Full Length Research Paper

Type of tour operations versus type of information systems: South African survey

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Tourism and information technology is dynamic. The prosperity of tour operators are directly influenced by their ability to make informed decisions. This paper investigates if South African tour operators use marketing/management information systems and to determine their susceptibility towards information system innovation. The results could assist tourism role players and tour operators to reconsider their information systems, as well as to identify opportunities for information system innovation. A questionnaire was distributed to 1,000 tour operators and this paper is based on the responses of tour operators who do have an information system. The results obtained indicate that 59.6% of those who participated do have some form of information system whilst 39.7% were uncertain what type of information system they have. A majority of tour operators indicated that they use personal computers with word processing and electronic spreadsheets. Tour operators indicated that they would support an innovated marketing information system that operates from a central location on a national basis. This pioneer study established that tour operators have a desperate need for marketing information system innovation. There is a significant opportunity for further research and information system innovation in the South African tour operating environment.

Key words: Marketing information, marketing information systems, innovation, tour operators, South Africa.

INTRODUCTION

The tourism industry is dynamic and highly competitive on a global scale, and added to this is the complex nature of the factors and influences of the marketing environment in the domestic tourism market, the tourism generating markets (domestic and/or international), and the tourism destination markets (domestic and/or international) within which tour operators function. Tourism and tour operating are global phenomena and it can only be speculated what will happen in future to tour operators in South Africa, should they not have functional and effective marketing (MkIS) and/or management

information systems (MIS) providing them with critically needed information. Usable information systems will contribute towards the prosperity of tourism in South Africa, including tour operation. Tourism and information technology is dynamic in nature and tour operations should endeavour to keep up with technology developments as this could have an adverse effect on their future prosperity.

Although, the focus of some research is on marketing and/or management information systems, little is known about the types of information systems used by South African tour operators. Various research studies on diverse topics dispersed over various industries have been conducted and reported to date on marketing information systems and information system technology.

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Some research studies focused on the utilization of marketing information systems (Schewe et al., 1977; Schewe et al., 1978; Higby et al., 1991; Li et al., 2001) and it was found that such systems are underutilized. Research also focused on determining the range of factors affecting the use of information systems (Jobber et al., 1986) and further research focused on establishing managers' satisfaction and/or dissatisfaction with their MkISs (Li, 1995; Jaing et al., 1997). Furthermore, numerous research studies focused on information system innovation and the utilization of information technology for management purposes (Li et al., 2001; Leonidou et al., 2004; Buhalis et al., 2004; Hess et al., 2004; Nasir, 2005; Singh et al., 2005; Kothari et al., 2008; Oprea, 2008). The effectiveness of MkISs were researched by Gounaris et al. (2007). These research studies undertaken are comprehensive, informative and applicable to a certain extent in tour operation in South Africa. However, these studies do not address the different types of information systems used by different types of tour operators in South Africa.

Tour operators need marketing and management information for decision-making as this will ultimately determine their survival, and their ability to achieve and maintain a competitive advantage in today's global information-based tourism environment. South Africa has been experiencing an escalating increase in tourist arrival figures over the last number of years and this, together with information technology development and increased global competition, places high marketing demands on tour operators. Information systems enabling tour operators to make informed decisions will indisputably enhance tour operators' ability to manage their enterprises more effectively.

Against this background, the purpose of this research is to answer the following research question: 'Is generic information system innovation needed by tour operators in South Africa?' More specifically, this paper is based on the following two objectives:

(1) To investigate if there are differences between the different types of tour operations and the types of information systems used by these tour operators.
(2) To determine how tour operators describe their information systems in use.
(3) To determine tour operators' susceptibility towards marketing information system innovation.

This paper reviews the literature relevant to tourism in South Africa, specifically the different types of tour operations and their marketing and/or management information systems used. The research methodology is then presented and this includes a description of the data collection and analysis techniques used. The findings are presented, discussed, and interpreted and, finally a discussion of the theoretical and managerial implications concludes this research, including suggestions for future research.

Literature review

Tourism as an industry achieved since the beginning of the twenty-first century "a higher profile in the public consciousness....than ever before" (Lew et al., 2004). The world tourism organisation (WTO) forecasted in its Tourism 2020 Vision: Volume 1 Africa Report (WTO, 2001) that Africa will receive 77.3 million international tourists by 2020. This represents an annual growth rate of 5.5% over the period 1995 to 2020 – this is above the global rate of 4.1%. The WTO also predicts that long-haul travel to Africa will grow at a slower rate than intraregional travel, with the result that by 2020 there will be almost twice as many intraregional arrivals recorded than for long-haul source markets. The WTO described African countries as having extensive, dynamic tourism product development programmes, and that African countries view tourism as a key component of their development policies with structured and integrated long-term strategies.

