Barriers of e-Tourism Adoption in Developing Countries: A Case Study of Nepal

Sanjay Lama
School of Information, Systems and Modelling
University of Technology Sydney
Sydney, Australia
Email: Sanjay.Lama@student.uts.edu.au

Sojen Pradhan
School of Information, Systems and Modelling
University of Technology Sydney
Sydney, Australia
Email: Sojendra.Pradhan@uts.edu.au

Anup Shrestha
School of Management and Enterprise
University of Southern Queensland
Toowoomba, Australia
Email: Anup.Shrestha@usq.edu.au

David Beirman
Management Discipline Group
UTS Business School
University of Technology Sydney
Sydney, Australia
Email: David.Beirman@uts.edu.au

Abstract

Developing countries lack e-tourism competencies despite attractive destinations to offer. Nepal is one of the developing countries with its natural beauty and diverse cultural heritage that has great tourism potential. This research is aimed at identifying barriers of e-tourism adoption in developing countries, using Nepal as a case study. Based on the Technology, Organization and Environment (TOE) and e-readiness models, and our literature review, we propose ten factors that affect e-tourism adoption. We applied mixed methods to validate these factors using seven interviews with relevant stakeholders and a survey of 198 tourism organisations in Nepal. The results demonstrate that e-tourism adoption is affected by environmental factors such as lack of national infrastructure, market size, and country-specific contextual factors. Similarly, organizational factors include lack of e-tourism awareness, lack of resources, low value proposition and limited top management support. Finally, we discuss these factors and its implication to policy and practice.

Keywords
e-Tourism; technology adoption barriers; environmental and organisational factors; developing countries; Nepal

1   Introduction

In the global tourism business, travellers today have access to faster and cost-effective online platforms for planning, booking and paying for their future trips (Buhalis & Jun, 2011). New technologies have offered tourists the flexibility and choices during pre-purchase activities such as searching, planning and comparing tour packages (Buhalis & Law, 2008). Similarly, potential tourists can read online reviews and contact several travel agencies before making final purchase decisions for hotels and tourist destinations (Gonzalo, 2014). In such a competitive e-tourism ecosystem, developing countries are missing out to offer pre-purchase facilities to potential tourists even though these countries often have attractive destinations to offer in order to claim a greater market share. Tourism operators in developing countries, particularly small and medium tourism operators (SMTEs) that lack global franchise connections, are lagging behind in the uptake of e-tourism features in their services.

This research is aimed at identifying barriers of e-tourism adoption in one of the developing countries, taking Nepal as a case study. Nepal has great tourism potential with its natural beauty and diverse cultural heritage. Nevertheless, there is limited adoption of e-tourism in Nepal and majority of travel businesses operate traditionally. Therefore, developing countries like Nepal fail to reach its potential target market as tourism operators are unable to offer technology-enabled pre-purchase facilities. In this context, this research is aimed at: (a) identifying the barriers that affect e-tourism adoption by SMTEs; and (b) creating a conceptual model for effective adoption of e-tourism in developing countries.

Despite having own unique contexts and specific environments, developing countries typically share several common features such as low ICT adoption index, turbulent political and macroeconomic circumstances (Karanasios & Burgess 2008). There have been several research on general e-commerce adoption in developing countries but very few have focused on the tourism industry. It is widely recognized that the factors impacting e-commerce adoption differ greatly for every industry (Brdesee, 2013). Therefore, the 'one-size-fits-all' model may not be feasible for e-commerce adoption (Molla & Licker, 2005). Consequently this research attempts to explore unique scenarios in terms of barriers of e-tourism adoption in Nepal.

We present a background on tourism in developing countries, relevant factors for e-tourism adoption and widely accepted frameworks of technology adoption. It is followed by an introduction to the case study of tourism in Nepal. We discuss our research methodology and present a conceptual model for e-tourism adoption. Finally, we conclude with possible future research directions and implications for developing countries.

2   Background

Tourism is one of the biggest exports of over eighty percent of developing countries (Samimi et al., 2011). According to World Tourism Organization (UNWTO), the ratio of tourists who visited developing countries is 40 % and is increasing (UNWTO 2017). Similarly, UNWTO, in its report revealed that tourism is contributing between 3 to 10 % of the overall GDP of many developing countries.

