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EXPLORING THE DIGITAL DIVIDE ISSUES AFFECTING HOTEL FRONTLINERS

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Abstract

In tourism and hospitality industry, many cases demonstrate that future direction and competitive advantage of the organization does not really depend on organization size, but on the innovativeness of its ICT, supported by highly competent human resource i.e. those willing to adopt and take leverage on the needed technology. In the case of hotels, ICT competency and attitude of frontliners is crucial as they have to deal directly with customers. Guided by the Theory of Planned Behavior, this study focuses on the gap of ICT access, attitude, utilization and literacy of ICT particularly among frontliners of a service industry - specifically, in different hotel grades in Penang, Malaysia. The findings indicate significant differences between workers of different hotel grade in terms of ICT access, utilization, attitude and literacy. The report concludes by providing several implications of the findings and suggestion for future research.

Keywords: tourism industry, hotel frontliners, ICT (Information & Communication Technology), digital divide, Penang

Topic groups: Organizational information and communication systems; Human resource management and career development; Industry, area or region specific studies

JEL Classification: L83, M31, M10

INTRODUCTION

A recent study by Sirirak, Islam and Khang (2011) has shown empirical evidence on the positive relationship between ICT adoption and hotel performance. Within 3 star hotels, this relationship is found to have influenced operational productivity. In other words, ICT adoption is very important in the operation of this hotel category. Given this importance, the findings of this study, as will be explained further throughout the paper, give important information about how ICT is being adopted in 3 star hotels. The study looks at the 3 star frontliners' access, utilization, attitude and literacy. The study is within the context of an island tourism destination in Malaysia.

According to Kong & Baum (2006), employees working in front office undertake an important task in building up a hotel's image and reputation. The important tasks of the front office are such as processing the guests' reservations and rooms' assignments, handling guests and house mail and providing guests' information. They are also responsible for controlling costs, overseeing payroll and supplies, controlling reservations and coordinating information on rooms' availability.

In order to perform their tasks effectively, ICT has been seen as an important element that will lead to an improvement in operating efficiencies among the frontliners of hotels in Malaysia and reach their customer service levels. The ICT based products and processes help the hotels to enhance the operating efficiency, improve the service experience as well as provide a means to access markets on global basis (Hoontrakul & Sahadev, 2007). As stressed by Hotel News Resource, (2005) and Frumkin, (2002), services that are more technologically oriented related to front office, housekeeping, engineering, concierge and food and beverage operations in hotels are more efficient and effective.

Chathoth (2006) states that full service hotel firms would benefit from the use of new technology as it can help decrease possibilities of service errors and the related recovery costs. In turn, this gives managers a peace of mind because recovery costs has been the single most important concern of managers who deal with the service intangibilities on a day-to-day basis. Firms that adopt advanced information technology will be better able to meet customer expectations in terms of ensuring customer satisfaction through reliability, responsiveness, assurance, and empathy of service provision.

According to Sahadev & Islam (2005), the main advantages that the Internet provides as a marketing medium for travel and tourism sector are:

- i. the global market reach
- ii. the customers who access the websites are much more interested rather than in a conventional marketing communication where the message is targeted indiscriminately
- iii. the websites are not affected by capacity constraints
- iv. the possibility of two-way communication offered by the Internet.

Compared to firms with low levels of ICT adoption, workers in hotels which have high levels of ICT adoption are expected to be more interested and more capable of utilizing the possibilities presented by the Internet in communicating and transacting with the potential customers.

In Malaysia, the rapid development and commercialization of ICT has prompted hotels and other enterprises in this sector increasingly to adopt these technologies. The need for quality information about the firm's activities, the market in which it interrelates makes the possession of that information a key factor in improving competitiveness in the hotel sector. For example, the functional area of front office, with its role of reception and marketing as well as acting as the centre for liaison and communication within the operating business, plays the role of the "brain" in the hotel. Espino-Rodriguez and Gil-Padilla (2005), believe that the choice of the proper information system/ information technology resources can help firms to act faster, thus giving them greater flexibility.