The world travel and tourism council (WTTC) stated that the economic impact of tourism comprises R31.1 billion (equivalent to 3.0%) of the gross domestic product (GDP) of South Africa (WTTC, 2002). Tourism's actual contribution to the GDP was up till now only an estimate because the South African reserve bank (SARB) viewed tourism as interwoven into the various components of the tertiary sector (representing services) of the gross value added (GVA) indicator. The GVA figures indicate an increasing trend (SARB, 2003) and this is in line with the increasing number of tourism arrival figures (58.6% growth was accomplished for the period 1998 to 2007) as reported by SA Tourism. The newly established tourism satellite account was launched at INDABA, 2009 and it would in future be possible to determine tourism's actual contribution to the GDP.

Tourism as an industry offers promising entrepreneurial opportunities and various financial and training pro-grammes are available to assist new entrants and upcoming tourism enterprises. This is especially relevant since the recently introduced Tourism Score Card, tracks black economic empowerment (BEE). Existing and prospective entrepreneurs should be cognizant of the fact that tourism is a global phenomenon and a distinctive characteristic of this industry is its fierce competition. Added to this is the effect of technology development on a tourism enterprise and its consumers. The challenge is interconnectedness (networks) and to keep up with

technology used by other tourism enterprises and consumers in the target market. Technology should also be utilized to the benefit of an entrepreneur – in the form of an information system.

Existing models of marketing and management information systems (Martins et al., 1996; Kotler, 1997; Tustin et al., 2005; Kotler et al., 1999, 2003, 2006) were originally developed for the manufacturing industry and these information systems were adopted by enterprises in the tourism industry because suitable systems are not available. WÖber (1994) researched the tourism marketing information system and Cant et al. (2006) adapted and refined the MkIS model to reflect the implementation of information technology into the marketing information system. Tourism, due to its nature, cannot be marketed in the same way as manufactured products and the marketing mix is used as an example to explicate the difference between the marketing of tourism and that of manufactured products. The traditional marketing mix consists of 4Ps (product, place, price, and promotions) and the marketing mix was extended to cater for tourism. The tourism marketing mix consists of up to 10Ps (the four traditional Ps plus physical evidence, people, processes, packaging, programming, and partnerships) (Morrison, 2002; Bowie et al., 2004; George, 2008). This alone is substantiating evidence of why information systems need to be innovated before such systems can be regarded as a marketing tool for tour operators.

Schewe et al. (1977) found that the marketing information system (MkIS), as far back as the mid-1970s, is under-utilized and that its use should be encouraged. Schewe et al. (1978) confirmed that the impact of marketing information systems still has not been substantial and that developed systems are not highly utilized. Higby et al. (1991) also researched the utilization of marketing information systems whilst Li et al. (2001) reported a decrease in the existence of marketing information systems. Firstly, information systems were under-utilized and then, secondly, a decline in its existence is reported – could this also be applicable to tour operations in South Africa?

Jobber et al. (1986) discovered that there is a wider range of factors affecting the use of information systems than previously thought to be and Li (1995) confirmed that managers are not satisfied with their MkISSs. Jiang et al. (1997) established that two sources of dissatisfaction stem from: firstly, the attitude of marketing managers towards computers; and secondly, the mismatch of key information system issues between marketing managers and those controlling the system. Gounaris et al. (2007) conducted a study to design and empirically validate an instrument for measuring the effectiveness of a MkIS. However, it should first be established if South African

tour operators do have information systems before such a tool could be used to determine their information systems' effectiveness.

The changing business and tourism environment in South Africa collectively epitomizes opportunities for tour operators, in both the domestic and international arena. Change places new demands on tour operators who unremittingly need to innovate their offerings (products) in an endeavour to satisfy continuous demand for something new (new experiences). Tourism in South Africa is auspicious; and science, research and tourism offers developmental petition for more attention and the allotment of applicable budgets, together with market and marketing research. Marketing and management information would make a momentous contribution towards tour operators' endeavours to manage their enterprises more effectively.

