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[1*]Judy Kibe, [2]Helen Ogutu & [3]Susan Ojwach

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[1*]Judy Kibe, [2]Helen Ogutu & [3]Susan Ojwach

[1]Lecturer, School of Tourism, Hospitality and Event Management, Moi University

[2,3]Students, School of Tourism, Hospitality and Event Management, Moi University

***Email of the Corresponding Author: judykibe931@yahoo.com**

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Abstract

The general objective of the study was to investigate the efficacy of mobile applications in front office operation operations. The specific objectives studied include; examining the efficacy of guest service mobile applications; finding out the effectiveness of mobile wallet applications; and investigating the efficacy of mobile mapping and travel applications in front office operations. The study was anchored on the theory of the technology acceptance model. The study used a descriptive research design to investigate these objectives. The study area was Hilton Hotel Kenya, a five-star hotel in the Nairobi CBD. The targeted population included 76 employees working in the front office department of the hotel. Random sampling technique was used to identify participants, while Slovin's formula was used to calculate the sample size. Structured questionnaires were used to collect data and descriptive statistics used to analyze it. The study found that the majority agreed that guest service apps used in hotels enhance customer satisfaction and loyalty as well as enabling guests to access hotel services conveniently, faster and cheaper. The study also established that mobile wallet applications

used in hotels make payment for services convenient, more rapid, accountable, and secure. The research further found that mapping and travel apps help visitors approximate the cost of travel to various destinations, remind visitors of their travel plans/takeoff, and inform visitors of environmental details. The study concluded that mobile apps enhance the efficiency of front office operations by allowing convenient, faster, and cheaper execution of transactions. The study recommended that the management and ownership of hotels should ensure the adoption and implementation of the use of mobile applications to offer guest services owing to the numerous benefits they have.

Keyword: *Mobile Applications, Front Office Operations, Hilton Hotel, guest service mobile applications, wallet mobile applications, mobile mapping and travel applications, Nairobi.*

1.0 Introduction

1.1 Background of the Study

Mobile Apps are software programs that are engineered to run on mobile phones or smartphones, to aid in completing a specific task or solve a particular range of problems (Zydney & Warner, 2016). The history of mobile applications is young. With the day to day innovations that have continually transformed telephones into Mobile Phones and Mobile Phones into Smart Phones, Smartphones are no longer just communication gadgets but are used for reasons more than communication. With the continuous customer expectation of improvement with every new smartphone released, mobile phone manufacturers and programmers are continually finding ways to improve the functionality of their products, by coming up with newer and better mobile apps and features. Over the years, this has led to the development of several mobile applications with varying functionalities (Bursztyn, Walker, Shelton & Pederson, 2017).

Apps are taking over the world, no matter what industry or location. The hospitality industry is no exception, and whether you're a hotel owner, café manager, barista, wait staff member or patron, there is an app out there that makes your life easier (Baran, Uygun & Altan, 2017). With the growing progress in technology, businesses must now adapt to the current changes that profoundly affect the growth of companies, especially the development of mobile applications. The advent of smartphones and Wi-Fi have made web accessibility even easier; thus, most businesses are now trying to cram in the contents and functionality of their websites into smaller versions that are compatible with mobile phones. For instance, the hospitality industry has taken opportunities by launching Mobile Hotel Reservation (MHR) Services that enable customers to access their favorable hotels with only a single click of a button (Wang & Wang, 2010).

Globally, the hospitality and tourism industry is considered the most extensive and fastest-growing sector in the world (Chen, Kerr, Chou & Ang, 2017). Hotel businesses operate 365 days in a year, seven days a week and 24 hours a day with no exception of public holidays or off days. Their prime companies are providing meals and accommodations to guests. People travel all over the world for many reasons; thus, room reservations are in the needs of customers. Grabbing the opportunity of world fast-growing mobile penetration rates (Law, Chan & Wang, 2018). Mobile Hotel Reservation adoption can be seen as new and attractive promotional tools in upgrading hotels' image and reputation, by the use of mobile applications.

Hospitality and tourism managers have been and will continue enhancing their competitive advantages by focusing their resources on the virtual business environment to capture the lucrative online business (Ukpabi & Karjaluoto, 2017). It is essential to provide well-perceived service quality, satisfy their customers, and build loyalty for long-term customer value in the virtual environment (Bai et al., 2008). According to Wang, Xiang, Law and Ki (2016), Information Communication Technology (ICT) is crucial to anticipate and meet customers' expectation and it acts as a prerequisite factor in providing satisfactory services. Furthermore, Lai (2015) emphasized that the information highway is highly accessible with mobile phone usage or PDA due to the development of new technology such as WAP or Wireless Application Protocol.