PROBLEM STATEMENT

Even if effective adoption of several ICT technologies requires a substantial investment of resources (Hoontrakul & Sahadev, 2007), as Dabas & Manaktola (2007) has warned, failure to develop electronic commerce capabilities will lead to strategic vulnerability and a competitive disadvantage. Frontliners that do not have the ICT products and know how to can help them perform their tasks efficiently will not be able to be productive workers to their organization. This may cause long term negative impact on organizational performance and customer service satisfaction. It turn, frontliners attitude toward ICT that used to perform their tasks may be negatively affected. The systems may be seen as badly designed, overly technical and inflexible and complicates rather than simplifies hospitality operations and management. The problem is graver if workers have poor IT understanding and skills to begin with.

Sahadev & Islam (2005) stress that possible influencers of ICT adoption in the travel and tourism sector can be classified into three major groups: i) the location related factors; ii) the firm-related factors; and iii) the technological resources of the firm. Location related factors include access to the necessary infrastructure for the setting up of technology particularly internet connection, the speed of the connection etc. Thus, the closer a premise is to urban areas, the easier it would be to adopt ICT. Firm related factors refer to size, type of business, target market and years of operation. For example, big hotels have more propensity to adopt advance ICT compared to small ones; high rating hotels would be more driven to use ICT compared to lower rated hotels; hotels that target high end consumers are more likely to dwell on advance systems compared to those that target mass or budget travelers (Wei *et al.*, 2001); and newer hotels are more likely to be equipped with the latest technology compared to older ones. This study explores whether Wei et al (2001) conclusion on the influence hotel size also applies in the context of Malaysia. In this study, size is denoted by star rating. While Wei *et al.* (2001) study focuses mainly on the use of internet e-mails, this study looks at issues such as ICT accessibility, utilization, attitudes, and literacy among hotel frontliners.

The attitude and aptitude of workers

The attitude and aptitude of workers in ICT adoption will also determine a hotel's successful adoption of ICT infrastructures. Workers primary responsibility is to ensure customer satisfaction can do so well, via the aid of a good, efficient and reliable technology. In other

words, the more capable they are at using the technology, the better job they will perform in satisfying consumer. According to Davis *et al.* (1989), capability is preceded by a positive attitude towards the technology. He proposed that the shorter time it takes for a worker to master a technology, the more they will see how the technology can help them be more efficient and the better their attitude towards it.

The compatibility of software of technologies should be match to the hospitality industry so that the frontliners of hotel can make a realistic estimate of what their specific information and perform their tasks efficiently. According to Adeyoyin (2005), at the very least, workers should have core skills i.e. understanding of basic knowledge of the computer - how it functions, inputting and retrieval of information from it, the keyboard, how to navigate the screen. Nevertheless, not all workers will embrace a new technology (Ross *et al.*, 1996). The reasons identified include lack of readiness, aptitude towards technology and support from the management.

ICT accessibility, utilization, attitudes and literacy

According to the U.K. government (Pilling & Boeltzig, 2007), the biggest barriers to accessing ICT are interest and motivation, followed by lack of perceived need. Interest and motivation are closely linked with the purpose of use. As found by Pilling & Boeltzig (2007), the primary reason people are attracted to the computer was being able to communicate with family members and relatives.

According to Madigan *et al.* (2007), utilization is also a factor to consider as there are different uses of internet to people of different background. One example the authors looked at is gender. They believe that both women and men use computer differently. Women use the Internet "as an additional communication medium" while men tend to use the Internet as a source of "fun, enjoyment and pleasure". The men and women are employing computer technology for different tasks. Women prefer interaction with computers that provide help or make a connection with someone, while men see computers as extensions of power.

