT to market their products online while the remaining two thirds (29.7%) still conduct offline marketing. A higher proportion of those enterprises were travel agents (34.9%), hospitality (34.9%) and tour operators (29.0%) ($p > 0.05$). According to the survey, almost one tenth of tourism enterprises (12.1%) deploy ICT for innovation of their products and services while the remaining (87.9%) perform the innovation of tourism products and services with a conventional approach. A higher proportion of those performing online innovations were travel agents (45.0%), hospitality (44.0%) and tour operators (11.0%) ($p < 0.05$).

4.0 DISCUSSION OF SURVEY RESULTS

These empirical findings maintain that there is an unsatisfactory ICT adoption among tourism enterprises in the study area as many of them still operate in a conventional manner. This may be due to lack of or inappropriate national ICT policy and ICT infrastructure. They might offer a shared guideline for tourism enterprises to adopt and use ICT

systematically. Moreover, some enterprises would not like to make mistakes by adopting and using unknown or unfamiliar technologies. However, these tourism firms should have used such mistakes as opportunities for learning and unlocking the usefulness of ICT potentiality. Instead they believe the impractical myths inherited from previous unrelated illustrations which usually treat mistakes as evils or bad things. In the researcher's view, such enterprises commit an error of omission by failing to do something they should have done to improve their operations. They could increase their competitiveness and innovations by reducing needless transaction and operation costs.

The survey suggests that a number of firms with ICT usage is more or less the same in all subsectors of tourism. However, there is a slight variation in ICT adoption and usage which may have been caused by the perceived ICT usefulness among tourism enterprises in Tanzania. It is important to note that the enterprises' scale and niche may have influenced ICT adoption or rejection rates. The majority of surveyed enterprises, with the exception of travel agencies, range from small to medium tourism enterprises in the study area. They are mostly operating at the local and regional level. This may have caused such enterprises to disregard ICT adoption due to an inadequate number of qualified staff and the type of customers they serve (Irvine, 2008; Gruescu et al., 2009). Similarly, such micro-tourism enterprises perceive ICT usage as waste of resource and time. According to their perceptions, ICT should only be adopted by macro-tourism enterprises operating mostly on a global scale.

In addition, the survey maintains that travel agents are the fastest and the most successful ICT adopters of all tourism subsectors in the study area as they have fully adopted ICT innovations. The nature of a travel agency business necessitates many agencies adopting ICT. This is because the travel agency firms have to connect with tourism services consumers and suppliers distantly and instantly. In addition, travel agencies heavily depend on availability and accessibility of tourism products from their principal tourism suppliers. Also, the intangible, competitive, and flexible nature of tourism services may equally dictate that agencies unconditionally use ICT innovations to conduct their business transactions. The findings also show that tour operators are the lowest ICT adopters of all tourism subsectors. This could be because either the majority of tour operators are locally owned and operated or the majority of tour operators participated in this study were small scale tourism enterprises.

Due to small income and low level of investment, the majority of tourism enterprises in the study area ranged from small to medium enterprises (Buhalis and Kaldis, 2008). In this case, the size of their income and investment capital reflect their low ICT investment capability. Only a few enterprises have invested fully in ICT infrastructure. The majority of those who invested were from the hospitality subsector. In other words, the majority of ICT adopters were small scale enterprises with web applications for online transactions, bookings and marketing only. The large scale tourism enterprises generally have an adequate and reliable budget to hire ICT experts who can develop and maintain world class ICT services for them to compete globally (Pease et al., 2007).

It is clear from the survey that nearly a quarter of ICT users conduct online transactions. Thus the majority of ICT users do not conduct financial transactions online due to many reasons. These include the users' persistent attitude towards the insecurity of online transactions. However, it is important to view their concept or perception of online transactions with a third eye. These perceptions are underpinned by numerous factors prior to and during their successful completion. On the one hand, the tourism enterprise needs to be willing to conduct online transactions transparently, honestly, be willing to trust their customers if they want to offer online virtual services and products. On the other hand, customers' attitudes towards offered services, suppliers' integrity and terms of services of online business should be clearly stated beyond doubt.

