A Review of Drivers of Technology Adoption in The Hospitality Industry in Kenya.

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ABSTRACT

In July 2016, Kenya held a 14th Session of the United Nations Conference for Trade and Development (UNCTAD) to discuss the potential of emerging nations in unlocking their growth on the back of technology. UNCTAD estimates that, the global value of ICT platforms has increased by 38 per cent from 2013 to 2016. It is apparent that adoption of technology in SMEs offers enormous opportunities for growth and development of global economies especially in emerging nations. In Kenyan hotel industry, the small and medium hotel enterprises are often flooded with many similar, often easily substitutable service offerings and of sub-standard quality, which eventually can affect the performance of the industry. Adoption of information technology presents a platform for hotels to achieve efficiency of operations and innovation of unique products and service. However, little seems to be known on the drivers that can influence such adoption. This study explored drivers of technology adoption in hospitality industry in Kenya. The study adopted a qualitative approach by reviewing and analyzing existent literature on the topic under study. Based on the review of selected literature, the findings of this study contend that in order to achieve operational efficiency, most hotels adopt basic technologies. This study proposed an integrated framework of drivers of technology adoption in hospitality industry. However, this paper, recommends a quantitative study to investigate the validity and reliability of the proposed conceptual framework in order to gain insights into how technology can truly influence the performance of hospitality enterprises in the Kenyan market context.

Key words: Hospitality, Information Communication Technology, Hotel Performance

INTRODUCTION

Hospitality and tourism enterprises are expected to deliver their services and products in the most effective and efficient manner possible, therefore, adoption and use of information and communication technology (ICT) plays a critical role in overcoming this challenge (Duffy 2010). The use of technology in hospitality SMEs offers enormous opportunities for growth and development of global economies especially in emerging nations like Kenya. In the recent past, Kenya held a Fourteenth Session of the United Nations Conference for Trade and Development (UNCTAD) to discuss how emerging nations have the potential to unlock their growth on the back of technology- specifically e-commerce. UNCTAD estimates that, the global value of ecommerce platforms has increased by 38 per cent from 2013 to 2016 (Ngahu, Mputhia, Wachira, Gaya , Wairimu, Yieke, & Kiunga 2016).

Globally, the hotel industry begun to embrace technology into its operations and management processes since the Seventies of the 20th Century. The use of Property Management Systems (PMS)

and the Central Reservation System (CRS) emerged as early as the Seventies of the 20th Century. Since then, many systems that are sophisticated have been developed to improve interoperability and interconnectivity, as well as provision of automatic management of reservations. The use of Global Distribution Systems (GDS) begun in the late 1980s. The internet revolution, known as network of networks started in 1990s, but it is since 2000 when intense transformation in the ICT's took place that ushered in other related technologies, like Wireless-radio connection and Wi-Fi. At same time, the blogs as a platform through which users collaborate in the construction of knowledge came into existence. Tourism and travel webs, which link the concepts of virtual communities or social networks were later on developed (Pedroche, Antón, Andrada & Karaboytcheva 2015).

Pedroche *et al.,* (2015) notes that hospitality operations have encountered a proliferation of different mobile technologies such as Personal Digital Assistants (PDA), 3G and Global Position Systems (GPS) among others. From an international viewpoint, hotels are increasingly adopting the use of technology information technology to improve productivity of employees and satisfaction of customers (Ham, Kim & Jeong 2005; Lam, Cho & Qu 2007). According to Oltean, Gabor and Contiu (2014) the most common information technologies in adopted in hotel operations include front-office information system such as Fidelio and Global distribution systems (GDS) such as Worldspan and Amadeus. Fidelio, Worldspan and Amadeus are used to make reservations. Besides hotel management information systems such as Medallion Property Management System (Medalion PMS) have been adopted to manage hotel operations, regardless the structure and number of rooms. Other systems commonly used include Expressoft Interface Manager, eXpresSoft Wireless Check, eXpresSoft Master and Customer Relationship Management (CRM) applications (Oltean *et al.*, 2014).