Meanwhile, ICT literacy refers to a broad concept that includes critical cognitive skills and the application of technical skills and knowledge for problem-solving (Serim, 2004). ICT literacy can be defined as how best and capable a person is in order to perform a task or operate a technology application. For those people who have the skill on information technology will be referred to people who have literacy in ICT. This type of people can operate well in ICT and can perform their tasks with using ICT in a higher standard. Information technology skills enable an individual to use computers, software applications, databases, and other technologies to achieve a wide variety of academic, work-related, and personal goals. Ideally, "fluency with technology" focuses on understanding technology and becoming more skilled through continued use.

RELATED THEORIES

It is quite well accepted that providing technology access is not the panacea to solving digital divide. In fact, providing access and encouraging initial use is only one of many factors that influence digital adoption. Since then, many other studies have proposed various other possible answers to understanding digital inequality. Jung *et al.* (2001) for example, proposed that socio-economic factors such as income and education could determine use and nonuse of ICT. These factors, also termed as 'life factors' by Williams (1990) tend to influence in manners that are unfavorable to the socio-economically disadvantaged. This in

turn could shape experiences and opportunities, living and working conditions, status in society and ultimately, one's view of the world (Williams, 1990). Agarwal & Prasad (1997) and Bhattacharjee (2001) also brush aside the importance of focusing on access and proposed 'user acceptance' as an important factor to understand instead.

The Theory of Planned Behavior is one of the three main psychological theories commonly used to understand technology acceptance. While dwelling in detail on each of the theory is beyond the scope of this report, it needs to be mentioned that Theory of Planned Behavior is found to be useful because it stipulates that attitudes, subjective norms, and perceived behavioral control will influence individual's behavioral intention and subsequently individual's behavior. In other words, unlike the other two theories, it captures social and behavioral control factors necessary to understand digital inequality (Taylor & Todd, 1995; Kvasny & Keil, 2002).

For this study, it is assumed that, for reasons already explained above, theories developed for understanding digital divide between the socio-economically advantaged and the socio-economically disadvantaged can also be applied to the context of workers in different hotel grad. Thus, the Theory of Planned Behavior can be the best framework to guide this study.

METHODOLOGY

A quantitative research methodology is used for this study. The quantitative aspect of the research delves into the analysis of variables that relate to accessibility, utilization and attitudes toward ICT as well as ICT literacy among the frontliners of the hotel sector. The study was conducted through a questionnaire survey consisting of part 1 and part 2 which was distributed to the frontliners of the hotel in the city of Penang, Malaysia. Part 1 of the questionnaire uses four point Likert scale ranging from 1 = never to 4 = always for questions on Accessibility; 1= strongly disagree to 4 = strongly agree for questions on Utilization, Attitudes and Literacy; and 1 = very unfamiliar to 4 = very familiar for questions on several computer applications that can be accessed at home or at work. Part 2 of the questionnaire sought socio-demographic background of respondent. Two numerators assisted with the data collection process. They were previously trained on the objectives of the study, the content of the questionnaire and the proper way to approach a potential respondent. At pilot stage, the instrument was tested for clarity and conciseness of questions.

To determine internal consistency, Cronbach's alpha was used to show how well the items in a scale correlate with one another. According to Santos (1999), the reliability of the scale is the extent to which repeated use of the scale at different times under the same conditions will lead to the same results. Hence, in this instance, reliability is related to whether the dimensions will yield the same result each time if used repeatedly. If a scale is not reliable, it cannot be valid, because it is not properly measuring anything at all, let alone measuring the right thing.

Cronbach's alpha was calculated for all dimensions. In deciding on an acceptable Cronbach's alpha value, it should be remembered that there are no exact rules and the research purpose should be kept in mind. As Sekaran (1992) demonstrated, acceptable values have ranged from 0.6 to higher in standardized tests, where 1 is the ultimate value. A lower case of reliability is proven when the Cronbach's alpha reliability yields values of lower than 0.6 (Sekaran, 1992). Cronbach's alpha reliability coefficients were computed and the results for all dimensions in the current study showed acceptable levels of reliability of 0.7192.

