
Abang Azlan Mohamad
May-Chiun Lo
Peter Songan, and
Alvin Yeo Wee
Universiti Malaysia Sarawak

**ICTS AND TOURISTS' SATISFACTION. A TEST ON A RURAL TOURIST
DESTINATION**

This study examines the impact of ICTs in local communities. This study was conducted in Bario, a rural tourism destination located in the state of Sarawak, Malaysia. The results indicate that ICTs are able to increase the number of visitors. The study also demonstrates the important dimensions that contribute to tourists' satisfaction so that future ICT efforts can be focused on them. The findings revealed that most of the visitors were aware of Bario because of its publicity through the website.

Keywords: ICTs, tourists' satisfaction, rural destination, Malaysia

Abang Azlan Mohamad

Universiti Malaysia Sarawak, Faculty of Economics and Business, 94300 Sarawak, Malaysia
Tel: +60 82 582459; Fax: 60 82 671 794, Email: maazlan@feb.unimas.my

Mr. Abang Azlan Mohamad is a Senior Lecturer with the Faculty of Economics and Business, Universiti Malaysia Sarawak (UNIMAS). He studied Finance and Marketing at The University of Montana, USA and holds a Master of Business Administration from Arkansas State University, USA. He is currently teaching the courses of Marketing and is involved in consultancy and community projects under UNIMAS.

May-Chiun Lo

Universiti Malaysia Sarawak, Faculty of Economics and Business, 94300 Sarawak, Malaysia
Tel: +60 82 582360; Fax: 60 82 671 794, Email: mclo@feb.unimas.my

Dr. Lo May Chiun is a Senior Lecturer and Corporate MBA coordinator with the Faculty of Economics & Business, University of Malaysia Sarawak (UNIMAS). She graduated with First Class Honours in Finance from Universiti Kebangsaan Malaysia and holds a Master of Business Administration from Herriot-Watt University, United Kingdom, while her Ph.D in

Management was awarded by Universiti Sains Malaysia. Dr. Lo's areas of expertise include corporate leadership, strategic management, entrepreneurship, banking, and financial management, and she has published more than 30 journal articles on related topics.

Peter Songan

Universiti Malaysia Sarawak, Chancellery, 94300 Sarawak, Malaysia
Tel: +60 82665102; Fax: 60 82 665111, E-mail: songan@cans.unimas.my

Dr. Peter Songan is currently the Deputy Vice Chancellor in-charge of Research and Innovation, and a professor of human resource development at the Faculty of Cognitive Science and Human Development, Universiti Malaysia Sarawak. He obtained his PhD in Adult, Extension and Continuing Education, with minors in Industrial and Labor Relations, and International Agriculture and Rural Development from Cornell University, Ithaca, U.S.A. Dr Peter Songan has also been actively involved in conducting consultancy projects mostly in the area of social impact studies and community and rural development. One of the major research projects that he is currently involved with is the DAGS Rollout Rural Informatics Project, an offshoot of the *e-Bario* Project.

Alvin Yeo Wee

Universiti Malaysia Sarawak, Faculty of Computer Science and Information Technology,
Universiti Malaysia Sarawak, 94300 Sarawak, Malaysia
Tel: +60 82 583765; Fax: 60 82 583 764, Email: alvin@fit.unimas.my

Dr. Alvin Yeo Wee is the Director of the Centre of Excellence for Rural Informatics and an Associate Professor at the Faculty of Computer Science and Information Technology, Universiti Malaysia Sarawak (UNIMAS). He has expertise in the area of Information and Communications Technology for Rural Development (ICT4RD). In addition to ICT4RD research, Alvin is also active in Human Computer Interaction research, specifically in software internationalisation, multimodal interaction, gazed based systems, and the use of ICTs for the preservation of indigenous languages. Alvin earned his PhD from the Computer Science Department, University of Waikato, New Zealand.

Introduction

The development of information and communication technologies (ICTs) has brought knowledge to millions of people and has created new opportunities and choices for many others. The learning, working, and personal lives of people have changed rapidly since the birth of the global "information society". It is commonly known that the presence of ICTs offers remarkable assistance in reducing poverty and generating employment prospects. Nonetheless, some of the world's population remains untouched by this revolution. Barriers to access, high costs and minimal human resources are preventing these people from reaping the benefits of ICTs. It is found that insufficient attention has been given to the use of ICTs by indigenous people who often live in an environment of isolation, relative deprivation, and dependence.