Recently, the technology of mobile hotel reservation adoption has become prevalent among luxury city hotels all over the world and in Kenya. For instance, a search for 3-5 star Kenyan hotels that adopt mobile hotel applications through the Google search engine (http://www.google.com, accessed in October 2016) produced a list of 77 hotels all over the country. The continuous and marked change for tourism and hospitality environment over the past decade, the improved economy as well as significant foreign investors and global events in Nairobi, has further contributed to the stiff competition among hotels in capturing customers. The mobile market in Kenya has been very positive and competitive (Wong & Hiew, 2015).

The mobile hotel reservation adoption, for instance, indirectly has a significant impact on today's hotel industry. In Kenya, Jumia Travels remains to be the prime mobile app used by many people and hotels to facilitate mobile hotel reservation online (Ali, 2018). There also exist other online hotel reservation sites, although they are not as widely used and do not have a dedicated mobile app as in the case with Jumia Travels (Price Waterhouse Coopers (PWC), 2015). Moreover, Kenya boasts of being a leader in mobile money transfers, thanks to Safaricom's ground breaking invention M-Pesa that enables users across the country to send and receive money directly to their phones. Mobile applications such google maps that show directions both by public means or while walking. Other than this, Majority of Kenyans and visitors spend most of their time online, with their smartphones (Mwithimbu, 2017). This presents a massive opportunity for the hotels to advertise their products and offers online, over social media apps and other mobile apps and games, to capture the attention of the ever-present audience.

1.2 Statement of the problem

Mobile applications present a significant opportunity for businesses and hotels to engage both directly and indirectly with their customers. At the same time, serving many customers especially during the high seasons has been a huge problem without the use of mobile apps. For instance, the front office staff have to manually book in the guests, follow up on their day-to-day needs and prepare a documentation on the same. This kind of a manual system has not only been inefficient but also very costly, as the hotels have to employ many front office assistants to carry out such duties, especially during the high seasons. Moreover, operating traditionally without the use of mobile apps has been known to present more problems such as high operational costs, inability to effectively oversee the customer care process, difficulty to document the customer orders, expenses and therefore generally leads to a poor customer service.

Other than eliminating hotel operational costs and delivering the services efficiently to the customers, the use of mobile apps also provide convenience to the customers. It is anticipated that there would be a solution to the identified problems in the hotel industry if the hotels were to incorporate their services into their own custom-made mobile apps. However, despite the perceived benefits of the use of mobile apps in business operations, very few hotels have taken the initiative of developing their own customized mobile apps. The study therefore investigates the effects of the use of mobile apps on front office operations. Can the use of mobile applications increase the front office performance such as improving the check in/out process as well improving customer experience to serve as a source of information that may inform such decisions by other similar hotels?

The general objective of the study was to investigate the efficacy of mobile applications on front office operation operations.

1.3 Research Objectives

i. To examine the efficacy of guest service mobile applications on front office operations.
ii. To find out the efficacy of wallet mobile applications on front office operations.
iii. To investigate the efficacy of mobile mapping and travel applications on front office operations.

1.4 Research Questions

i. What is the efficacy of guest services mobile applications on the front office operations?
ii. What is the efficacy of wallet mobile applications on the front office operations?
iii. What is the efficacy of mapping and travel applications on front office operations at Hilton hotel Nairobi

2.0 Literature Review

2.1 Empirical review

2.1.1 Effect of Guest Service Mobile Applications on Front Office Operations

Just as Apple used mobile technology to redefine the notion of customer service in retail (check-out anywhere without waiting in line), and Uber used mobile technology to transform the meaning of customer service in transportation (pre-paid travel at the push of a button), mobile technology can similarly improve the provision of customer service in hospitality (Gulbahar & Yildirim, 2015). Implementing mobile technology at your hotel does not mean changing the fundamentals of hospitality. Instead, it lets you continue to deliver exceptional service, but now with more efficiency (Buhalis & Costa, 2016).