Tour operators are compelled to face the following omnipresent challenges: globalisation, intense competetion, more demanding consumers, national and international regulatory changes, and lastly the continual advancement of technology. Managing and operating a tour operation is more intricate than ever before and a universal thread about these challenges is "the need for organizations to be flexible, adaptive and to continually reinvent themselves" because "if they do not, they will not survive" (Skyrme, 2000). This is supported by research conducted by Gounaris et al. (2007) who established that a tourism enterprise's functional effectiveness and adaptability to market conditions improve with the use of an information system. This finding is appropriate to tourism and tour operators in South Africa because, tour operators will be knowledgeable about the effects of occurrences in the marketing environment within which they operate, such as the influence of 'Western' cultural values impacting on 'African' values (Soontiens et al., 2008). This is specifically applicable seeing that the WTO predicts a 5.5% annual growth rate for Africa tourism.

Marchand et al. (2000b) proclaimed the following: "what differentiate today's high-performing companies are the capabilities and behaviours associated with effective information use." This alone is adequate evidence of why tour operators should acknowledge the necessity of having marketing and management information for decision-making. Laudon et al. (2000, 2006) repeatedly state that information denotes an "important asset" which is expected to "rise above 50% of total private business investment". Research conducted by Li et al. (2001) found that marketing managers at the turn of the century are more knowledgeable about computer technologies and they actively take part in creating computer applications to meet their own information needs. Could this also be applicable to tour operators in South Africa, ten years later? Tour operators should embrace the idea

that "information is a resource that can be managed" (Hinton, 2006). Marketing and management information will in future be indispensable for the survival and success of tour operations within the prevailing and subsequent tourism business environment.

Tour operators may be of the opinion that their core business is tour operation and not information technology (IT). However, Marchand et al. (2000a) unequivocally declared that "every business is an information business" - and this includes tour operators. This constitutes a fundamental starting point and tour operators should integrate their business strategy with an information strategy because it is "intertwined with that of the other organizational functions" (Hinton, 2006) to ensure that the right information is available to those who need it. An increasingly complicated confluence is taking place – between an enterprise's (tour operation) objectives, information technology and information systems (Curtis et al., 2006). Gratzer et al. (2004) conducted research on electronic business in tourism and stated, "...companies need to adapt their strategies. The importance of information and communications technology (ICT), especially of the Internet in the travel and tourism industry, has increased tremendously over the past few years" because tour operators stand to gain "enormous synergy effects..." if they modify their ICT strategies. This is where a marketing information system (MkIS) and a management information system (MIS) would be an enormous benefit to tour operators.

A tour operation and its daily functioning is an amalgamation of different components (departments) and tour operations as business enterprises should increasingly implement information technology to assist with marketing decision-making. Wright et al. (1998) concluded in a study conducted before the turn of the century that research, intelligence, computerized modelling and analysis systems as the only components are inadequate because this "takes too little account of the role of organization design methods and environmental contingencies in marketing information processing." The conclusion made by Fesenmaier et al. (1999) after conducting a research study is that "an important problem with the current concept of the MIS [marketing information system] is that it lacks the means of knowledge building". Their recommendation is that the analytical strengths of an MkIS should be integrated with the organizational knowledge creation process.

Various studies have been conducted on innovating information systems and incorporating information technology so that sophisticated marketing information systems could be used by decision-makers (including tour operators) as a management tool. Fesenmaier et al. (2001) indicated that the "provision of training and updated information and communication technology (ICT)

skills is an essential and critical factor", and that most of the tourism information systems (TIS) and destination marketing/information systems (DMS) are "at a prototype stage" and that these systems need further development/refinement efforts – something desperately needed in South Africa's tourism industry. Buhalis et al. (2003) conducted research on e-tourism developments in Greece and suggest that "destinations around the world will need to develop a long-term e-tourism strategy to coordinate their public and private sectors", and this is very applicable to tourism in South Africa. The research results of Daniel et al. (2003) advocate the benefits of developing a high-level process map of marketing as the basis of marketing information systems to enable the integration of marketing and information technology. They suggest that the four components of an MkIS should be reconsidered before decision-makers (including operators) could use an MkIS as a management tool for decision-making.