Population

The population of this research is the frontliners of the hotel sector in Penang, Malaysia. The overall sampling frame only includes the frontliners of the 3 star hotels and 5 star hotels in Penang, Malaysia. There are five 5 star hotels and two 3 star hotels in Penang. Frontliners from 5 star and 3 star hotels are chosen as unit of analysis because of the (assumed) difference yet similar nature of both categories of hotels. For example, comparing 3 star hotels with 5 star hotels is assumed to generate a clearer findings than comparing 4 star and 5 star hotels (as they are quite similar in terms of facilities and services provided), or comparing 2 star and 5 star hotels (as they are very different in terms of facilities and services provided) .

Sampling and data collection approach

The respondents of the study were chosen through a simple purposive sampling. As according to Hair *et al.* (2007), simple purposive sampling is a straightforward method that targets a particular group of people (in this case, hotel frontliners in all four departments of a hotel i.e. front office, Food and Beverage (F&B) services, Housekeeping as well as Sales). Frontliners were not segregated based on departments primarily because based on personal conversations with hotel personnel, the following conclusions can be made about the participating hotels: 1) hotel workers are often rotated among department; and 2) computer is used in every department, albeit with task specific software. Solicitation of participation began with a letter sent to general managers for consent to involve their staff in the survey. This is followed by a telephone call to confirm the consent. Negotiations generated 15 willing respondents from two 3 star rated hotels (N = 45) and 30 from three 5 star rated hotels (N = 91). This means the sample size for 3 star respondents is 33 percent while that for 5 star is 36 percent.

Questionnaire design

The questionnaire was divided into two part based on the objectives in this research study. The questionnaire was to measure the ICT access, attitude, utilization and literacy among the frontliners of the three and five star rated hotel in the city of Penang, Malaysia.

In the first part of the questionnaire, there are four sections which consist of 20 questions where the respondents were asked to indicate the level of perceptions in terms of attitude towards ICT (five questions), access to ICT resources and infrastructures (five questions), utilization of ICT (five questions) and literacy on ICT (5 questions) using the Likert scale statements provided. An open-ended question asking ICT related qualification of respondent is also provide to add depth to the survey. In the second part, there are 6 socio-demographic questions for profiling purposes.

DATA ANALYSIS

To establish the reliability of the questionnaires, Cronbach alpha feature of the Statistical Package for the Social Science (SPSS) was used. The validity of the research tools was determined through factor analysis. To determine any statically significant differences in ICT access, utilization, attitude, and literacy among the frontliners of the three and five star hotels, the independent sample T Test is used.

Findings

Mean values are analyzed to provide description of the data gathered. The findings on *accessibility to ICT* indicate that frontliners of 3 star hotel do not have as much access to computer at home (mean = 2.2) compared frontliners in 5 star hotels (mean = 2.8). The mean for the access to computer at work among the frontliners for 3 star hotels was also lower (mean = 1.8), compared to 5 star hotels (mean = 3.6).

Three star hotel's frontliners also do not have access to internet (mean = 2) compared to their 5 star counterparts (mean = 3.6). This may be due to the lack of need to have ICT in performing tasks assigned to them (mean = 1.6), compared to their colleagues in 5 star hotels (mean = 2.8).

To see if there is a significant difference between 3 star frontliners and 5 star frontliners, Independent samples T Tests were performed on the data. The findings indicate that there is no significant difference between the two groups in terms of access to computer at home ($p > 0.05$). However, they are significantly different in terms of access to computer at work ($p < 0.05$). On the other hand, there is no significant difference between the two groups in relation to access to internet while at work. This means that despite difference in hotel size, frontliners still can have access to internet. When it comes to the need for ICT to accomplish their tasks, the two groups are significantly different. There is a lesser need for ICT among 3 star hotels' frontliners when at work compared to 5 star's. This denotes hotel management's lack of emphasis on ICT use in their respective operations.