Today, the majority of mobile hotel bookings are being made 24 hours before arrival. Thus, brand promotions and unique offerings for guests who book last-minute need to be made available. Revenue management and single image inventory (selling up to the last room capacity) are crucial to not miss out on opportunities and do not leave the business to Online Travel Agencies and other third party websites who have introduced a mobile site and/ or application to search, shop and buy hotels rooms (Bertan, Bayram, Ozturk & Benzergil, 2016). Moreover, Mobile technology is, just as the name suggests, mobile. When the desktop system was the de facto computing device, it made sense to offer staff desktop computers and place them both behind a desk in the hotel lobby. However, just as hardware has shifted from fixed to mobile, the staff can change from set in place to mobile as well. Giving the front office staff tablets and other mobile devices means they can provide services to the guests from not just behind a desk, but also from anywhere and everywhere, making operations more efficient (Moğol Sever, 2018).

Hotel mobile concierge applications are becoming a must-have for notable hospitality brands seeking to tap into guests' smartphones to anticipate their needs before arrival on-premises. Hospitality marketers' recent embracing of mobile technology has prompted many hotel brands to employ their own or third-party concierge solutions to drive room service ordering and accessible communication with staff in a bid to personalize guest stays even more. Moreover, experts also suggest that teaming up with a third-party vendor is a smarter solution compared to marketers attempting to create their own branded experience (Buhalis & Costa, 2016). Additionally, with the mobile front desk, the nature of the customer's decision has also changed entirely. Not only is the customer able to perform a rapid price-comparison within feet of the front door, but he or she is also able to make a thorough and comprehensive booking decision seconds before checking in. This makes checking in and reservations not only efficient but also easy to customize to the preference of the customer all at a go (Jung, Kim & Farrish, 2014)

The usability of smartphones depends mostly on access to Wireless Internet called Wi-Fi. The number of Wi-Fi access providers like trains, airlines, busses, cities, etc. is growing every

day, which makes smartphone usage also more comfortable to get access to the applications that work when connected to the Internet (Buhalis & Costa, 2016).

Additionally, the cost of Wi-Fi access on a smartphone is no longer an issue because of the intense competition of different internet service providers (ISP) which has brought the prices as low as possible so that more people can have access to internet connection on their smartphones (Rahimi, Ren, Liu, Vasilakos & Venkatasubramanian, 2014). What is more, offline applications are also available and can be accessed without an active internet or Wi-Fi connection. Smartphones and apps are redefining the guest experience in the hotel industry. Smartphone apps play an essential role in engaging and attracting customers and improving hotel service operations. Hotels that appreciate this fact consider mobile phones a necessary accessory for their staff. For instance, in Australian cities, branded hotels and small hotels are now giving Smartphones to their workers for customer delight services. In these hotels, apps are not only limited to reservation or loyalty programs but work beyond hotel industry expectations (Bertan, Bayram, Ozturk & Benzergil, 2016).

2.1.2 Effect of Wallet Mobile Applications on Front Office Operations

A mobile wallet is a way to carry the credit card or debit card information in a digital form on a mobile device (Mohamed, Gomaa & El-Sherif, 2018). Instead of using the physical plastic card to make purchases, one can pay with their smartphone, tablet, or smart watch. In Kenya, several mobile wallet applications exist - just like other countries. However, majority of Kenyans prefer the use of mobile money wallets, especially Safaricom's M-Pesa. With Mobile wallet apps, the guest's billing isintegrated with phone accounting, in-room entertainment costs, and point of sale purchases on checkout. All these payments can be easily made using Mpesa, Google Wallet, Paypal or any other widely accepted mobile payment methods. Front desk mobile wallet technology therefore provides the agents with real-time information to facilitate efficiency and minimize wait time for payments.

According to Google (2012) research, there is a growing number of Mobile Application users where 16% of private smartphone users use their phones to search for restaurants, pubs, and bars and 14% search for travel information as seen in the Figure 1 below. This research was done for 1000 private smartphone users in the United States.

Figure 1: Daily Mobile Application Use
Source: Google (2012).

According to ETC Digital (2012), a study about the hotel reservations made using a smartphone showed how Europeans are most likely to book a hotel via their mobile applications at 52%, 22% of Americans are also likely to use the same media to make reservations while only 26% are from other countries across the world.

2.1.3 Effect of Mapping, Travel Applications on Front Office Operations

Currently, GPS-enabled mobile devices greatly decrease the reaction time necessary for a hotel's revenue manger to keep rates competitive. As those in the hotel industry know, location is one, if not the most important factors influencing a traveler's selection of a hotel. A recent study showed that the location of the hotel is consistently one of the top three most sought-after features when customers search about the hotel on travel-related websites (Verma, 2016). Using geographical coordinates, GPS-enabled apps instantly reveal nearby hotels, thus removing "location" as a factor from a wide search. This increases the likelihood that customers will base their decision on other factors, such as photos, videos and previous guest reviews to decide (Baggio, & Sainaghi, 2016).