Leonidou et al. (2004) researched the possibility of integrating extant knowledge with a marketing information system. Hess et al. (2004) propose that a geographic information system's (GIS) ability to integrate information from disparate sources and spanning multiple decision domains when a single decision requires this capacity is a unique advantage over other MkIS technologies. Nasir (2005) published an article on the development, change, and transformation of management information systems and this was followed by a study of Singh et al. (2005) who predict that the existing paradigm that equates superior guest service experience in lodging operations will be redefined by 2027, due to emerging technology (innovation). The important value of a destination marketing information system, according to the findings of research conducted by Kothari et al. (2008), is encapsulated in the richness and timeliness of information. Oprea (2008) is taking innovation one step further and researched the modelling of a virtual enterprise as a multi-agent system, where several enterprises must cooperate to have a profitable business. This study is based on obtaining suppliers who conform to predetermined specifications, and this is very applicable to the tour operating environment in South Africa. Tourism is dynamic and the success of a tour operation will be influenced by the marketing orientation of the enterprise; and a marketing information system ought to provide a tour operator with relevant information if product offering research is improved, similar to a study conducted by Van Wyk et al. (2009).

Molina et al. (2010) conducted research and discovered that there is a relationship between information sources and destination image, implying that a well designed marketing information system will guide tour operators to ensure they induce the correct image in

all their marketing communication material. A sophisticated marketing information system would also provide tour operators with detailed information about their existing and prospective consumers, regarding their reasons for preferring destinations, the way they form their preferences, and the type of experiences that appeal to them, as was researched by Oguz et al. (2010) and Kara et al. (2010).

Next is the delineation of the research methodology followed to research the types of information systems used by the different types of tour operations in South Africa, as well as how tour operators describe their information systems.

METHODOLOGY

The aim of this paper is to discover if different types of tour operators use different types of information systems, and to determine their susceptibility towards an innovated marketing information system. A descriptive research design was followed and an analytical survey method was utilized to collect primary data by means of questionnaires, analyzing it statistically. This survey method was considered appropriate as tour operators could easily be accessed, as also reported by Alam et al. (2010a).

This focus of this study is on tour operators in South Africa (research population or universe) and undertaking a census was not possible seeing that it is not mandatory in South Africa for any business involved in tour operation to be registered as such and an up-to-date list of all tour operators in South Africa, with contact details, is not available. A sample frame was compiled from numerous published and electronic sources (such as the Southern African Tour Operators Association and the Indaba Trade Catalogue) containing the names and contact details of 1,539 tour operators with known e-mail addresses. The sample frame included all possible tour operators geographically dispersed on a national basis in South Africa only. A web-based survey with a limitation of 1,000 successfully delivered e-mail invitations as sample size (also the realized sample size) was used for the purpose of this study to be able to investigate new and unique marketing information issues to tour operators in South Africa, as recommended by Alam et al. (2010b).

Sample units (respondents represent the opinion of an enterprise) were selected from the sample frame on a non-probability convenience sample basis. If a tour operation was included as a sample unit but could not be reached due to incorrect or a terminated e-mail address, such sample units were replaced until 1,000 invitations were successfully delivered. All tour operations listed were included as possible sample units. The only parameter specified was that the tour operation must have a current information system for them to be able to respond to the questions. Sample units who did not respond to the first invitation received a reminder and a second and last reminder was dispatched to sample units who has not yet responded.

The questionnaire was viewed by 360 tour operators; it was started by 245 and the final realized sample yielded a 42.45% completion rate of those who started the survey (n varies for the questions due to non-responses). There were 96 validation errors and 141 dropped out after starting the questionnaire. Three profile descriptors (besides must have an information system) were used for the purpose of this study and these descriptors are: type of tour operation, years in existence and tour operation size.

The web-based structured self-administered electronic questionnaire designed for the purpose of this study was first tested and then subjected to a pilot study by forwarding it to a number of selected people to test-run the questionnaire. Their responses were recorded into a separate databank used for testing purposes. No programming problems or difficulties with accessing or responding to the questionnaire were reported or detected. The pilot study was conducted to ensure that the data obtained from the final questionnaire is proper, specific and reliable. The on-line research instrument was accompanied by electronic communications and facilitated by QuestionPro.Com. Illum et al. (2009) published a research paper and referred to various pitfalls researchers should keep in mind when using web-based surveys. This study of tour operators was based on an established sample frame and non-serious or repeat responses could not take place as the sample units and submissions of the questionnaires were monitored and managed on QuestionPro.Com.