The problem with rural destinations is that the rural community's level of knowledge and skillfulness on average is found to be much lower than in the city. This hinders efforts to bring development into the region and may severely damage a destination. Rural destinations may also run the risk of destroying their heritage if tourism development is not managed carefully.

Literature Review

In most countries, ecotourism has been actively promoted by governments and industry players without an overall effective strategy, successful protected area management plans, and without consultation or inclusion of local communities. Past studies have found that development projects are often designed and implemented in a political context in which indigenous people have minimal voice in policy and management. As a result, many indigenous people rightly feel that the tourism industry has a poor track record, disregarding their legitimate interests and rights, and profiting from their cultural knowledge. Therefore,

partnerships between the tourism industry, government agencies, and the local population are needed in which local populations are able to articulate their initial concerns, wants and needs in relation to any development (Wearing & Neil, 1999). As such, the effectiveness of ecotourism in the future will ultimately depend on who will benefit, as well as where, when and how it can be appropriately implemented with the assistance of ICTs.

The tourist destination in this study is Bario, a remote rural community, located on the island of Borneo, close to the Malaysia-Indonesia border between Sarawak, Malaysia and Kalimantan, Indonesia. In the event that ICTs are successfully adopted by all existing relevant providers of tourism goods and services in the rural tourism destination, they provide the possibility of generating more income for the local people, allowing the destination to create a reasonable development strategy which prevents the destruction of natural and cultural heritage, offering better quality services and products, and, subsequently, the possibility of presenting these products and services in tourism markets on a higher professional level.

Bario Highlands, located in the state of Sarawak, Malaysia has been selected due to its remoteness. The question guiding this research was how well rural communities were able to respond to the usage of ICTs to benefit the local tourism industry. The purpose of this paper is to investigate the impact of ICTs on the Bario tourism industry and to identify the dimensions that influence tourists' satisfaction.

Despite the importance of the impact ICTs can have on rural communities, little research has been done to examine the subsequent impact of ICTs on rural tourism industries. This study is unique in a sense that a rural community such as Bario is remotely situated from the outside world. This study is even more profound as Bario does not have one of the most important aspects of basic infrastructure, which is electricity. A team of researchers from *Universiti Malaysia Sarawak (UNIMAS)* explored the possibility of bringing the Internet to

Bario by conceiving a study entitled the “eBario Project”. One of the toughest hurdles of this project was the absence of electricity at the targeted destination, as Bario does not have a 24 hour electricity supply. Another aim of this research project was to explore the opportunities by which the deployment of ICTs can bring about social development within remote communities in Sarawak. The catch-phrase of the project was that if one could successfully implement such a project in Bario, one can do so anywhere. Paradoxically, a rural area such as Bario may be seen as more flexible and agile enough to make rapid responses to change. It is believed that successful implementation of ICTs would assist the remote community to be more self sufficient and to be a more sustainable community both socially and economically.

ICT projects in the past have been found to assist rural communities by giving them opportunities to access news, information, advice, and knowledge. This has assisted them in making decisions in their daily activities. It is believed that creating information-rich societies is one of the ways to reduce poverty and sustain development. ICTs are important for geographically isolated rural places as tourism is likely to be the only growth industry (Irvine & Anderson, 2004) and tourism remains central to rural development (Briedenhann & Wickens, 2003). It is commonly known that small rural businesses such as tourism businesses often have to be self-sufficient, flexible and less reliant on outsiders (North & Smallbone, 1996).

Another argument is that with the help of ICTs, tourism players at a local destination are better able to improve on providing quality services to their tourists by capitalizing on drivers of tourists’ satisfaction such as places of interest, outdoor activities, and atmosphere of the rural destination. Past research stressed that these attributes can be developed for a destination to achieve competitive advantage over other substitute tourist destinations (Ibrahim and Gill, 2005, Alegre and Clagera 2007). Furthermore, tourists’ comments, complaints and suggestions are valuable sources of ideas for improvements and innovations

at the tourist destination and can be better elicited with ICTs (Dmitrovic', Cvelbar, Kolar, Brenc'ic', Ograjens'ek and Z'abkar, 2009).