With the increasing use of mobile apps such as Google Maps, Here Drive, among others to find directions, hoteliers capitalize on making their presence in the map noticeable. This makes it easier even for new visitors to locate the hotels without a hustle, by using either their smartphones or vehicle GPS systems. Further, the mapping and travel applications provide visitors with virtually all the important details that are crucial for their travel and stay in the perspective hotels. For instance, mapping and travel applications occasionally provides weather conditions, vehicle traffic level and incidences, distance from one place to another as well as the estimated time and cost for such a trip (Buhalis & Costa, 2016). Past studies have been conducted on the use of mobile application for hotel reservation. According to New

Media Trend Watch (2012), 48% of people are using their smartphone to plan their trip, 44% who are dreaming of their next trip, and 44% smartphone users who research their travel while traveling. Since 2009, the number of mobile travelers has increased over 450% (New Media Trend Watch, 2012).

2.2. Theoretical Review

2.2.1 Technology Acceptance Model

Technology Acceptance Model was proposed by Davis in 1989 (Davis, 1989). According to Davis (1989), when a user is presented to new technology, several factors will influence their decision regarding how and when they will use it. Moreover, according to Hu, Chau, Sheng and Tam (1999), the model seeks to examine the factors that influence the acceptance of a new product in the market and it further establishes that technology changes rapidly and thus developers must ensure that the new systems, processes or products can be used with much ease. The model shows the acceptance of new technology is a function of easiness to use it

The model is relevant to the current study since the adoption of digital television involved acceptance of new technology in the system. Digital migration transmissions are changes that involved the transition from analogue to digital and thus its acceptance depends on the user's perceived usefulness that is a function of ease of use and perceived quality Martínez, Toral Marín, Garcia,Vazquez, Oliva & Torres, 2008). Viewing television in digital transmissions provides a wide content in terms of channels. Moreover, the technology acceptance model can be understood clearly when looking at how Standard Media Group has to accept the digital migration platform to do innovative competitive business strategy. If Standard Media Group accept the technology, they have to consider whether the technology adopted has to ease of use and is perceived to be useful.

According to Ajibade (2018), the TAM failed to consider other factors that affect the acceptance and the willingness to use technology such as education and age. Furthermore, according to Sun and Zhang (2006), TAM failed to examine the influence of the attitude, norms and culture of the employees in the process of adoption of the new technology in which the management decides the technology to be adopted in the company without considering how the employees will react to the move despite the technology expected to improve the efficiency in production. Moreover, Calisir, Altin Gumussoy and Bayram (2009) argued that TAM is much applicable to individuals who want to use the technology rather than in the corporate environment that is made of many employees and requires the integration with the ICT.