Because of the nature of tourism services that is usually intangible and perishable, it is one of the most appropriate industries for the adoption of ICT (Karanasios & Burgess, 2008). Searching and booking travel commodities, such as accommodation, tours and flights have been one of the most online frequent activities. With the advent of Web 2.0 and review/ranking sites such as TripAdvisor, Expedia and Booking.com, tourists spend a lot of their time researching before making a final decision. Activities such as inquiries, bookings, and confirmation of tickets require clear communication between providers and consumers. Gonzalo (2014) found that 27 % of hoteliers communicate with customers before their arrival.

E-tourism is also enabling comparison of tourism service offerings, getting real-time prices and enabling transparent tourism-related processes (Buhalis & Jun, 2011). With the growing

popularity of websites such as Tripadvisor.com, people are interested in expressing their views and reading other's experiences and opinions on the Internet. TripAdvisor already has around 170 million reviews, with over 280 million unique visitors every month, which shows extensive utilization of e- tourism (Gonzalo, 2014). Yet, SMTEs in developing countries like Nepal have lagged behind in the adoption of e-tourism primarily due to technology barriers.

3   E-Tourism in Nepal

Nepal is an attractive tourist destination. Lonely Planet, the largest travel guide book publisher, ranked Nepal as one of the best destinations to travel in 2017. Nepal is rich in cultural diversity, sculptures, heritage, natural beauty and home to many flora and fauna. Popularly known as the land of Himalayas, it has more than 1,300 mountain peaks and is one of the most visited travel destinations for mountaineers, trekkers and adventure seekers. It is home to eight of the ten highest mountains in the world. Despite the abundance of natural resources and huge potential for tourism business, the tourism industry has not contributed significantly towards uplifting the economic status of the nation in a sustainable manner. Nepal is one of the developing countries with low human development index of 0.558 and ranks 144th in the overall index (UNDP 2017). Tourism is one of the major sectors which provide a large number of employment (approximately 427,000 people) and contributed almost 7.5 % of total Gross Development Product (GDP) in the year 2016 (World Travel and Tourism Council 2017).

ICT infrastructure in Nepal is underdeveloped and largely centralized in the capital city of Kathmandu. Though the computers and Internet usage started in the early 90's, the overall ICT development has been sluggish. The government created the IT Policy 2000 (Ministry of Science and Technology 2000) with the objective of making ICT more accessible to the public and create knowledge-based societies and industries. It was a government initiative to use IT as a tool for development and growth (Ministry of Information and Communication 2015). Similarly, the Electronic Transaction Act 2008 governs the electronic transactions in Nepal (Ministry of Science and Technology 2008) with provisions for recognition of digital documents and electronic transactions. However, full implementation of the Act still faces many challenges from practical difficulties, lack of readiness and co-ordination among key stakeholders (Dhami 2015). Due to these significant hurdles, e-tourism has not been adopted in Nepal beyond the primary use of websites for general information for tourists.

4   Theoretical Framework & Hypotheses

Since e-tourism adoption is a technology-based phenomenon, we reviewed widely accepted technology adoption frameworks: Theory of Reasoned Action (TRA) (Ajzen & Fishbein 1980), Technology Acceptance Model (TAM) (Davis 1989), Technology, Organization and Environment (TOE) model (Tornatzky et al. 1990), TAM 2 (Venkatesh & Davis 2000), Unified Theory of Acceptance and use of Technology (UTAUT) (Venkatesh et al. 2003) and e-Readiness model (Molla & Licker 2005).

Each framework and its components were examined with a view to adapt it to establish a framework for e-tourism adoption for developing countries, using Nepal as a case study. Evaluation criteria for fit of these well-established frameworks for our research setting were conducted based on the three parameters: (a) Unit of analysis: individual (I) or organisation (O); (b) prior studies in the context of developing countries; and (c) focus on technology. Evaluation of contemporary technology adoption frameworks for e-tourism adoption in developing countries is presented in Table 1.