Every sample unit received a personal e-mail explaining the purpose of this study and inviting them to participate (data collection) by clicking on the hyperlink included in the e-mail which immediately activated the self-administered questionnaire. A 'Thank You' e-mail was automatically dispatched once a respondent clicked on the 'submit' button. Six incentives (sponsored prizes) were made available in an endeavour to increase the response rate and the researchers bestow acknowledgement for the six sponsored prizes participants could win in a raffle draw as contributing to the realized completion rate.

The construction of the questionnaire included a variety of question types: closed- as well as open-ended questions and Likert scales with statements respondents had to respond to (ranging from strongly agree to strongly disagree and ranging from extremely important to extremely unimportant). Advances in technology enable research via the Internet and the web-based research instrument uses automatically captured responses to close-ended questions into a database whilst responses to open-ended questions had to be grouped (coded) before the data could be processed. Further inferential statistics (cross tabulations, Chi-square-based measures of association, MANOVA and ANOVA variance analysis and the Kruskal-Wallis test, Tukey's Studentized Range test and the practical statistically significance test) were conducted on the data. Responses to open-ended questions were grouped for data processing purposes.

It cannot be generalized that the research findings apply to all tour operators in South Africa because it is unknown exactly how many tour operators there are in South Africa and a representative sample size could statistically not be determined. It should also be kept in mind that responses obtained from sample units are viewed as representing the opinion of a business, tour operations in this case, as well as that the number of responses (n) varies per question because there was only one validation question (informed consent); response to all other questions were not compulsory and respondents could skip questions (omitted responses) and/or terminate their participation at any time. Where 'n' is indicated in this paper it refers to the number of responses per question and not to the number of respondents, in other words not a 100% response rate on all questions.

FINDINGS

The following is a presentation of the main findings obtained after the data was analyzed.

Participant profile

There are various ways of compiling profile of a research population. The parameter (must have an information system) and three other profile descriptors were used for the purpose of this study. These descriptors are: (1) type of market from which most business is generated, (2) the size of the tour operation in terms of the number of staff members employed, and (3) the number of years a tour operation has been in existence. The participant profile of tour operators in South Africa is indicated in Table 1 and a discussion of the profile descriptors follows.

a. Information system: 59.6% (n = 131) of the tour operations indicated that they do have an information system in use. The qualifying parameter for participating in this survey was that a response unit (tour operation) must have a current information system in use. It is alarming that a large percentage of the tour operators in South Africa do not have an information system whilst being involved in the international incoming tourism market. This denotes significant opportunities for information system development and desperately needed research.

b. Size of tour operation: The results obtained revealed that the largest concentration of tour operations in South Africa are small enterprises with up to five staff members (61.4%, n = 135). The dispersion of the rest of the tour operations are: medium sized enterprises with 6 to 10 staff members (20.9%) and large tour operations with eleven and more staff members (17.3%).

c. Number of years in existence: Most of the tour operations in South Africa have equally been in existence for up to five years and between five and ten years (31.0%, n = 68 in both cases). Following are tour operations that have been in existence for 15 and more years (19.2%) and lastly tour operations that have been in existence for between 11 and 15 years (18.7%).

d. Type of tour operation: 69.9% (n = 153) of the tour operations operate in the international incoming tourism market. Tour operators were categorized into four different groups for the purpose of this study and the majority indicated that they view themselves as incoming international tour operators. Figure 1 illustrates the different types of tour operations in South Africa.

Further statistical tests did not reveal statistically signify-cant differences between the type of tour operations and the likelihood of having or not having an information system (Chi-square = 2.7058; p-value = 0.4392) and this is confirmed by the Pearson's exact test p = 0.4386.

Type of information system

Tour operators had to select one of four statements best

Table 1. Participant profile.

Descriptor	n	%
Information system		
Yes	131	59.55
No	89	40.45
Type of tour operation		
Domestic	21	9.59
Incoming	153	69.86
Outgoing	34	15.53
Other	11	5.02
Tour operation size		
Small (up to 5 staff)	135	61.36
Medium (6 - 10 staff)	46	20.91
Large (11 plus staff)	39	17.73
Years in existence		
Up to 5 years	68	31.05
6 - 10 years	68	31.05
11 - 15 years	41	18.72
15 years and more	42	19.18

describing the type of information system currently in use in their tour operation. The results obtained revealed that tour operators describe their information systems as follows: a MIS (management information system) – 27.4%; a MkIS (marketing information system) – 0.0%; a combination marketing and management information system – 34.9%; and the largest portion of the responses received revealed that tour operators with information systems are uncertain about what it is or what it does – 39.7%. It is alarming that such a large percentage of tour operators in South Africa do not know what type of information system they are using or what it is supposed to do, whilst being involved in the international incoming tourism market - this denotes further significant opportunities for information system development and desperately needed research.