Eight people from the 3 star hotels and 2 from the 5 star categories do not have computer access at work. These people were asked to answer question 5 about the reasons for the lack of access. From the answers, the ones from 3 star hotels don't need ICT to perform the tasks assigned to them (mean = 3.50). Similarly, more from the 3 star hotel category do not know how to use the internet (mean = 3.25). However, both categories concur that they do not have enough training in ICT (mean = 3.00) to have more access to computer at work. To confirm the descriptive data, T Test is again performed on the data and the two groups are found to be statistically different in terms of ICT needs in daily job ($p < 0.05$) and their skill to use the internet ($p < 0.05$).

Looking at the *utilization of ICT* among the frontliners in hotel sector, it can be observed that frontliners from 3 star hotels do not really agree that they use ICT on a daily basis (mean = 2.7). On the other hand, frontliners of 5 star hotels is more agreeable that they do use it daily (mean = 3.3). In addition, more 5 star hotel frontliners (mean = 3.1) compared to 3 star frontliners (mean = 2.3) agree their respective hotels train them on ICT. The frontliners of 3 star hotels do not agree that ICT provided is helpful to them in accomplishing their daily task (mean = 1.7). In contrast, more of the 5 star frontliners agree about the usefulness of ICT provided to them (mean = 3.5). Consistent to this is the next finding that less of the 3 star hotel frontliners use and subscribe to emails (mean = 1.7) compared to their 5 star counterparts (mean = 3.1). Finally, the findings indicate that 3 star hotel frontliners do not always use ICT in communicating with guests (mean = 1.7). However, more 5 star hotel frontliners admit to have always used ICT in communicating with guests.

T Tests conducted on the above variables indicate that there is no significant difference between the two groups in terms of daily utilization of ICT at their respective hotels ($p > 0.05$). Similarly, there is no significant difference in terms of perception on ICT training the get from hotels (even though more 5 star hotel frontliners agree to being trained by their

hotels). However, they do differ significantly on perception about the usefulness of ICT provided to them ($p < 0.05$). They also differ significantly in terms of using and subscribing to emails to communicate with colleagues ($p < 0.05$). Finally, the two groups differ significantly in terms of the use of ICT in communicating with guests.

In terms of frontliners' attitudes towards ICT, analyses show that overall, 5 star hotel frontliners have more positive attitude towards ICT compared to their 3 star counterparts. Specifically, in contrast to the 5 star hotel frontliners, 3 star hotel frontliners disagree that ICT enhances their work efficiency (mean = 1.6), and that there are enough ICT resources at their workplace (mean = 1.6). They almost agree that ICT complicates their work instead (mean = 2.8). Thus, they do not accept ICT system at their work place (mean = 1.8), do not enjoy using ICT to perform their work (mean = 1.6) and do not agree too much that learning ICT is compulsory.

T Test on the same attributes indicate a significant difference between the two groups in terms of perceptions on whether ICT enhances their work efficiency or not ($p < 0.05$). The two groups also differ significantly in terms of perceptions on the adequacy of ICT resources at their respective work place. Significant difference is also evident in their perceptions on whether ICT use complicates their work, on their receptiveness of ICT at their respective hotels, on their feelings of joy when using ICT in performing their work, and on the importance of learning ICT.

In terms of literacy among the frontliners, analyses show that 3 star hotel frontliners do not know ICT too well to perform their tasks (mean = 2.0) and always face problems when using ICT (mean = 2.6). T Test shown in Table 4.10 below indicates that there are significant differences between the two groups in relation to the attributes mentioned.

The mean values shows the level of frontliners' familiarization on selected office software such as Microsoft Office Word, Excel, Publisher, Front Page and Power Point indicate that comparatively speaking, 3 star hotel frontliners are less familiar with Microsoft Office Word (mean = 1.8) and Microsoft Office Excel (mean = 1.8), equal to their 5 star hotel counterparts in terms of familiarity on Microsoft Office Publisher (mean = 1.6) and Microsoft Office Front Page (mean = 1.6) and less familiar with Microsoft Office Power Point (mean = 1.8).