Evaluation in Table 1 demonstrate that TOE (Tornatzky & Fleischer 1990) and e-readiness model (Molla & Licker, 2005) operate at organizational unit of analysis which is relevant to our study. Furthermore, e-readiness model has been extensively studied in the context of developing countries. Consequently, we select these two frameworks to study factors affecting technology for SMTEs in Nepal. TOE focuses on three factors: technology, organization and

environment; that influence technology adoption within a business. E-readiness model emphasizes perceived external e-readiness (PEER) and perceived organizational e-readiness (POER) towards technology adoption. From these two frameworks, seven factors: market forces, supporting industries, contextual factors, infrastructure, awareness, resources and owner or top management support are proposed.

Table 1: Evaluation of popular frameworks about technology adoption for e-tourism in developing countries

		Evaluation		
Frameworks	**Review**	Unit of Analysis	Context of Developing Countries	Technology Focus
TRA (Ajzen & Fishbein, 1980)	studies human behaviour at the individual level rather than organisation level.	I	✗	✗
TAM (Davis, 1989); TAM 2 (Venkatesh & Davis, 2000)	relevant for individual-level technology adoption	I	✗	✔
TOE (Tornatzky and Fleischer, 1990)	studies innovation adoption on the organisation level.	O	✗	✔
UTAUT (Venkatesh et al., 2003)	technology adoption study at the individual level.	I	✗	✔
E-readiness model (Molla & Licker, 2005)	studies perceived organisation e-readiness and environmental e-readiness.	O	✔	✔

Beyond the seven proposed factors from the theoretical frameworks, we introduced three more factors based on extant literature review of tourism-related issues in the developing countries. Kshetri (2007) included factors related to language and culture into one category called cognitive factors. Similarly, Kapurubandara and Lawson (2006) used "social-cultural" term to include factors related to culture. These two factors 'cultural barriers' and 'language barriers' are merged into a single category and termed as "*socio-cultural*" factor in this study. Other factors investigated in the literature include 'perceived benefits' and 'relative advantage' which are related to the value that the adoption of e-commerce can add to the organizations (Kabanda & Brown, 2010). Other studies (Dwivedi et al., 2009; Rowe et al., 2012; Scupola, 2003) investigated e-commerce adoption and examined relative advantage or value proposition factors based on TOE model. Since both factors are related to the value, they are grouped into a new category and named "*value proposition*". Finally, factors associated with security concerns, trust and privacy challenges in the area of e-commerce (Pearson & Grandon 2004; Ghobakhloo et al. 2011) are included broadly in the category called "*security concern*".

The ten factors proposed for this study is grouped under two categories: environmental and organisational factors; and further divided into sub-factors that are associated with each factor. These are outlined in Table 2.

A set of hypotheses has been formulated for each factor to test the impact on e-tourism adoption, resulting in 10 hypotheses (H1 to H10) for these factors. They are listed next.:

H1: Lack of national infrastructure negatively influences the adoption of e-tourism

There are several types of infrastructure which impact on the e-tourism adoption. The unreliable supply of power, as argued by previous studies (Kabanda & Brown 2010; Kapurubandara & Lawson 2006; Karanasios & Burgess 2008; Kshetri 2007; Shrestha et al. 2015) is one of the major concerns. Some of the studies also pointed out that the technological infrastructure such as slow and inadequate telecommunication and internet technologies as well as lower penetration of e-payment cards influence the lower adoption. Appropriate laws

and policies are incorporated as legal infrastructure and they are also of concern and influence the e-commerce adoption (Dhami 2015; Hunaiti et al. 2009; Shemi 2013; Zaied 2012).