2.3 Conceptual Framework

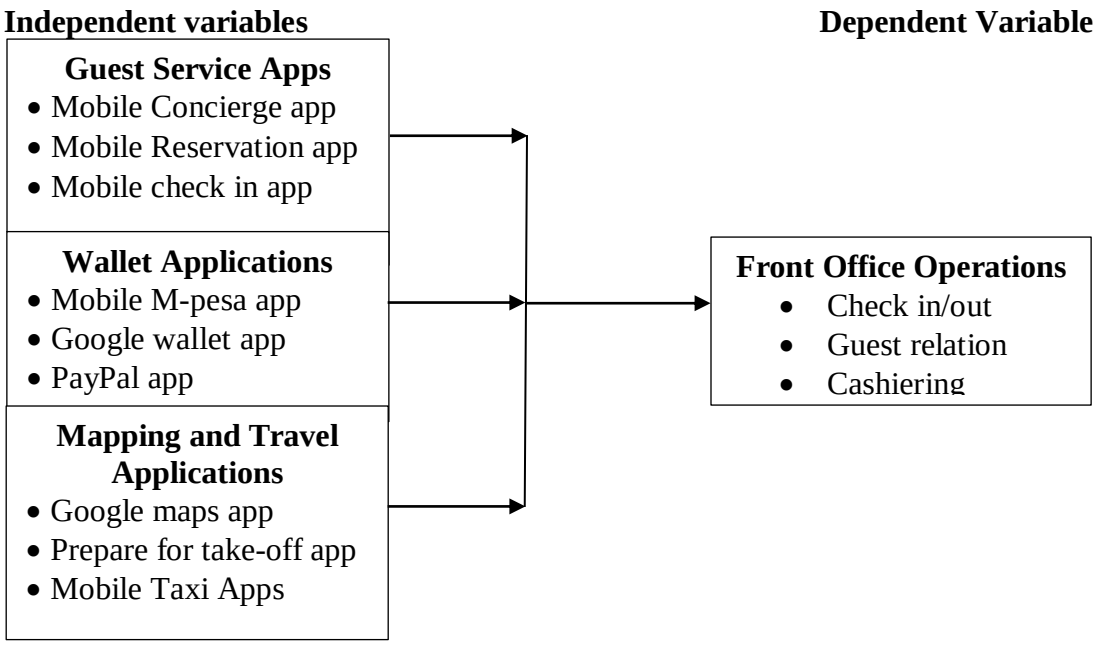

Figure 2: Conceptual Framework
Source: (Author 2019).

The conceptual framework shows how guest service apps, wallet apps, and mapping & travel apps are applied in hotels to enhance front office operations. The variables in the study are operationalized as indicated in the figure 2.

3.1 Research Methodology

The study adopted a descriptive research design that allowed the use of primary and secondary data to explain the relationship between the variables in the study. The study was conducted in Hilton Hotel Nairobi, which is a five-star hotel according to the last government rating. The targeted population was made of 76 employees working in the front office desk, IT, and Administration sub-departments at Hilton Hotel. The sample size of the study was 63 respondents.

4.0 Research Findings and Analysis

4.1 Efficacy of Guest Service Applications

The researcher examined the efficacy of guest service mobile apps on guest experience. The applications investigated included Mobile Concierge Apps, Mobile Reservation Apps, and Mobile Check-In Apps. The findings were as presented in Figure 3

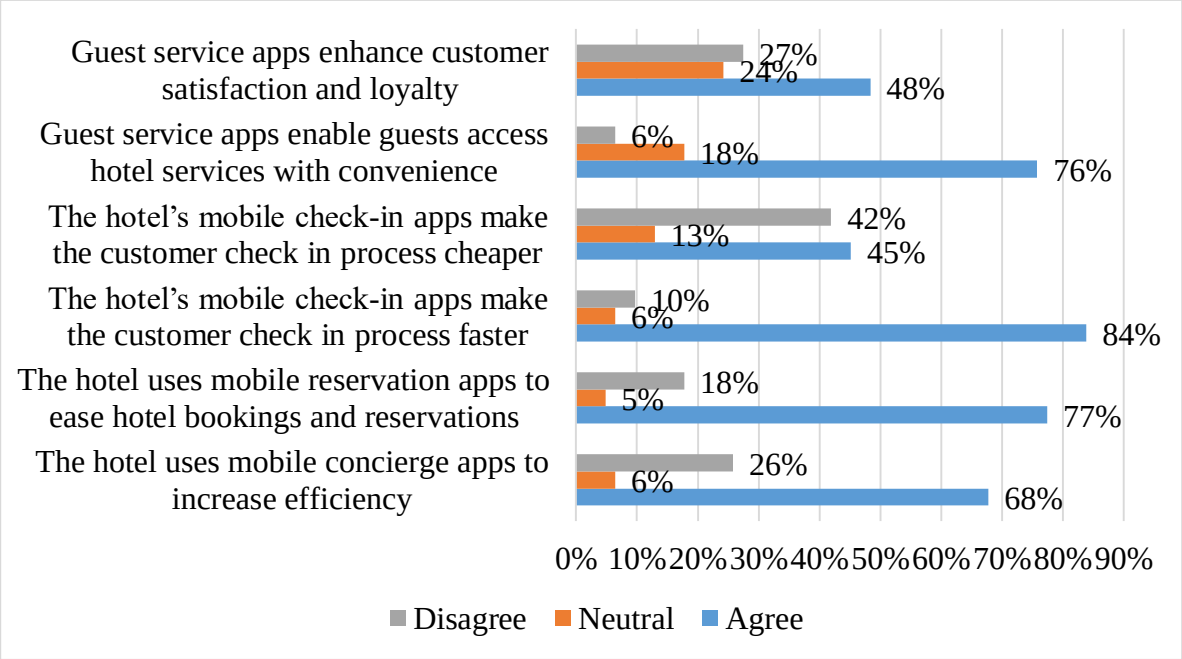

Figure 3: Effects of Guest Service Apps
Source: Author (2019).