On the other hand, Mwai (2016) study on adoption of technology in the Kenyan hospitality sector opines that the sector economy continues to face a myriad of challenges which stifle the adoption. Among such challenges, include poor infrastructure, inaccessibility to credit facilities, technological change in which many small business enterprises appear to be unfamiliar with. Consequently, foreign firms and international firms remain in the forefront in accessing the new technologies as opposed to the local enterprises. As a result, local hospitality enterprises are subjected to intense competition from well established international chain and franchise hotels, even though customers continue to pile pressure in demanding customized quality products and services (Mwai 2016).

Besides, Mwara (2012) underscores that the Kenyan hospitality markets face rivalry and competition occasioned by many changes in the Kenyan economy because of liberalization, globalization, technological advancement and more enlightened customers. Furthermore, the industry is often flooded with many similar, often easily substitutable service offerings, often of sub-standard quality products. Hence, adoption of information technology presents a platform for hotels to achieve efficiency of operations and innovation of unique products and service.
Despite immense benefits accrued to technology, the Kenyan hospitality sector seem be slowly embracing radical technologies. As observed by Mwai (2016), one of the challenges which impedes technology adoption in Kenyan hospitality industry is lack of adequate information on

technology change and adoption. Besides, few studies seem to have assessed the drivers of technology adoption especially in the Kenyan context. This study is motivated by the need for information on drivers that can influence adoption of technology that can surmount the outlined challenges and positively influence performance.

Research Questions
This study seeks to investigate the following specific objectives:
To investigate the drivers of technology adoption in the Kenyan hospitality industry?
To propose a holistic framework of drivers of technology adoption in the hotel industry.

LITERATURE REVIEW
Globally, studies have found that the hospitality industry has been keen to adopt information technology. Moreover, literature suggests that technology is regarded as a main source of sustainable competitive advantage and a strategic weapon, especially in the tourism and hospitality industries (Duffy 2010). Though, according to Sigala (2003) the level of technology adoption varies amongst tourism enterprises.

Globally, several studies have propunded frameworks for drivers of technology adoption in the hotel industry. For instance, Duffy (2010) study suggested a framework with the main drivers being technology acceptance, (Technology Acceptance Model), organizational readiness, internal environment and barriers to adoption. However, the study focused greatly on micro and small tourism enterprises in Ireland. Besides, Morteza, Hong, Sabouri, and Zulkifli (2012) proposed a model with a classification of internal and external drivers. Morteza et al., (2012) posit that internal factors include top management, a firm's resources, end users and organizational characteristics. External factors comprise characteristics of IT products, external and competitive pressure, external IT consultants and vendors, and government.

An assessment of Morteza *et al.,* (2012) framework reveals a weakens in the framework to appreciate the hospitality environmental context with respect to the role of employees and cutomers in the adoption process. According to Abdelbeary (2011), the willingness to adopt any new technology depends on the benefit the technology will have on employees. On the other hand, Hemmington (2007) states that hospitality customers do not buy customer delivery, but experiences. Therefore the role of technology in packaging the product is key. However, the fact that the customer is largely involved in the co-production of the service, it is also important for the customers to be involved in the adoption process. Besides, the high level of fragmentation of sectors of hospitality calls for a more integrated framework that is applicable to the fragmented hospitality sectors. Furthermore the model fails to appreciate other variables that may mediate the adoption process.

On the other hand, Oliveira and Martins (2011) reviewed a Technological, Organizational and Environmental (TOE) framework initially developed byTornatzky and Fleischer in 1990. According to Tornatzky and Fleischer (1990), technological context, organizational context, and environmental context for IT adoption are the main drivers of technology adoption. Technological context describes both the internal and external technologies relevant to the firm which include

practices and equipment, as well as the set of available technologies external to the firm. Organizational context refers to descriptive measures about the organization such as scope, size, and managerial structure. Lastly, environmental context is the arena in which a firm conducts its business—its industry, competitors, and dealings with the government.