Table 2. Proposed e-Tourism adoption factors in developing countries

Category	Factor	Description
Environmental Factors	**National Infrastructure**	
	Electricity	Availability of electricity in the country.
	Financial	Condition and readiness of financial institutions for the adoption.
	Technological framework	Situation of country regarding technical resources such as status of internet, digital divide, e-readiness.
	Legal framework	National status of country regarding laws relating to e-commerce.
	Market Forces	
	Market forces e-readiness	Degree to which market and organisations partners such as customers are ready for e-commerce adoption.
	Pressure from competitors	Pressure to adopt e-commerce because of competitors adopting e-commerce or similar technologies.
	Supporting IT Industry	
	IT organizations	Readiness, capability and status of IT organisations to implement
	Socio-cultural Factors	
	Language	The language used for technology and lack of knowledge about it.
	Culture	Culture of the country such as tradition, ways of doing things.
	Context of the Country	
	Condition of country	Political situation of country and its effect on e-commerce adoption.
	Plan and policies	Plans and policies of government relating to technology.
	Incentives from government	Incentives and motivation provided by government for the adoption.
Organizational Factors	**Awareness**	Owner's knowledge and information about e-commerce and its benefits and usage.
	Resources	
	Skill & Human resource	Human skills and other skills to implement e-commerce.
	Cost of resource	Initial and operational required for e-commerce.
	Technological	Technological resources such as hardware and software.
	Security	
	Lack of trust	Confidence that using e-commerce is safe and trustworthy.
	Privacy	Concern about of the privacy and data misuse.
	Value proposition	
	Perceived benefits	Expected benefits of using e-commerce in the organisation.
	Relative Advantage	Degree to which an innovation is perceived as better than existing
	Owner or Top Management	
	Owner support	The degree of owner's commitment and encouragement to use.
	Background and knowledge	Owner's information and knowledge about e-commerce.

H2: The market forces for tourism industry has a positive influence on e-tourism

The market size and its potentials are attractive and conducive to adopt new ICT tools (Ahmad & Agrawal 2012; El-Nawawy & Ismail 1999; Molla & Licker 2005). Similarly, a pressure from

competitors also positively motivates to adopt e-commerce (Chen & McQueen 2008; Chong & Pervan 2007; Hitt & Brynjolfsson 1997; Simpson & Docherty 2004).

H3: Supporting industries negatively influence the adoption of e-tourism

The readiness of supporting industries to support, facilitate and their ability to provide services is crucial for e-commerce adoption (Kabanda & Brown 2010). E-commerce implementation requires coordination with IT companies. Better support from the IT vendor results into higher e-commerce adoption (Ghobakhloo et al. 2011).

H4: Socio-cultural factors negatively influence the adoption of e-tourism

Each society is characterised by own values and norms which makes it unique. These different types of culture in different countries and regions also impacts how e-commerce is adopted (Chong et al. 2009; Saffu et al. 2008; Thatcher et al. 2006). Nepal is a country which is diverse and rich in culture (Shrestha et al. 2015) and its influence in the adoption of e-commerce is also important to investigate.

H5: The lack of government incentives discourages SMTEs to adopt e-tourism

Nepal has been going through unstable political situation for more than a decade. Unstable government and political situation deter the adoption of e-commerce (Al-Weshah & Al-Zubi 2012; Kapurubandara & Lawson 2006) whereas some studies demonstrated that the support and incentives from the government have encouraged the adoption of the technologies (Al-Weshah & Al-Zubi 2012; Karanasios & Burgess 2008; Cameron & Quinn 2005).

H6: Awareness of e-commerce has positively influenced the adoption of e-tourism

As awareness has been found to be one of the common factors influencing e-commerce in several studies (Hunaiti et al. 2009; Karanasios & Burgess 2008; Kshetri 2007; Molla & Licker 2005; Zaied 2012), the correlation between awareness and its influence on e-commerce adoption by SMTEs of Nepal is evaluated.

H7: The lack of resources in SMTEs of Nepal, negatively influences the adoption of e-tourism

Resources include human resources, resources related to cost, technological resources, and other business resources. Kapurubandara and Lawson (2006) and Al-Weshah and Al-Zubi (2012) stated that lack of skills is one of the most important barriers of e-commerce adoption. Among others, cost of resources is another major influencer in regards to the adoption (Datta 2011; Karanasios & Burgess 2008; Kartiwi & MacGregor 2007; Shrestha et al. 2015; Uzoka & Seleka 2006; Zaied 2012).

H8: The digital security concerns among owners of SMTEs in Nepal discourages the e-tourism

Due to intangible nature of internet operations, people are fearful of being victim to internet frauds. Trust and confidence are found to be essential for e-commerce (Lawrence & Tar 2010). Buhalis & Jun (2011) assert that in the tourism industry, lack of trust inhibits buying and selling activities and expressed their concerns about paperless and faceless transactions in the online arena.