Analyses using T Test indicate that there is a significant difference between 3 star hotel frontliners and 5 star hotel frontliners in terms of familiarization in the Microsoft Office Word and Microsoft Office Power Point. However, there is no significant difference between the two groups in terms of familiarity with Microsoft Office Publisher, Microsoft Office Front Page or Microsoft Office Power Point.

Analysis on the mean level of familiarization of the internet access such as downloading, find information, watching online movie, chatting with friends, video conferencing, e-mailing, e-voice, e-commerce, e-purse, online shopping and online banking among the frontliners of 3 star hotels and 5 star hotels indicate that, 5 star hotel frontliners are more familiar with downloading (mean = 3.4) and information search (mean = 3.7) and email (mean = 3.4). To a lesser degree, they are more familiar with online movie (mean = 2.9), online chatting (mean = 2.5), and video conferencing (mean = 2.6). However, both 3 and 5 star hotel frontliners are not very familiar with other online features such as E Voice, E Commerce, E Purse, Online Shopping, and Online Banking.

T Test conducted on the same attributes show that there is a significant difference between the two groups (<0.05) in terms of familiarity with downloading, searching information online, ability to watch movie online, chatting online, and video conferencing and emailing. As predicted, there is no significant difference between the two groups ($p>0.05$) in terms of familiarity with e-voice, e-commerce, e-purse, online shopping, and online banking.

DISCUSSION AND CONCLUSIONS

From the analysis, it is evident that significant differences do exist between workers of different hotel grade in terms of ICT access, utilization, attitude and literacy. There is a 'divide' or 'inequality' in workers' access, utilization, attitude and literacy in the two types of hotels. Specifically, it is clear that 3 star hotel frontliners do not have as much access to computer while at work, except for the internet, to which they have adequate access. This shows that despite shortage of computers, 3 star hotels do invest in internet access to ensure that their staff can handle some important tasks such as dealing with online bookings, communicating online with potential or previous guests etc.

The findings also indicate 3 star hotels are not really as updated as 5 star hotels in their ICT requirement. These findings are consistent with Hoontrakul & Sahadev (2007) conclusion that ICT investment is largely the priority of big hotels. While cost concern could explain this situation, it cannot conclusively explain why 3 star hotel have lesser need for ICT to get their jobs done compared to their 5 star counterparts when the job description is about the same. More information is also needed as to why 3 star hotels are content to doing things the old way, when their competitiveness may depend on better adoption of ICT. As Chathoth (2006) proposes, new technology can reduce service errors possibilities and consequently the costs of such errors. Frequent occurrence of such errors can negatively affect guest satisfaction and ultimately the marketability of hotels to future customers.

In terms of utilization of ICT, the findings indicate that both categories of hotels use ICT daily and do train their staff on ICT applications. However, frontliners of 5 star hotels are more positive on the usefulness of ICT to them. They communicate daily with their colleagues using emails. They also make full use of ICT when communicating with guests. Similar utilization pattern is not evident as far as 3 star hotel frontliners. Their attitudes towards ICT are also generally pessimistic. The attitude of 3 star hotel frontliners explains the lack of ICT use in daily communication. They are more negative about the use of ICT in enhancing their work efficiency compared to their 5 star counterparts. They feel that ICT resources at their respective workplace are lacking. To them, using the ICT resources that are available at their work premises will only complicates their work. They don't really accept the ICT resources available at their workplace and do not enjoy using the ICT resources available. They also do not fully agree that learning ICT should be made compulsory (as shown by their mean value of 2.4 on this attribute). All the above shows that 3 star hotel frontliners have an overall negative attitude towards ICT compared to 5 star hotel frontliners.

There is also significant difference between the two groups in terms of ICT literacy. 5 star hotels' frontliners are confident with their ICT skills in performing their tasks. On the other hand, 3 star hotel frontliners agree that they faced problem while using ICT to perform their tasks. The two groups also differ significantly in their working knowledge on Microsoft Office Word and Excel – basic softwares used in many professions including tourism and hospitality. As the mean values indicate, 3 star hotel frontliners need more training on these two basic softwares compared to their 5 star counterparts. The 3 star hotel frontliners are

also not very literate in searching for information online and downloading the information for their use, as well as utilizing online movie, video conferencing and e-mailing facilities. Except for online movie and video conferencing, the other facilities are basic but very useful applications for a frontliner. Therefore, the lack of literacy in these basic applications is a reason for concern.