From the findings in figure 3, majority (48%) of respondents agreed and 27% disagreed that guest service apps enhanced customer satisfaction and loyalty. Twenty four percent were neutral. The view by majority may be attributed to the fact that guest service apps offer convenience and are cheap, as the guest only requires using their phones. This makes customers more satisfied and appreciative of the apps thus their loyalty. This concurs with the argument by Gilbert and Wong (2003) that ICT, which comprises mobile phones, is crucial to anticipate and meet customers' expectation and it acts as a prerequisite factor in providing satisfactory services. The finding also concurs with those of Buhalis and Costa (2016) that mobile apps usage in Australia enhances loyalty. Majority (76%) agreed that guest service apps enable guest access hotel services conveniently. Mobile phones are called 'mobile' because users always have them wherever they go. As such, whenever there is need to use them, guests have the convenience of easily accessing and using them hence the finding. The finding agrees with Ting *et al.*'s (2011) finding about the convenience of mobile phones.

Though majority (45%) agreed that the hotel's mobile check-in apps make customer check in process cheaper, a significant number (42%) disagreed. This indicates that even though the mobile check-in apps make the process cheaper, to a significant majority of users it does not. As to whether the check-in apps make the check in process faster, 84% agreed and only 10% disagreed. This could also be attributed to the convenience of accessing and using mobile phones. Perhaps this speed of checking-in is the cause for reduced cost of check-in. This finding concurs with the one presented in the literatures that mobile apps make faster the process of check-in and out as it eliminates long queues (Buhalis & Costa, 2016).

Seventy seven percent of respondents agreed that the hotel uses mobile reservations app to ease bookings. Since mobile phones are convenient to the user, the reservations can be done anywhere beforehand before the guest arrives at the hotel (Buhalis & Costa, 2016). The guest's mobile phone number is then used as the identity hence making faster the booking. Majority (68%) agreed that the hotel uses mobile concierge app to increase efficiency. Perhaps this is affected by using the app to streamline the concierge processes.

4.2 Frequently Used Mobile Wallet Application

Figure 4 shows the frequently used mobile wallet application at the hotel.

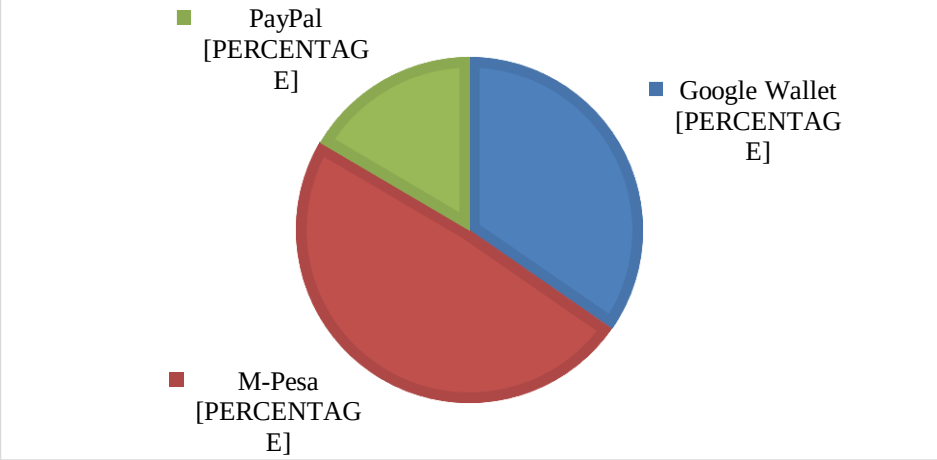

Figure 4: Frequently Used Mobile Wallet Application
Source: Author (2019).

The results in figure 4 depicts that M-Pesa was the most commonly used mobile wallet app according to majority (49%) responses. Google wallet was the second most commonly used application (35%) and PayPal was the least used application at 16%. M-Pesa is the most common form of mobile payment in Kenya, the possible reason why it is the most frequently used in hotels. Google wallet and PayPal are least known in Kenya hence the result.

4.3 Use of Mobile Wallet Apps

Figure 5 shows the findings on the use of mobile wallet applications in hotels in Kenya.