The data set was subjected to further statistical testing to determine if there are any statistically significant differences between the different types of tour operations and that of information systems used by tour operators. Table 2 indicates the statistical tests conducted and it is evident that there are no statistically significant differences (degrees of freedom = 6; Chi-square value = 5.7211; p–value = 0.4551) and this is confirmed by Cramer's V = 0.2148.

Information system description

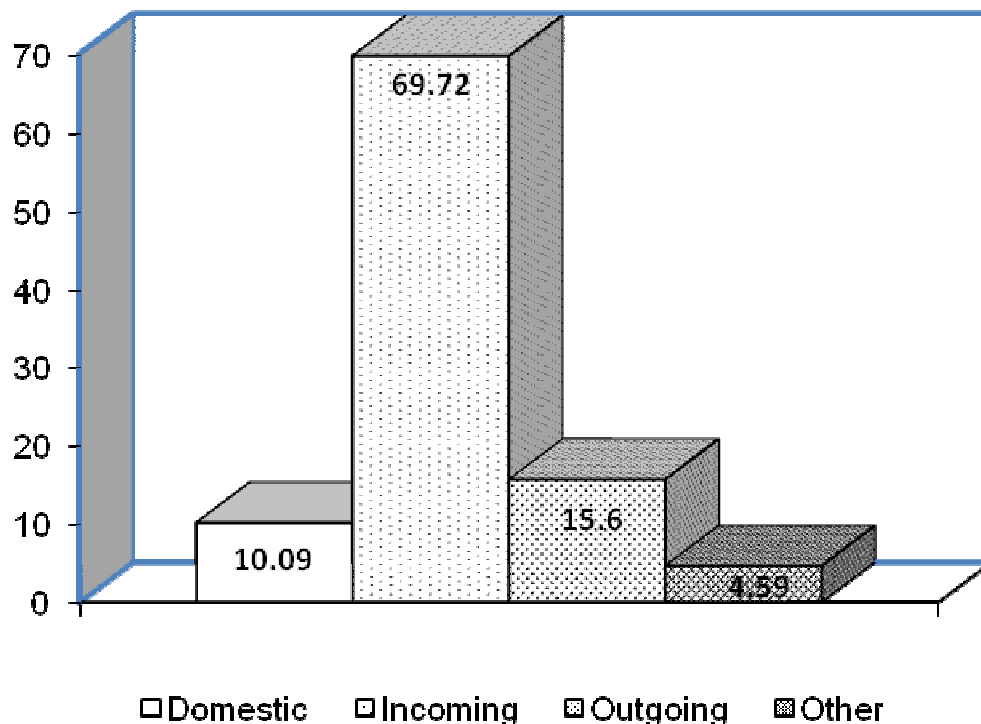Tour operators had to select one of seven statements

Figure 1. Type of tour operations in South Africa (% distribution).

best describing their current information system. The results obtained regarding the statement best describing the information systems used by tour operators revealed that 50.7% of the tour operators make use of a personal computer with a general data analysis programme. This is in concurrence with the type of software tour operators mostly make use of (word processing) and this could also be the explanation for why tour operators do not know what type of information system they are using. Following are 12.0% who indicated that they use a programmed and fixed marketing/management information system. Total number of responses is fewer than original number of respondents due to the fact that not all respondents indicated their type of information system.

The descriptions that follow then are: an internal information system linked with other various departmental systems (intra-organizational) – 9.3%; an information system linked with various departments, other businesses, and organisations – 9.3%; a database providing reports on request – 8.0%; and 5.3% equally for information system linked with other businesses (inter-organizational) and a database with programmed analysis and reports.

The data set was subjected to further statistical testing to determine if there are statistically significant differences between the type of tour operation and the

descriptions of the information systems used. A comparison was made and the different types of tour operations do not differ statistically and significantly (degrees of freedom = 18; Chi-square value = 12.8035; p-value = 0.80311) and this is confirmed by Cramer's V = 0.2402.

DISCUSSION

Most of the tour operators (68.4%) in South Africa indicated that they are satisfied with their current information systems, although their information systems do not provide them with the information they need for marketing decision-making.

