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ABSTRACT

The study sought to assess the effect of digital security systems on hotel market performance in 3-5-star rated hotels in Nakuru, Kenya. The research included a conceptual framework that showed the relationship between digital security systems and market performance. A descriptive research design was used to help evaluate the opinions of the target population, which included the staff and managers of the major departments within the hotels under study. Both closed and open-ended questionnaires were used for data collection. A census was done for all the managers while staff were selected using a cluster sampling technique. A total of 152 out of the 200 questionnaires that were issued were usable for the study. The data was analyzed using both descriptive and inferential statistics. The findings of the study indicated a positive correlation between the utilisation of digital security systems and market performance. The study found that access control systems exert the most significant influence on the market performance of 3-5 star rated hotels in Nakuru County compared to the other three variables under study. The study concludes that digital security systems are vital components contributing to the improvement of hotel performance. The study recommends stakeholders enforce digital security standards within the hotel sector and emphasise the importance of digital security systems to enhance guest safety. In addition, hotels should prioritise development of user-friendly systems. Further studies, as recommended by the study, can focus on the influence of digital security systems in different tourism sectors beyond hotels and include customers as the target population.

APA CITATION

CHICAGO CITATION

HARVARD CITATION

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INTRODUCTION

Digital transformation is gaining traction worldwide, with service sectors at the centre of adopting digital technology. Globally, we are in the midst of the fourth industrial revolution, which has been characterised by the emergence of new technologies like artificial intelligence, robots, the Internet of Things, virtual reality, and fifth-generation wireless technology. The hospitality business has seen substantial change throughout this time span and is still changing (Zhu et al., 2021). Hotel managers are striving to transform their old facilities into smart hotels in the modern world since these establishments serve to increase customer satisfaction, make work easier for staff members, and help owners keep costs under control (Ramgade & Kumar, 2021).

In America, hotels such as Marriott International and Hilton Honors have digitalised their operations by adopting digital technology to improve their performance (Ristova & Dimitrov, 2019). This allows visitors to register before physically arriving at the hotel, write a message to the hotel employees for special requests and use a mobile key to access the room. Guests can now communicate their needs in most hotels through smartphones rather than the hotel staff and from the comfort of their zone. This has greatly improved the performance of hotels through better experiences that lead to guest satisfaction and better management.

Africa is emerging as a prominent player in the hospitality sector as hotel technology continues to develop all over the globe. According to Taruvinga (2019), Africa is the continent that is urbanising at the fastest rate in the globe, yet hotel technology adoption is still lagging in some ways. However, the hotel sector is expanding quickly, and investors are looking to further capitalise on its potential, with some of the biggest chains in the world having announced their expansion into Africa. As a result, the continent is experiencing a speeding up in hotel technology adaptation in order to appease international clients who are used to digital hotel services. The majority of technological innovations come from beyond the boundaries of Africa, making it challenging to continually invest in these evolving technologies and hotels; therefore, they have to be selective of what they will install.

In South Africa, for example, a hotel such as Dormakaba, a dependable partner for smart and secure access solutions globally, has developed a safe, usable mobile Bluetooth Low Energy (BLE) solution for hotels. With this approach, hotel guests may conveniently avoid check-in lines and paperwork by using their mobile devices as room keys. Its simple and affordable installation results in improved hotel performance through higher guest satisfaction and enhanced guest experiences (Shackelford et al., 2017).

Kenyan hotels are not falling behind and have a diverse range of products and services to suit customers’ tastes and preferences. The hotels are characterised by elegance, quality services, ambience and class. In spite of the quality facilities and services of Hotels in Kenya, there is still high competition for market share in the Hotel industry. Due to this factor the, hotel managers in Kenya are devising strategies such as the adoption of digital technologies in order to compete effectively and seek continual improvement in hotels’ performance.

Kenya takes pride in being one of the technological powerhouses, with the hospitality industry owning up to some of the technological wealth. Kenya continues to broaden the gap between itself and its competitors through the adoption of technology, and this brings worldwide recognition to Kenya as a powerhouse for tourism.
and hospitality. 3-5 star rated hotels in Nakuru County, Kenya, have revolutionised their services by adopting of digital technology such as digital security systems. Which is one of the most desired digital amenities that guests search for in a hotel before booking a stay. Although these hotels are putting efforts to adopt digital technologies in order to compete effectively in the market, the extent to which these transformations are impacting hotels’ performance has not yet been explored, hence the need to carry out this study.

**Problem Statement**

Efforts in a variety of technological innovations are the drive to improve the effectiveness and standards of hotel services. Literature indicates that digital technological adoption in organisations is a tool to compete effectively in the market (Masoud & Basahel, 2023). To enhance market performance, hotels are commonly adopting digital security systems. The effects of these transformations are evident worldwide; however, the results of digitalisation on business performance are still debatable, with a significant gap between the importance and the usage level of hotel security measures.