Methodology

This study focuses on tourists who visited Bario between August 2009 and January 2010, as a population of interest. Initially, interviews were carried out with 15 tourists who had visited Bario. Structured questionnaires were subsequently developed and tested where the question items were further categorized as places of interests/culture, resort/homestay atmosphere, outdoor activities, scenery, interest/motive of visits and tourism services provided. A random sampling procedure was employed on a possible sample of approximately 200 tourists who have visited Bario. Data was collected through survey questionnaires from tourists. Respondents were asked to rate their perception using 5-point Likert scales with: 5 = *highly satisfied*, 4 = *satisfied*, 3 = *neutral*, 2 = *dissatisfied*, and 1 = *highly dissatisfied* for all the items. A higher score indicates greater satisfaction. Only 146 foreign and local tourists responded to the survey giving a response rate of about 73 percent. In addition, researchers discovered through secondary data analysis that the introduction of ICTs by the eBario project in 1999 was responsible in luring tourists to Bario. The number of tourists visiting Bario has since increased tremendously from four (4) in 1997 to seven hundred and three (703) in 2007.

Research Findings

Table 1 illustrates the demographic profile of the respondents. Slightly more than half (53.4%) of the respondents are male, with a very high percentage stating that they had never visited Bario prior to this visit (93.2% of total respondents) and the majority of the respondents mentioned that they would like to visit Bario again (84.8%). 32.2% of the respondents hold a Bachelor’s degree, followed by those who have a Master’s degree (27.4%), PhD (6.2%), and the remainder (32.9%) are those with high school or lower education. 86.3% of visitors surveyed are foreigners, and most visitors (46.6%) have an income level of more than US\$25,700.

Table 1: Demographic Characteristic of Respondents

Demographics		Frequency	Percentage
Gender	Male	78	53.4
	Female	68	46.6
Education	High school or lower	48	32.9
	Bachelor	47	32.2
	Master	40	27.4
	Doctorate	9	6.2
	Missing	2	1.4
Visited Bario before	Yes	10	6.8
	No	136	93.2
Intention to visit again	Yes	123	84.2
	No	22	14.4
Income	<\$8,500	32	21.9
	\$8,501 - \$14,300	6	4.1
	\$14,301 - \$20,000	6	4.1
	\$20,001 - \$25,700	8	5.5
	>\$25,700	68	46.6
	Missing	26	17.8
Nationality	Foreign	126	86.3
	Local	20	13.7

Source of Information	Magazine	8	5.5
	Newspaper	3	2.1
	Internet	63	43.3
	Words of Mouth	21	14.4
	Friends	21	14.4
	Others	30	20.6

Importantly, most of the visitors had learned about Bario through the internet (43.3%), suggesting that ICTs were indeed influencing tourism at the destination.

The means among the study variables are presented in Table 2. As shown in Table 2, places of interest were evaluated the highest, followed by atmosphere of the homestay/resort, scenery, and lastly interest/motive and outdoor activities.

Table 2: Descriptive for the Major Constructs

Major Constructs	Mean
Places	4.4
Scenery	4.1
Outdoor	4.0
Atmosphere	4.3
Interest	4.0
Satisfaction	4.3

Table 3 illustrates the intercorrelations among the service quality subscales obtained using Pearson correlation to determine whether the subscales were independent measures of the same concept. Generally, the values indicating intercorrelations among the predictor variables were low to moderate, ranging from .35 to .62 ($p < .01$), thus indicating the independence of the scales used for measuring the predictors. In addition to that, all the predictor variables were noted to be significantly correlated to the criterion variables, ranging from .29 to .63, which were considered as moderate intercorrelation values.