However, the TOE framework takes a general approach to adoption of technology. There is no empirical evidence of the application of the framework in hospitality industry (Oliveira & Martins 2011). Besides, the study was done in Europe, a study area which has different environmental factors compared to Kenya, hence the need to review the framework in light of the Kenyan hospitality industry context.

In the Kenyan context, Mwai (2016) puts forward a framework which can be used to guide hospitality enterprises to adopt technology. The framework includes the following variables; (1) market characteristics, (2) customer characteristics, (3) initial ICT installation and running costs and lastly (4) ICT and its characteristics. According to the market characteristics, the study explains that hotels may differ in their levels of ICT adoption propensity based on the profile of visitors, the size of the market, or the intensity of competition. Concerning customer characteristics, the study observes that hotels may adopt ICT due to demands of customers, who look forward to flexible, specialized, accessible and interactive products and communication with principals. Thirdly concerning costs, the study posits that investment costs are generally much higher in less developing countries such as Kenya. Due to such high costs, hotels in Kenya may struggle to adopt technology.

While the framework suggested by Mwai (2016) study seems to project a more realistic illustration, one weakness with the framework rests on the fact that the framework narrowly focuses on internal drivers of technology adoption and fails to appreciate other external drivers propounded by Morteza *et al.,* (2012) such as availability of the technologies and the government policies and regulations on their adoption and use. Besides, the framework fails to appreciate the unique nature of the hospitality industry in terms of the characteristics of its products.

Based on the review of existent litrature on drivers of technology adoption, this study proposes a hybrid framework for adoption of technology in the hospitality industry. The proposed framework originates from a review of the following previous studies; Duffy (2010); Oliveira and Martins (2011); Morteza *et al.,* (2012) and Mwai (2016). The framework attempts to address the inadequacies raised from the studies reviewed. Besides, the framework is justified on the grounds of the unique characteristics of the hospitality industry, specifically on the role of empoyees and customers, the intangilibility, variability, perishability and the lack of ownership of the hospitality products. The framework appreciates the mediation role of the cost and availability of the technology in the adoption process. The framework is shown in figure 1.0:
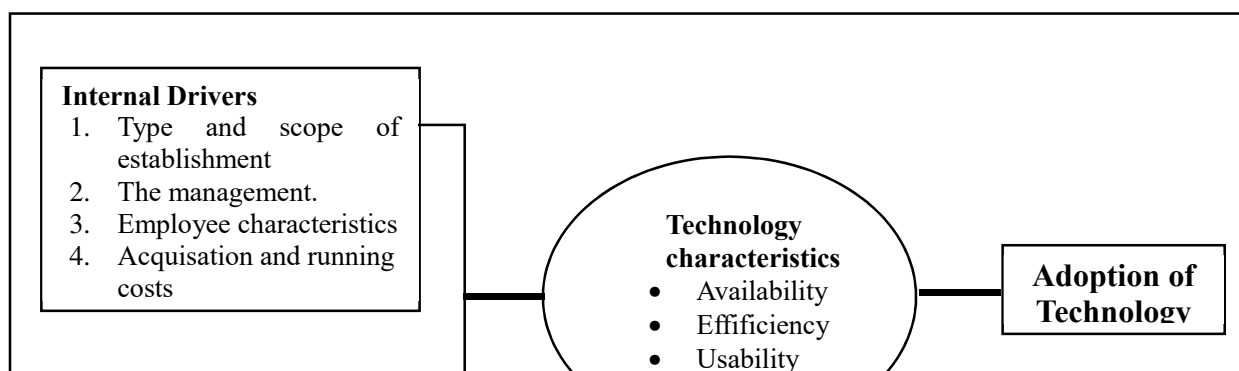
Fig. 1: Integrated framework of drivers of technology adoption in the hospitality industry.
Source: Duffy (2010); Oliveira and Martins (2011); Morteza *et al.,* (2012) and Mwai (2016)

METHODOLOGY

The study adopted content analysis research design. The study took a qualitative approach by reviewing previous studies conducted on drivers of technology adoption in the hospitality industry to saturation. The table 3 below illustrates the summary of the reviewed studies.