In view of this, it is possible that many tourism enterprises in Tanzania may have attempted to conduct online transaction without any success. This may be because of unsupportive customers and a consequence of either their breaching of business terms, business dishonesty, inappropriate legislation and other factors. In addition, there are some enterprises which are still in their initial adoption stage. In such instances, the delay may be due to unclear legal and policy procedure, inadequate technical expertise and lack of necessary resources. Even those enterprises practicing online transactions hardly ever conduct them perfectly. There are many factors including authenticity issues, stage of adoption, inappropriate security policy and confidentiality arising from making an online transaction. These may hinder their operations.

According to the survey, the introduction and familiarization of tourism services to customers was a

prime goal of ICT adoption for the many ICT adopters in the study area. This is because ICT innovations seem to be relatively cheap and convenient. Regrettably, this survey did not investigate the forms of online marketing which each tourism enterprise used. It only examined online marketing adoption rates among tourism enterprises. However, it is difficult to know the probable reasons why the majority of ICT adopters conduct online marketing. Perhaps it is the perceived cheapness of the online marketing as conventional marketing tends to be more costly in terms of time and resources. Studies emphasize that costs of traditional marketing are relatively high and continue to increase day by day (Buhalis and Kaldis, 2008). Since many were small to medium scale tourism enterprises with inadequate budget and marketing expertise, online marketing reduces costs and increases visibility of their services and products to many customers.

In addition, ICT adopters perceive online marketing as the most convenient and advantageous marketing platform. This is due to its flexibility and reliability in marketing services throughout the day, week and across all geographical ranges without incurring unnecessary staff and logistical costs. It sometimes paves a way for enterprises to prove itself before customers as reliable, active and dynamic entities striving to grow and offer pertinent products to customers (Slykes, 2008; Pease et al. 2007). By this means, a tourism enterprise might create and retain adequate customer bases. In this era of portable electronic devices, online marketing increases the visibility of the enterprise and provides interactions between tourism enterprises and customers. Such interactions may help enterprises perform a customer centered service innovation, monitoring and evaluation (Gilbert and Cordey-Hayes, 1996; Jacob et al., 2003).

Moreover, traditional marketing has only one way communication which usually deters interactions between enterprises and customers. As example, printed media and television hardly provide enterprises with opportunities to learn about product acceptance and the concerns from customers. Online marketing creates a close relationship with customers and makes them feel a part of the enterprise. In addition, most enterprises use online marketing to place themselves at the top of search engines to drive and attract potential customers to their sites. This is because most customers are online and use the internet to search all important information about destinations, travel facilities and attractions (Xiaoqiu et al., 2003). It is also important to highlight the hindrances to online marketing. It necessitates possession and maintenance of digital

items and digital experts. In some cases these might be scarce and expensive for small scale enterprises. Frequent updating of online digital resources to cope with tourism seasonality and technological advancement might hinder adoption of online marketing by some enterprises due to lack of experts or the associated costs. Also, exposure of security and privacy details of customers also may stop or discourage tourism enterprises from adopting online marketing.

Before an evaluation of ICT functionalities on product and process innovations, we briefly like to elaborate on the main determinants of ICT innovation. Studies maintain that for enterprises to engage in full e-innovation, an adequate investment in equipment and training for innovations is inevitable (Martin, 2004; Buhalis and Kaldis, 2008). Based on the literature, the degree of internalization of the enterprise, whether it is an ISO certified enterprise and the nature of market demand might necessitate enterprises conducting e-innovation (Martin, 2004). Since our results highlight that few tourism enterprises in Tanzania have been able to adopt e-innovation in the study area, this conclusion is consistent with the current low number of ICT adopters with adequate ICT investment in the study area. In other words, only large scale enterprises are capable of conducting product and process innovations due to the availability of robust capital (Gyaase et al., 2013). Since small scale enterprises have limited resources, they can hardly perform e-innovation due to lack of skilled labor and limited budgets (Evans and Peacock; Byrd, 1997).