Table 3: Intercorrelations of the major constructs

	places	scenery	Outdoor	atmosphere	interest	satisfaction
Places	1					
Scenery	.37**	1				
Outdoor	.62**	.47**	1			
Atmosphere	.51**	.39**	.37**	1		
Interest	.35**	.38**	.40**	.35**	1	
Satisfaction	.61**	.48**	.55**	.63**	.29**	1

* $p < 0.05$, ** $p < 0.01$

Multiple regression was used to analyze the data. Table 3 exhibits the regression analysis where the model was found to be significant ($p < .01$). The direct effects of the predictors significantly explained 56% of the variability in tourists' satisfaction ($r^2 = .56$). Four dimensions in service quality are found to be significantly predicting overall tourists' satisfaction in Barrio. *Places of interest*, and *atmosphere of homestay/resort* were found to be significantly related to tourists' satisfaction with $\beta = .26$ ($p < .01$), and $\beta = .10$ ($p < .01$) respectively, whereas *scenery* and *outdoor activity* have significant relationship with tourists' satisfaction with $\beta = .15$ ($p < .05$), and $\beta = .38$ ($p < .05$) respectively. The influence of *interest/motive* was not significant.

Table 4: Regression results between service quality dimensions and tourists' satisfaction

Independent Variable	Satisfaction
Model Variables	
Places	.26**
Scenery	.15*
Outdoor	.38*
Atmosphere	.10**
Interest	.18
R ²	.56
Adj R ²	.55
F Value	35.50**

* $p < 0.05$, ** $p < 0.01$

Discussion

This study evidenced the importance of ICTs in generating more visitors and stressed the vital service quality dimensions as perceived by tourists. As stated by Baker and Cameron (2007), with the help of ICTs, the participants in the tourism industry would be able to appreciate their destination's natural environment, the strengths and weaknesses of the tourism destination, as a basis to formulate effective strategies to develop the tourism industry. It is undeniable that the tourism industry relies heavily on networking to build a profitable tourism destination and through learning and exchange between network participants, benefits that are leveraged can turn into profit making business and positive community outcomes (Lynch, Halcro, Johns, & Buick, 2000; Morrison, Lynch, & Johns, 2004).

This research highlights the importance of ICTs, which help in bringing tourists to a destination. However, ICT use also needs to support service delivery. Hence, exploring the phenomenon of quality of service perceptions among visitors of Barrio has broadened the understanding of the satisfaction level of the customers and the influences on it. Ultimately, local community and industry players in particular will benefit from focusing on the areas of service quality that need close scrutiny and improvements and drive tourist satisfaction. Since quality of "Outdoor activities" is the main contributor to tourists' satisfaction but is currently rated low, it is important for Barrio tourism to focus on improving outdoor activities. One of the ways to do that is to promote outdoor activities on the Internet for tourists to be aware of what to expect when they come to visit Barrio. Various outdoor packages can be promoted through the Internet for tourists to choose the type that best suits their capabilities and interests. Outdoor guides also have the opportunity to promote themselves through the Internet as a way of informing potential tourists on their areas of expertise. ICTs also allow local guides to inform themselves, equipping themselves with valuable skills and knowledge

useful when guiding tourists. Since Bario is remotely located, there is limited access to “physical” information; hence, ICTs are critical for guides searching for information.

The findings illustrate that the implementation of this project has successfully assisted a remote community in attracting tourism. Hence, the next step is to take note of the important dimensions of service quality as perceived by tourists to be made known to tourism industry players and to strike a balance between the inevitably diverse interests.

Conclusion

It is believed that creating information-rich societies is one way to reduce poverty and sustain development. The increase in tourist arrivals will result in better employment opportunities, which result in higher revenue for communities in ecotourism destinations. The bigger objective is to improve the livelihood and raise the quality of lives of the local community. More youths and their families are willing to make a living in rural destinations by operating homestay lodges and other tourism-related activities. Tourism in rural areas can help reduce rural-urban migration.

This research underlines the importance of ICTs on rural tourism development which could serve as a valuable approach to achieve a better repositioning of rural destinations. This study perhaps is the first that has systematically attempted to integrate ICTs and highlighted the important dimensions of service quality needed in rural tourism development. It is interesting to note how local communities first are attracted to the usage of ICTs and later utilise it to generate income for their tourism business. This study can serve as a “best practice” example as it has proven the ability of the eBario project by bringing the Internet to rural destinations to better economic livelihoods in a remote rural destination such as Bario. Without a doubt, research on rural tourism development is still limited in its ability to provide unequivocal guidelines and to advice on the best way to sustain and preserve rural

destinations. This study provides important insights regarding the role of ICTs in rural development processes.

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