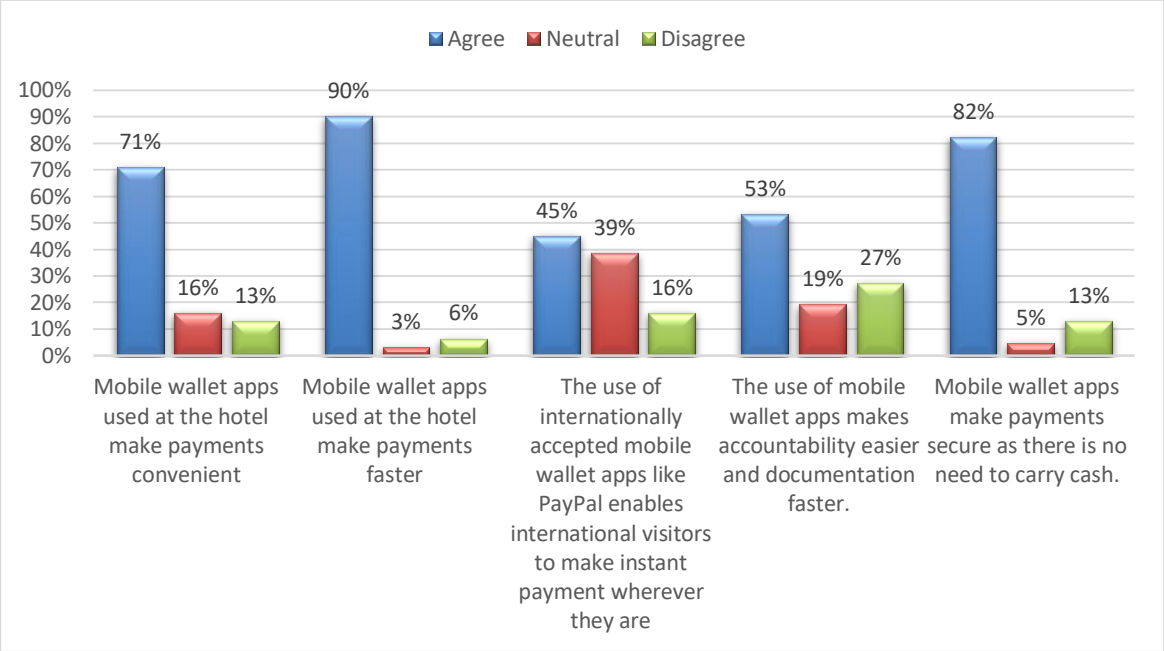

Figure 5: Effect of Mobile Wallet Apps
Source: Author (2019).

Findings from figure 5 shows majority (71%) agreed that the mobile wallet applications used at the hotel make payment for services convenient. This could be attributed to the real-time availability of mobile phones, which make it convenient for one to use them to pay for services whenever requested to. Majority (90%) also agreed that mobile wallet apps used at the hotel make payments faster. Since one carries a mobile phone with them, when asked to pay for services using mobile wallet apps, it is real-time. These findings are similar to those presented by Ting *et al.* (2011) on the use of mobile wallets in the hospitality industry.

As to whether the use of internationally accepted mobile wallet apps enables international visitors to make instant payments wherever they are, 45% agreed, 39% were indecisive and 16% disagreed. Though majority, the 45% shows that even though the mobile wallets allowed the making of payments from everywhere, fewer people benefit from this service. This corroborates the earlier finding that showed that international mobile wallet apps like PayPal and Google Wallet were less frequently used compared to M-Pesa.

Concerning whether the use of mobile wallet apps makes accountability easier and documentation faster, 53% agreed while 27% disagreed. When a mobile phone transaction is made, the service provider keeps a copy of the transaction. For instance, if a transaction is made via M-pesa, M-pesa retains a receipt of the transaction. This is apart from the receipts held by the sender and recipient of the transaction (money). As such, in case of a dispute, the service provider can be notified to give verification hence the enhanced accountability. Majority (82%) agreed that mobile wallet apps make payments secure as the need to carry hard cash is eliminated. This is because the apps work with virtual money (float) which can be

reversed easily when payment is made to wrong destination. Authenticating transaction also requires one to enter a secret number or word (PIN) which discourages theft.

4.4 Efficacy of Mobile Mapping and Travel Applications

Concerning the effect of the use of mobile mapping and travel applications in the hotel sector in Kenya, the findings in figure 6 were collected.