Table 3:Summary of Reviewed Studies

Sn. No	Authors	Analyzed Variables	Methodology Adopted
	Duffy (2010)	Technology Acceptance Model (TAM)- Perceived usefulness, Ease of use Organizational readiness and External pressure- Internal environment- expertise, support from management or owners, user perceptions, efficiency and effectiveness of technology Barriers- location of the firm, security concerns, costs, capital, personal background, industry issues e.g. seasonality.	Design- exploratory and explanatory Methodology-Three-phase research process. Phase 1A-Respondent completion postal questionnaire Phase 1B-Hotel web presence survey Phase 2A-Focus groups and respondent completion of questionnaires Phase2B-In-depth interviews Phase3-Respondent completion of questionnaires Study area- Ireland
	Morteza, Hong, Sabouri, and Zulkifli (2012)	Internal factors- -Owner/manager characteristics -Organizational behaviour and characteristics -Firm's resources -IT users External factors -Government	Content analysis of theories, empirical research and case studies related to IT adoption) Study area-Malaysia

	-IT vendors and consultants -IT products in the market -external and competitive pressure	
3. Oliveira and Martins (2011)	Technological context- internal and external technologies relevant to the firm Organizational - scope, size, and managerial structure. Environmental context - industry, competitors, and dealings with the government.	Content analysis of the following types of empirical studies: Studies that used only the TOE framework and Studies that used the TOE framework combined with other theories Study area-Portugal
4. Mwai (2016)	Market characteristics- profile of a hotel's visitors, the size of the market, and intensity of competition, Customer characteristics-customer demand for flexible, specialized, accessible and interactive products and communication methods Initial ICT installation and running costs ICT characteristics	Design -Descriptive research Target population- hospitality managers and technicians Sample size -100 Instrument- questionnaires Study area-Kenya

Source: Duffy (2010); Oliveira and Martins (2011); Morteza *et al.,* (2012) and Mwai (2016).

RESULTS

From the findings, it emerges that adoption of technology in hospitality organizations is influenced by near same drivers which range from internal to external issues. By use of the Political, Economic, Social and Technological (PEST) Model in the analysis of the drivers, it emerges that the most cross cutting drivers in all the studies (Duffy 2010; Morteza et al., 2012; Oliveira and Martins 2011 and Mwai 2016) relate to the socio-economic issues. However, few studies (Morteza *et al*., 2012 and Oliveira and Martins 2011) acknowledge the role of government in the adoption process. Besides, no study s appreciates any mediation role in the adoption process. The summary of the findings is shown in table 2 below:

Table 2: Summary of Findings

Authors	Political	Economic	Social	Technological
Duffy (2010)	None	Costs and capital Industry issues e.g. seasonality.	Organizational readiness External pressure Expertise and perceptions of users Management or owners support Location of the firm, Security concerns Personal background	Technology Acceptance Model (TAM)-Perceived usefulness and ease of use Efficiency and effectiveness of technology

Morteza, Hong, Sabouri, and Zulkifli (2012)	The Government	IT products in the market Competition	IT users Owner/manager characteristics Organizational behaviour and characteristics Firm's resources	IT vendors and consultants
Oliveira and Martins (2011)	The government	Competition	Organizational scope, size, and managerial structure.	Relevant technologies to the firm
Mwai (2016)	None	Market characteristics ICT costs	Customer characteristics	ICT characteristics

Source: Analysis of findings (2018).

DISCUSSIONS

Based on the content analysis of the previous studies it apparent that the most common drivers of technology adoption in the hospitality industy relate to internal and external environment of the industry. The drivers which relate to internal environment can be refered to as internal drivers and those that relate to external environment of a business can be referred to as external drivers. The internal drivers relate to organizational factors such as end user charactersistics, resources available and the management support. On the other hand, external drivers relate to regulatory frameworks, policies, competition and market characterisitics (Duffy 2010; Oliveira & Martins 2011; Morteza *et al.,* 2012 & Mwai 2016).