This paper revealed that different types of information systems are in use by different types of tour operators and there are no statistically significant differences regarding the type of information systems or the description of information systems in use. However, it is recommended that further research and exploration be undertaken to establish if there are possible and practical statistically significant differences; if the size of tour operations and/or the number of years tour operations have been in existence are used as determinants of the type of information systems used by tour operators in

Table 2. Cross comparison: Type of tour operation versus type of information system.

Statistics	IS type	Type of tour operation				Total
		Domestic	Incoming	Outgoing	Other	
Frequency	MIS	1	9	5	2	17
Percent		1.61	14.52	8.06	3.23	27.42
Row (%)		20	20.93	50.00	50.00	
Column (%)		5.88	52.94	29.41	11.76	
Frequency	MkIS					
Percent						
Row (%)						
Column (%)						
Frequency	Combined	1	16	3	1	21
Percent		1.61	25.81	4.84	1.61	34.87
Row (%)		20.00	37.21	30.00	25.00	
Column (%)		4.76	76.19	14.29	4.76	
Frequency	Not sure	3	18	2	1	24
Percent		4.84	29.03	3.23	1.61	39.71
Row (%)		60.00	41.86	20.00	25.00	
Column (%)		12.50	75.00	8.33	4.17	
Total (n)		5	43	10	4	62
Total (%)		8.06	69.4	16.1	6.5	100.00

Statistics	DF*	Value	Probability
Chi-square	6	5.7211	0.4551
Likelihood ratio chi-square	6	5.4684	0.4853
Mantel-Haenszel chi-square	1	3.9740	0.0462
Phi coefficient		0.3038	
Contingency coefficient		0.2907	
Cramer's V		0.2148	

South Africa.

Possible reasons for this disclosure are firstly, tour operators do not have the necessary expertise (knowledge and/or know-how) of how to obtain information from their current information systems. Secondly, tour operators do not have the necessary and correct software programs that will facilitate obtaining information; and lastly, tour operators are not satisfied with the information they presently obtain from their current information systems. These are all possible areas for follow-up research, mainly to find reasons for this situation and this could result in information system innovation.

Word processing programs (a spreadsheet on a personal computer) as type of software used received the highest number of indications and this type of software used could be a reason why tour operators do not have access to management information. This reveals a substantial opportunity for information system development for tour operators who need to establish their information needs before considering software programs. Tour operators should familiarize themselves with the types of software programs available, as well as the abilities and capabilities of software programs before acquiring such programs. However, this calls for large capital investment and technical expertise. The recommendation made is that an investigation be embarked upon to research an innovated information system operating from a central location on a national basis.

Conclusion

The purposes of this paper were twofold: to establish if different types of tour operators use different types of information systems and to determine how tour operators describe their types of information systems. The importance of realizing the purpose lies encapsulated in identifying opportunities for information system innovation and development for not only the benefit of tour operators but tourism as an industry in South and southern Africa. This study revealed no statistically significant differences between the different types of tour operators and the different types of information systems utilized. The literature included in this paper emphasizes the importance of information and this can transpire only when tour operators have an information system providing them with information.

Based on the revelations of this study, the conclusion made is that South African tour operators' current information systems need revision because tour operators do not necessarily have access to marketing and management information. The managerial implication is that tour operators would be in a better position to manage their enterprises should they be able to make informed decisions. An innovated information system operating from a central location on a national basis would be an ideal information system seeing that different types of tour operators do not make use of different types of information systems.

The main limitations of this study are firstly: this is the first time such a study was conducted in South Africa and this resulted in limited information being available. Secondly, compiling the sample frame that yielded the realized sample size posed various challenges and tour operators' whose e-mail addresses were unobtainable were not included as prospective sample units, as well as those whose e-mail addresses were incorrect. Lastly, it is impossible to cover all aspects of information systems in one survey and this study forms the platform from which other various studies can develop and build on the foundation that was laid down.

This study yielded various additional research possibilities and the hope is expressed that these opportunities will initiate further research, especially the possibility of establishing an information system that operates from a central location on a national basis in South Africa. Further research could also include in-depth interviews in different types of settings to obtain insight into and a deeper understanding of the information needs of tour operators, as was used by Wamwara-Mbugua (2008) in a tourism impact study conducted in Kenya. An expansion of this nature would be to encompass the Southern Africa developing community (SADC) countries, for potential collaborative information system develop-ment purposes. In conclusion, researching the types of information systems used by the types of tour operators revealed that there is a desperate need for information system innovation.

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