5.0 CONCLUSION

A few tourism enterprises enjoy the presence and advantages of ICT innovations. Other enterprises are at a cross road not knowing whether to adopt or reject ICT innovation. ICT usage usually reduce management costs considerably. ICT tools modernize and simplify daily operations of enterprises at low costs. For examples, in this study, ICT adopters have deployed online marketing because it seems to be more convenient and cheaper than conventional marketing approaches. In additional, online transaction seems to be suitable for some tourism enterprises due to its affordability and practicality compared to traditional transactions. Despite its perceived usefulness, many tourism enterprises in Tanzania are still unenthusiastic about ICT adoption. In this study, the size or growth phase of tourism enterprises contributed to high ICT rejection and low adoption rates. This is because the

majority of the respondents were from small enterprises that could hardly afford to either hire or invest in reasonable ICT infrastructure. Such enterprises generally operate at either the national and regional level as well as lack appropriate training in running and maintaining an ICT environment. The level and type of competitiveness and productivity sometimes necessitate tourism enterprises to either adopt or reject ICT innovations. Large scale tourism enterprises, in the study area, operating and competing mostly with international enterprises halfheartedly adopted ICT innovations to internationalize and modernize their business.

It is safe to say that not all enterprises are reluctant to adopt ICT innovations as there are who are willing but are still indecisive. For enterprises to have a full ICT environment, there should be a crystal clear national ICT policy, an enabling environment, competent ICT personnel and limited budget to facilitate the installation of an ICT environment. Without those factors, it is noticeably hard for some tourism enterprise to abruptly adopt or reject ICT without a prior assessment. ICT innovations have their own positive and negative sides. Alongside the simplifying of tourism related tasks, cybercrime rates have also become high. For tourism enterprises, the higher the cybercrime statistics, the more dangerous ICT becomes in terms of financial considerations. The majority of tourism enterprises and their customers are uncertain about whether an online business transaction is safe or not. It is a matter of perception as theoretically stipulated by TAM that ICT adoption or rejection depends on the belief of customers and enterprises.

REFERENCES

- Alu, W., 2002. Barriers to technology transfer: infrastructure difficulties in Nigeria, *European Journal of Information Systems*, 71-92.
- Buhalis, D., and Kaldis, K. 2008. E-enabled internet distribution for small and medium sized hotels: the case of Athens. *Tourism Recreation Research*, Vol. 33 No. 1, 67-81.
- Byrd, T.A., and Marshall, T.E. 1997. Relating information technology investment to organizational performance: A causal model analysis. *OMEGA International Journal of Management Science*, Vol. 25 No. 1, 43-56.