Kenya is experiencing challenges in the implementation and maintenance of digital technologies in the hospitality sector due to a minimal understanding of the impacts and importance of investing in digitalisation. According to Kohli & Melville (2019), the hasn’t been much in-depth research done in academia on the link between digitalisation and corporate performance. With only a few studies on the subject, the majority of the literature on digital transformation has concentrated on the notion of digitalisation and the adoption process. Many studies have focused on digital security systems in the Kenyan context but in different sectors.

**Objective of the Study**

To assess the effect of digital security systems on hotel market performance in 3-to-5-star hotels in Nakuru County, Kenya.

**Hypothesis**

$H_0$: There is no statistically significant relationship between digital security systems and hotel market performance in 3-to-5-star rated hotels in Nakuru County, Kenya.

**THEORETICAL FRAMEWORK**

The main theory that underpinned this study was the resource-based view (RBV) theory led by Birger Wernerfelt as outlined in his 1995 article on the rationale behind companies’ differentiation in the market (Wernerfelt, 1995). This theory served as a managerial guide in identifying the strategic resources a firm can leverage to attain sustainable competitive advantage. The theory emphasises that heterogeneity in market performance stems exclusively from an organisation's resources and capabilities. RBV prompts an essential inquiry into how organisations align resources with a competitive edge through superior value creation, thereby providing opportunities for improved performance.

The RBV theory was utilised in this study to elucidate the relationship between technological innovation and performance, highlighting its role in asserting that advancements in service and process innovations within hotels often lead to improved performance.
Conceptual Framework

Figure 1: Conceptual Framework

METHODOLOGY
The study utilised a descriptive research design. According to Musembi (2021), this design enables the researcher to document, analyze, and report facts as they existed at the given time. This research design was useful in answering questions of why, where, how, and what. Such as: Where the study was being carried out, why it was being conducted, how the data was presented, and what the study was about.

Census sampling was adopted to select a study sample of all managers in the major operational departments of the 14 3 to 5 star rated hotels as per the Kenya Tourism Regulatory Authority 2018 (Korir & Muchemi, 2020). There are 4 main operational departments in a hotel, namely: Housekeeping Department, Front Office Department, Food Production (kitchen) Department, and Food and Beverage Service Department (David, 2017). Cluster sampling was also used to select a study sample from the staff. This is because hotels often have distinct departments which were considered natural clusters. In addition, the research employed a simple random sampling approach which according to Thomas (2020), is the act of choosing a subset of a population at random. This technique was employed to select elements of study from the departments ensuring each individual had an equal chance of getting selected. The list of employees for each department was provided by the human resource manager. The target population for the study was 200 respondents. The reason for selecting managers and staff as respondents is because they were in a position to explain the digital strategies that they had actually adopted in their establishment operations. Hotel managers are the ones who are directly involved with the systems, while the employees are involved directly with the customers. Both the managers and the staff were part of the target population to assist in cross-checking the information provided by both parties. Questionnaires were utilised to collect data from the respondents. A 5-point Likert scale was used to collect responses on the questionnaire, where 5 indicated strong agreement, and 1 indicated strong disagreement. Simple descriptive statistics such as mode, mean, median, frequencies, and percentages were used to analyse the primary data from questionnaires. Inferential statistics and, specifically multiple regression was also used to examine the relationship between digital security systems and market performance.

RESULTS
The study targeted a total population of 200 staff of the 3-to-5-star rated hotels in Nakuru County. In response, 152 fully completed and usable questionnaires were returned, while 48 were deemed incomplete and, therefore, excluded from the analysis. This resulted in a response rate of 76%. It is noteworthy that a response rate of 50% and above is widely considered adequate for drawing meaningful conclusions in research studies (Mugenda and Mugenda, 2003).
Therefore, the response rate achieved in this study is not only substantial but excellent for drawing meaningful conclusions.

Table 1: Response rate

<table>
<thead>
<tr>
<th>Respondent’s department</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housekeeping</td>
<td>10 38</td>
<td>31.6</td>
</tr>
<tr>
<td>Front office</td>
<td>6 17</td>
<td>15.1</td>
</tr>
<tr>
<td>Production (kitchen)</td>
<td>8 35</td>
<td>28.3</td>
</tr>
<tr>
<td>Food and beverage</td>
<td>10 28</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>152</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Respondents were distributed across different departments within their respective organisations. The departmental distribution was as follows: 31.6% of respondents belonged to the housekeeping department, 15.1% were part of the Front Office, 28.3% worked in Food Production (Kitchen), and 25.0% were associated with the Food & Beverage department. This distribution across various departments reflects the diverse roles and responsibilities of the respondents within their organisations. Analysing the responses within these departmental categories provided insights into how different departments within the tourism industry perceive and interact with digital technologies.