However, all the drivers from the previous studies reviewed are generic, this study proposes the following more specific internal drivers: (1) type and scope of service, (2) the management, (3) employee characteristics (4) customer characteristics and finally, (5) the acquaisation and running costs. As The type and scope of the establishment will determine the type and level of technology adoption (Sigala 2003). The management can also determine the decision whether to adopt technology or not based on the strategic direction of the establishment. Besides, the success or failure of the adoption process heavily rests on the management (Morteza *et al.,* 2012). It is important to incorporate employees' needs and concerns in the adotion process too (Abdelbeary 2011). Moreover, the fact that the customer is largely involved in the co-production of the service, it is also important for the customers to be involved in the adoption process.

Conversely, the privacy concerns of guests should be considered in the adoption process, otherwise the technology may expose the guests to cybercrime and privacy breaches. Recently, Kenyan recreration centers have been a target to terrorism acts from radical groups like the Alshaabab, this has escalated the need to perform security checks at entrances of malls, restaurants and place of leisure. Patrons frequenting leisure centers have been often required to allow these checks to be done to their bags. Despite understanding of the reasons behind this requirements, there has been resistance from some patrons, especially high-end patrons who may feel that their

privacy is invaded. Hotels can be lost in the conflict of interests-to subject these clients to security checks and lose on their market or to accommodate their 'privacy' concerns. Concerning employees, if the technology is highly customer centered and fails to incorporate the needs of employees, employees are likely to resist its adoption (Abdelbeary 2011).

Lastly, in line with Duffy (2010) and Mwai (2016) costs of acquisition and operation may stifle the adoption process. Operation costs may include maintenance costs may include the costs of training employees on the use of technology. Since the hospitality industry experiences a high employee turnover rate, such turnovers may be costly to cope with since training will be required often.

The industry specific external drivers include: (1) market structure and characteristics, (2) the government regulations and (3)intensity of competition. Just like the Kenyan hospitality market, globally most hospitality firms operate in perfect competition stractures, with a large number of small firms offering identical products (Shetty 2008). Since such markets face intense competition, they may have high affinity to adopt cutting-ede technology in order to survive. Furthermore, the hospitality industry is characterized by unique fetures which includeintangilibility, variability, perishability and the lack of ownership of the hospitality products. All these features may drive the adoption process in order to manage challenges which stem from the unique features.

Concerning governemnet regualtions and intensity of competiton, the industry may be compelled to adopt technology in order to overcome the challenges these drivers may exert on the industry. For instance, the Hotel And Restaurant Act 2009 requires hoteliers to keep a register of the resident guest. Therefore, such a requirement may compel hotels to adopt a technology to management the reservations. It is important to note that availability of technology, its effifiency and usability can either heighten or lessen the adoption process. Therefore, such factors can moderate the adoption process. For instance, in the event where technology is easily available, highly efficient and easy to use, its adoption may be enhanced as opposed to when the technology is difficult to access, inefficient and complex to use.

CONCLUSION, IMPLICATION AND LIMITATION OF THE STUDY
Technology adotioption in hospitality industy is mostly influenced by socio-economic drivers and least influenced by governmental requirements. Besides, the objectives of technology adoption seem to focus more on the commercial and economical benefits towards the industry than the improvement of customer experiences and relationships.

However, this study has certain limitations. First, just like the previous studies reviewed so far, falls short of scientific methodologies that can support scientific analogies of data analysis. Evidently, most of the studies reviewed, adopted descriptive and exploratory designs. Future hospitality research should depart from such methodologies and embrace quantitative methodologies such as correlational and to show causality.

Secondly, due to the limitations of qualitatitive reaserch in generallisation of the findings and the

extensive fragmentation of the hospitlality industry, the proposed framework may not be applicable for all firms. Therefore, the findings of this study require empirical testing to determine its relevance and conformity in the practical setting.

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