- Caselli, F., and Coleman, W. J., 2001. Cross-Country Technology Diffusion, The Case of Computers, American Economic Review, Papers and Proceedings, 328-335.
- Evans, G., and Peacock, M. 1999. A comparative study of ICT and tourism and hospitality SMEs in Europe in Buhalis, D. and Schertler, W. (Eds.), 1999. Information and Communication Technologies in Tourism. Wien: Springer-Verlag, 247-257
- Gilbert, M. and Cordey-Hayes, M. 1996. Understanding the process knowledge transfer to achieve successful technological innovation. Technovation Vol. 16, No. 6, 301-312.
- Goodhue, D., and Thomson, R. 1995. Task technology fit and individual performance. MIS Quarterly, Vol. 19 No. 2, 17-34.
- Gruescu, R., Nanu, R., and Pirvu, G. 2009. Information and Communications Technology and Internet Adoption Tourism. Bulletin UASVM Horticulture, Vol. 66 No. 2, 407-413.
- Gyaase P. O., Anokye-Sarfo, A., and Bediako, Y., 2013. The adoption of information and communication technology in the public sector: A study of the financial management in the Ghana Education Service (GES). International Journal of Scientific and Technology Research Volume 2, Issue 12, 45-67.
- Hargittai, E. and Norris, L. 2000. Weaving the Western Web: Explaining the Differences in the Internet Connectivity Among OECD Countries, Telecommunication Policy, Vol. 23, 701-718.
- Ige, O., 1995. Information technology in a de-regulated telecommunications environment. First International Conference on Information Technology Management, Lagos, Nigeria, 25-37.
- Irvine, A., and Anderson, A.R. 2008. ICT (information communication technology), peripherality and smaller hospitality businesses in Scotland. International Journal of Entrepreneurial Behaviour and Research. Vol. 14 No. 4, 200-218.
- Jacob, M., Tintoré, J., Aguiló, E., Bravo, A., and Mulet, J. 2003. Innovation in the tourism sector: Results from a pilot study in the Balearic Islands. Tourism Economics Vol 3. No1, 34-45.
- Law, R. and Jogaratnam, G. 2005. A study of hotel information technology applications. International Contemporary Hospitality Management. Vol. 17 No. 2, 170-180.
- Martin, L.M. 2004. E-innovation: Internet impacts on small UK hospitality firms. International Journal of Contemporary Hospitality Management. Vol. 16 No. 2, 82-90.
- Mathieson, K. 1991. Predicting user intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior," Information Systems Research, Vol. 2 No 3, 173-191.
- Mezgar I. 2006. Integration of ICT into Smart Organizations. London: Idea Group Publishing
- Mihajlovic, I. 2012. The impact of information and communication technology (ICT) as a key factor of tourism development on the role of Croatian travel agencies. International Journal of Business and Social Science. Vol. 3 No. 24, 151-159.
- Minghetti, V. and Buhalis, D. 2010. Digital divide in tourism. Journal of Travel Research. Vol. 49 No. 3, 267-281.
- Montealegre, R. 1999. A temporal model of institutional interventions for Information Technology adoption in less developed countries, Journal of Management Information Systems, Vol. 16 No.1, 207-232.

- Osterwalder, Z. 2003. What do professional persons think about computers? *Bahaviour and Information Technology*, Vol.1 No., 55-68.
- Pease, W., Rowe, M., and Cooper, M. 2007. *Information and Communication Technologies in Support of the Tourism Industry*. London: Idea Group Publishing.
- Scharl, A. 2007. Towards the geospatial web-media platforms for managing geo-tagged knowledge repositories in The Geospatial Web: How Geobrowsers, Social Software and the Web 2.0 are Shaping the Network Society (Advanced Information and Knowledge Processing). New York: Springer-Verlag, 26-38.
- Scheidegger, E. 2006. Can the state promote innovation in tourism? Should it? in OECD (Ed.), *Innovation and Growth in Tourism*. Paris: OECD, 11-16.
- Shanker, D. 2008. ICT and tourism: Challenges and opportunities. Conference on Tourism in India - Challenges Ahead. Indian Institute of Management, Kozhikode. May 15-17.
- Sigala, M. 2003. The information and communication technologies productivity impact on the UK hotel sector. *International Journal of Operations and Production Management*, Vol. 10, 1224-1245.
- Slyke, C. 2008. *Information Communication Technologies: Concepts, Methodologies, Tools, and Applications*. New York: Information Science Reference.
- Teo, H. H., Wei, K. K., and Benbasat, I. 2003. Predicting Intention to Adopt Interorganizational Linkages: An Institutional Perspective. *MIS Quarterly*. Vol. 27 No. 1, 19-49.
- Venkatesh, V. 2000. Determinants of perceived ease of use: integrating control, intrinsic motivation and emotion into the Technology Acceptance Model, *Information Systems Research*, Vol. 11 No. 4, 342-465.
- Byrd, T.A., and Marshall, T.E. (1997). Relating information technology investment to organizational performance: a causal model analysis. *OMEGA International Journal of Management Science*, 25(1), 43-56.
- Xiaoqiu Ma, J., Buhalis, D., and Song, H. (2003). ICTs and Internet adoption in China's tourism industry. *International Journal of Information Management*, 23(6), 451-467.