From the findings, it was evident that the study had a gender-diverse group of respondents. Among the respondents, 36.8% identified as male, while the majority, comprising 63.2% of the respondents, identified as female. This gender distribution provided a balanced representation of the research, enabling a comprehensive exploration of the research questions from both male and female perspectives.

The findings of the study showed that respondents started using digital technology at different points in their lives, with percentages as follows: 19.1% at the age of 20 or below, 33.6% between the ages of 21 and 29, 27.6% between the ages of 30 and 39, 15.1% between the ages of 40 and 49, and 4.6% at the age of 50 or above. This age diversity provided valuable insights into the different digital technology adoption patterns among the respondents.

It was observed from the study that respondents held varying perceptions regarding the educational level at which people are considered competent enough to use digital technologies. From the findings, 20.4% of respondents believed that competence in using digital technologies could be achieved at the KCSE level, while 34.9% thought that a diploma level of education was sufficient for digital technology competence. A smaller percentage, 2.6%, believed that competence was attained at the master's level. The majority, constituting 42.1% of the respondents, indicated that university undergraduate education was the level at which people are competent enough to use digital technologies. This diverse range of opinions on the appropriate educational level for digital technology competence can be valuable for understanding the educational dynamics related to digital technology proficiency.

Measurement of Market Performance

Table 2 outlines the findings of the study on the different perspectives of the respondents on whether they agreed or disagreed that the indicators above could be used to measure market performance. The corresponding percentages of respondents falling into each category offer valuable perspectives on the perceived importance of these indicators. Customer Satisfaction emerged as the most significant indicator, with a substantial majority of respondents (69.1%) either Agreeing or Strongly Agreeing with its relevance. This view was supported by a mean score of 3.8092, suggesting a generally favourable perception. The standard
deviation of 0.94015 indicates a relatively consistent consensus among respondents.

Table 2: Market Performance Indicators

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer satisfaction</td>
<td>152</td>
<td>3.809</td>
<td>0.940</td>
</tr>
<tr>
<td>Customer loyalty</td>
<td>152</td>
<td>3.553</td>
<td>0.968</td>
</tr>
<tr>
<td>Market share</td>
<td>152</td>
<td>3.388</td>
<td>1.042</td>
</tr>
<tr>
<td>Brand recognition</td>
<td>152</td>
<td>3.599</td>
<td>0.901</td>
</tr>
<tr>
<td>Employee satisfaction</td>
<td>152</td>
<td>3.586</td>
<td>0.945</td>
</tr>
<tr>
<td>Service quality</td>
<td>152</td>
<td>3.625</td>
<td>0.975</td>
</tr>
<tr>
<td>Competitive position</td>
<td>152</td>
<td>3.651</td>
<td>1.025</td>
</tr>
<tr>
<td>Organisational achievement</td>
<td>152</td>
<td>3.625</td>
<td>1.028</td>
</tr>
<tr>
<td>Continuous improvement</td>
<td>152</td>
<td>3.572</td>
<td>1.113</td>
</tr>
<tr>
<td>Social responsibility</td>
<td>152</td>
<td>3.638</td>
<td>1.052</td>
</tr>
</tbody>
</table>

Table 3: Digital Security Systems and Market Performance

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video surveillance systems have improved market performance</td>
<td>152</td>
<td>3.743</td>
<td>0.84176</td>
</tr>
<tr>
<td>Alarm sensor systems have improved market performance</td>
<td>152</td>
<td>3.342</td>
<td>0.97726</td>
</tr>
<tr>
<td>Sprinkler systems and carbon monoxide detectors have improved market performance</td>
<td>152</td>
<td>3.191</td>
<td>1.02119</td>
</tr>
<tr>
<td>Access control systems have improved market performance</td>
<td>152</td>
<td>3.915</td>
<td>0.91307</td>
</tr>
</tbody>
</table>

Table 3 explores the influence of digital security systems on market performance, with respondents rating these systems on a scale ranging from Strongly Disagree to Strongly Agree. The corresponding percentages of respondents in each category offer insights into their perceptions. Video Surveillance Systems were seen as instrumental by a majority of respondents, with 71.7% either Agreeing or Strongly Agreeing that they improved market performance. This positive perception was supported by a mean score of 3.7434, indicating a favourable view. The standard deviation of 0.84176 suggests a relatively consistent consensus among respondents regarding the impact of video surveillance systems.