H9: The value proposition is positively related to the adoption of e-tourism

The perceived benefit refers to the expectation that specific benefits will be achieved by practising specific action or behaviour. Pearson and Grandon (2004) argue that if organisation perceives that e-commerce increases the managerial productivity and support strategic decisions, then it may be adopted. Relative advantage is the degree to which an innovation is perceived as better than the existing idea or system it supersedes (Rogers 2010). Various studies have indicated relative advantage as one of the factors influencing e-commerce adoption (Ahmad et al. 2015; Brdesee 2013; Dwivedi et al. 2009; Grandon & Pearson 2004).

H10: Owner's support has positively influenced the adoption of e-tourism

Top level manager or owner's commitment is one of the most important factors found in many studies. They have indicated that manager's knowledge of e-commerce and commitment to adopt e-commerce have a considerable bearing on adoption decision (Al-Weshah & Al-Zubi 2012; Kapurubandara & Lawson 2006; Karanasios & Burgess 2008; Shemi 2013). In addition to manager's perspective, the characteristic or knowledge of manager about e-commerce is also an important factor (Brdesee 2013).

Based on the proposed hypotheses, we present our research model in Figure 1. Next we discuss research methodology.
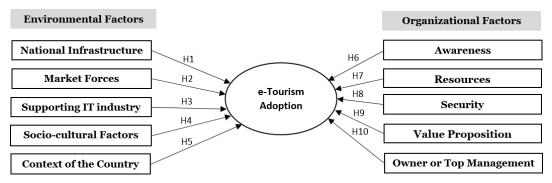

Figure 1. Research model on e-tourism adoption for developing countries

5   Research Methodology

This research uses mixed methods - qualitative and quantitative approaches to collect data through interviews and surveys with representatives of tourism associations and SMTEs in Nepal. The validation in this research has been done in two stages, first through content analysis from the semi-structured interview (qualitative) and then through statistical analysis from the survey (quantitative). The triangulation of multiple methods for data collection and analysis enhance interpretability, reliability and internal validity making results more robust (Creswell & Clark 2011).

The first sets of factors are derived from the relevant literature as presented in Figure 2. Then semi-structured interviews were conducted with seven representatives of the major stakeholders. Three major associations, one semi-government body, two tourism organizations, and a related stakeholder from the government were selected for the interview. The objectives of the interviews were to i) validate the proposed factors and the conceptual model (Figure 2) ii) and add new factors which may be relevant in the context of Nepal. The respondents were selected through purposive or judgmental sampling technique. Purposive sampling is a type of non-probability sampling and informant selection tool, through which informants are chosen non-randomly based on the qualities the informant possesses such as knowledge or experience (Tongco 2007).

Most of the reported factors are found to be consistent with the factors compiled from the literature review. After the content analysis of interview data, two new sub-themes: *Resistance to Change* and *Awareness of Social Media*, were added. These new sub-themes were classified under existing factors. Questionnaire related to 'resistance to change' was added to "Socio-cultural factors" and whereas 'awareness of social media' is included in the factor "Awareness".

The survey questionnaire was distributed to 250 SMTEs of Nepal using a random sampling method to validate the factors, from which 198 SMTEs (almost 80 %) responded. The composition of SMTEs consists of 98 tour and travel agencies (almost 50 %), 72 trekking agencies (36 %) and 28 small hotels (14 %).

Through the quantitative data, hypothesis testing was used to validate the factors and the conceptual model. The hypotheses have been set up to check the relationship between different factors and e-tourism adoption by SMTEs. The hypotheses were formulated based

on the factors identified through literature reviews and semi-structured interviews. The five-point Likert scale is used in the survey questionnaire. The highest scale 5 represented 'strongly agree', the next scale 4 'agree', 3 'neutral', 2 'disagree' and 1 'strongly disagree' respectively. SPSS was utilized for the statistical analysis of the quantitative data. The binary logistic regression method was used to test the hypotheses because of the binary nature of dependent variable i.e. e-tourism adoption. Reliability and validity checks were performed to ensure the consistency and quality of the data.