The theoretical contribution of this study is that it shows that menagerie's lack of appreciation of ICT's usefulness can influence the perception of the workers on the same issue. Therefore, top management commitment is an antecedent to workers' ICT access, attitude and literacy. Without it, negative perceptions about ICT will prevail and this could in turn affect work culture and will pose problem for the hotel management should the hotel decide to upgrade its ICT priorities in the future. As observed by Marks (2006) even if all managers were given access to technology, there is no guarantee that they will have equal ability to utilize it because an existing gap in knowledge (literacy) in technology could detriment the prospects of a successful and efficient employment of more advanced technology in the future. On the other hand, Davis *et al.* (1989) proposition that capability is preceded by a positive attitude towards the technology is also important. If the frontliners are not enthusiastic about ICT to begin with, as demonstrated in the findings of this study, then any attempt to adopt ICT infrastructures would be futile. This is perhaps the biggest barrier for a medium sized hotel in ICT adoption.

Other barriers that could explain 3 star hotel's lack of enthusiasm in adopting ICT may also be linked to Espino-Rodriguez and Gil-Padilla's (2005) observation that only large companies can survive the cost and technicality involved in ICT adoption. Therefore, the need for support in terms of ICT funding and training for hotels of this grade cannot be ruled out.

In conclusion, as far as the Penang hotel sector in concerned, there is an evident gap between 3 star hotel and 5 star hotel frontliners in relation to the issues of access, utilization, attitude and literacy in ICT. Frontliners in 3 star hotels lag behind their 5 star counterparts in terms of access to computer at work, hardly utilize ICT in their daily work, have negative attitude towards ICT and lack the basic skills in ICT. But as found in this study, the problem is not only firm size, costs or technicality but also top management commitment. As the hotel sector is highly competitive, this gap is not going to help 3 star hotels in the long run. Hotel owners and trade associations must therefore step up effort to correct the situation. This needs to begin with changing the attitude of workers towards the importance of ICT, providing them with adequate and user friendly technology to work with, training them on the importance of ICT and enhancing their ICT skills and redesigning the job specification to take advantage of ICT to enhance their work efficiency.

The managerial implication of the study findings is that top management of medium sized hotels needs more awareness and understanding about the benefits of ICT. Of course, support in terms of cost and technicality of adopting ICT will also be useful. Trade association and related government agencies can assist in providing such support to ensure that such hotels are more capable of providing reliable, responsive, and assuring services to tourists.

In the light of increasing global tourism and tourist arrivals to many destinations, the efficiency of a hotel regardless of size will contribute to the overall tourist satisfaction about their stay. For example, if a hotel's target market is the international travelers, they need to have a very good website with speedy connection to facilitate international bookings,

inquiries etc. As the market is used to high technology in their countries of origin, it is only natural for them to expect the same standard. If a hotel fails to meet this expectation, it will lose its clients to its more technologically advanced competitors. This could have positive long term implication on the hotel's image, and improve the hotel's competitiveness.

SUGGESTIONS FOR FUTURE RESEARCH

This exploratory research has managed to highlight the divide that exists between 3 star hotel and 5 star hotel frontliners in ICT within the context of Penang. Future researchers interested in this area are advised to focus more specifically on the issue by 1) zeroing on frontliners on specific departments only as opposed to all four departments; and 2) asking questions on more specific hospitality software used by all hotels being compared. They also may need to consider bigger sample (perhaps a nationwide survey) and longer time field time. Another area worth investigating is why there is a lesser need for ICT among 3 star hotels' frontliners when at work compared to 5 star's when the nature of work is almost similar. A qualitative research may be able to uncover the reason for this scenario.

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