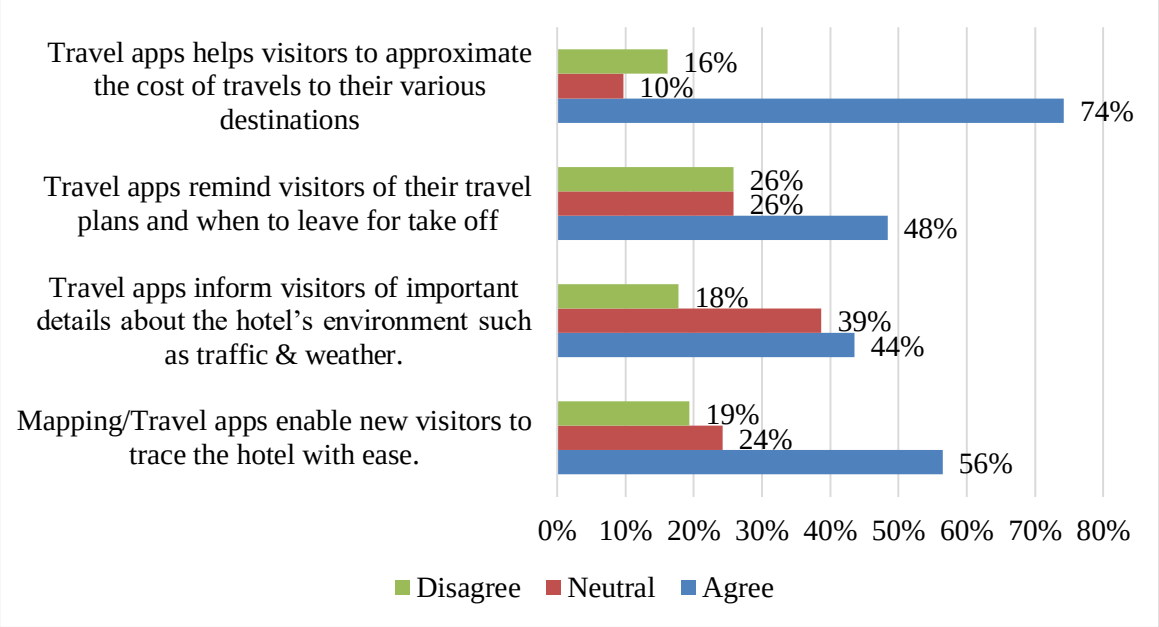

Figure 6: Use of Mapping and Travel Applications
Source: Author (2019).

The results from figure 6 depicts that Majority (74%) of respondents agreed that travel apps help visitors approximate the cost of travels to various destinations of interest. For instance, taxi apps and google maps app give cost estimates for distances one intends to cover hence helping visitors approximate actual charge they are likely to pay. Majority (48%) also agreed that travel apps reminded visitors of their travel plans and when to leave for takeoff. Perhaps this is done on the reservations date where the phone or app keeps a history of what is to be done and reminds the owner of the phone when time elapses. These findings are similar to the one presented by Buhalis and Costa (2016) in the literatures about travel apps.

Majority of 44% agreed that travel apps informed visitors of details such as weather, traffic and others. This is because map apps try to use GPS and satellite features to give the user features that would enhance their experience. The fact that 39% of the respondents were neutral on this issue indicates that a large number of the respondents did not take a position as to whether the travel apps offered to guests such things as possible weather and traffic of a destination. Fifty six percent of the respondents agreed that the travel apps enabled visitors to

trace their hotels with ease. Perhaps because the apps, using GPS technology, indicated the direction one ought to take to a give destination and in case one went a contrary way, the technology indicated.

5.0 Conclusions

The study concludes that guest service apps are useful in ensuring customer convenience, ensuring cheaper and faster check-in/booking and concierge processes as well as enhancing customer satisfaction and loyalty. Mobile wallet applications used in hotels make payment for services convenient and faster, promote payments from anywhere across the world, enhance accountability and easier and faster documentation, as well as reduce theft cases of cash as they eliminate the need to carry hard cash. Mapping and travel apps help visitors approximate the cost of travels to various destinations, remind visitors of their travel plans and takeoff times, inform visitors of environmental status like the weather and traffic condition, and enable visitors trace their hotels with ease.

6.0 Recommendations

The researcher recommends that the management and ownership of hotels should ensure they adopt and implement the use of mobile applications to offer guest services owing to the numerous benefits they have. This can be facilitated by making adequate investment in the development and/or acquisition of appropriate mobile applications for customers use. The applications should be well publicized to allow many customers to use them.

With the probable rise in the use of mobile applications to perform many hotel services, it is expected that the management of hotels will invest in developing appropriate (internal) policies and regulations governing the use of these applications to cushion the hotels from any inappropriate use that can harm operations and services.

Presently, there lacks a specific policy governing the use of mobile applications, which makes the sector of mobile technology prone to possible risks resulting from poor usage or misuse. This study, thus, recommends that government, through relevant arms, institute appropriate policies that will guide performance of the mobile phone applications sector. The policies should act towards protecting hotels from possible misuse of mobile apps technology as well as draw a course for sustainable use of the technology.

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