6 Analysis and Results

6.1 Reliability Analysis

The Cronbach's alpha is typically used to assess the internal consistency of the factors in the model (Hair et al. 2006). The Cronbach alpha of greater than 0.60 is acceptable and reliable for exploratory research, and greater than 0.70 is recommended for the confirmatory research (Straub et al. 2004). The table below shows the reliability of the survey data.

Table 3. Reliability Test of Survey Data

Environmental Factors	Cronbach α	Organizational Factors	Cronbach α
National Infrastructure	0.759	Awareness	0.851
Market Forces	0.722	Resources	0.842
Supporting IT Industry	0.721	Security & Trust	0.787
Socio-cultural Factors	0.788	Value Proposition	0.760
Context of the Country	0.718	Owner or Top Management	0.723

6.2 Hypothesis Testing Results

The factors explored in this study are independent variables, and the adoption of e-tourism is the dependent variable. We used binary regression to investigate the relation between the independent and dependent variable. The hypothesis which investigates the effect of various factors on e-tourism has been examined.

The significance value ($p<0.05$) indicates that the factors are significant in the model. After the analysis, three environmental factors (lack of infrastructure, market size and lack of support from the government from the context of the country) and four organizational factors (awareness, lack of resources, value proposition and top management support) were found to be significant in e-tourism adoption by SMTEs of Nepal. The two environmental factors (supporting IT industry and socio-cultural factors), as well as one organizational factor (security concern), were found to be non-significant.

The result of binary regression for the proposed model is presented in Table 4.

Table 4. Binary Regression Results

Factor	β	S.E.	Wald	df	Sig.(p value)	Exp(B)	Result
Lack of National Infrastructure	-.486	.236	4.243	1	.039 (<0.05)	.615	Supported
Market	.651	.255	6.525	1	.011 (<0.05)	1.918	Supported
Supporting IT Industry	.411	.251	2.674	1	.102 (>0.05)	1.509	Not Supported
Socio-cultural	.029	.221	.017	1	.896 (>0.05)	1.029	Not Supported
Context of the Country	-.436	.201	4.711	1	.030 (<0.05)	.646	Supported
Awareness	.525	.259	4.118	1	.042 (<0.05)	1.691	Supported
Lack of Resources	-.997	.269	13.765	1	.000 (<0.05)	.369	Supported
Security Concerns	-.102	.257	.158	1	.691 (>0.05)	.903	Not Supported
Value Proposition	.889	.283	9.890	1	.002 (<0.05)	2.433	Supported
Owner or Top management	1.117	.318	12.351	1	.000 (<0.05)	3.055	Supported

The lack of national infrastructure shows that lack of electricity, technological resources, financial infrastructure and laws have negatively impacted the adoption. Similarly, the contextual factors such as lack of government policies and incentives, the condition of the

country are also found to be affecting the adoption negatively. The market forces are found to be encouraging the e-tourism adoption. The awareness of the e-tourism and social media is found to be positively impacting the adoption. The value proposition factors such as perceived benefits are also found to be encouraging the adoption. Similarly, the owner or top management's support is also positively linked to the adoption. However, the lack of resources in organizations is found to be negatively influencing the e-commerce adoption. The impact of supporting IT industry, socio-cultural factors and security concerns were not supported.

7 Conclusions & Implications

The tourism sector received significant attention in the academic literature, however, limited research investigated e-tourism adoption in the developing countries such as the case in Nepal. This study added some insights in this area by identifying some key factors that are often been neglected in developing country's perspective. The results show that e-commerce adoption by SMTEs is affected by environmental factors: lack of national infrastructure, market size, and contextual factors (government's support) and organizational factors: awareness, lack of resources, value proposition and top management or owner's support.

Our study explored the need for significant government intervention in creating a facilitating infrastructure for e-tourism in Nepal. The tourism industry contributes a significant portion to the GDP and therefore, it is imperative that the policymakers address the fundamental factors (i.e. government incentives, resource capabilities and national infrastructure) identified in this research. Also, research on e-commerce adoption by tourism organizations in Nepal is in the infancy stage and this study aids for the progression in such discourse.

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