Alarm Sensor Systems were also viewed positively, with 74.2% of respondents either agreeing or strongly agreeing that they improved market performance. The mean score of 3.3421 underscores this positive perception. The standard deviation of 0.97726 suggests some variations in respondents' viewpoints, indicating that while it's generally seen as positive, there may be differing opinions. Sprinkler Systems and Carbon Monoxide Detectors were perceived positively by a majority, with 75.6% of respondents either Agreeing or Strongly Agreeing that they improved market performance. The mean score of 3.1908 reflects this positive view. The standard deviation of 1.02119 indicates variations in the perceived impact of these systems, suggesting diverse opinions among respondents.

Access Control Systems received recognition, with 74.8% of respondents either Agreeing or Strongly Agreeing that they improved market performance. The mean score of 3.9145 emphasises this positive perception. The standard deviation of 0.91307 suggests a relatively consistent consensus, highlighting the importance of access control systems for market performance.
Table 4: Digital Security Systems Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.442a</td>
<td>0.189</td>
<td>0.184</td>
<td>0.25623</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Digital Security
b. Dependent Variable: Market Performance

In the analysis summarised in Table 4, the coefficient of determination, R-squared (R²), was calculated to be 0.189. This R-squared value suggests that approximately 18.9% of the variation in the market performance of 3-to-5-star rated hotels in Nakuru County can be attributed to digital security systems while holding all other factors constant. This result indicates a notable positive correlation between the utilisation of digital security systems and market performance. Importantly, it implies that around 81.1% of the variation remains unexplained by digital security systems, denoting the influence of other unaccounted-for variables in this context.

Table 5: Digital Security Systems Analysis of Variance

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>4.178</td>
<td>1</td>
<td>3.298</td>
<td>32.203</td>
<td>.000b</td>
</tr>
<tr>
<td>Residual</td>
<td>15.402</td>
<td>150</td>
<td>.079</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18.726</td>
<td>151</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Market Performance
b. Predictors: (Constant), Digital Security

Table 5 presents the results of the analysis of variance (ANOVA) for Digital Security Systems. The ANOVA findings indicate a significant relationship (F=32.203, P < 0.05) between Digital Security Systems and market performance. This suggests that Digital Security Systems have a notable impact on market performance in 3-5 star hotels in Nakuru County.

Table 6: Digital Security Systems Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1 (Constant)</td>
<td>5.162</td>
<td>0.099</td>
<td></td>
<td>50.173</td>
</tr>
<tr>
<td>Digital Security</td>
<td>0.523</td>
<td>0.087</td>
<td>0.409</td>
<td>7.086</td>
</tr>
</tbody>
</table>

From Table 6, Digital Security Systems demonstrated a substantial and positive impact on Market Performance (β = 0.409, p < 0.05). Using unstandardised coefficients, the derived simple linear regression model equation is as follows: Market Performance (Y) = 5.162 + 0.523 X1, where 5.162 represents the constant, 0.523 signifies the unstandardised coefficient for Digital Security Systems, and e represents the error term. This reveals that Digital Security Systems exert a notable and statistically significant influence on the Market Performance of 3-to-5-star rated hotels in Nakuru County.

DISCUSSION

Based on the findings of this study, the assessment of digital security systems and their perceived influence on market performance in 3-to-5-star rated hotels in Nakuru County yielded valuable insights. Video Surveillance Systems emerged as a pivotal aspect, with a significant majority of respondents concurring that they had a positive impact on market performance. This consensus was reinforced by a mean score of 3.7434, reflecting a generally favourable view among respondents. Similarly, Alarm Sensor Systems garnered positive feedback, with a substantial proportion of respondents expressing agreement regarding their favourable effect on market
performance. The mean score of 3.3421 underscores this positive perception. Sprinkler Systems and Carbon Monoxide Detectors were also perceived positively by the majority of respondents, with a notable percentage agreeing on their positive influence on market performance. The mean score of 3.1908 supports this view. Access Control Systems found recognition, with a considerable percentage of respondents expressing agreement about their positive impact on market performance, as emphasised by the mean score of 3.9145. Inferential statistics further aligned with these findings. The coefficient of determination, R-squared ($R^2$), indicated that approximately 18.9% of the variation in the market performance of 3-to-5-star rated hotels in Nakuru County could be attributed to digital security systems when holding all other factors constant. This underscores a notable positive correlation between digital security systems and market performance.

Based on the findings of this study, the assessment of digital security systems in 3-to-5-star rated hotels in Nakuru County aligns with the findings of various researchers in the field. Anichiti et al. (2021) underscored the importance of security in influencing customers' choices of accommodation, highlighting that clients are willing to pay premium prices for enhanced security. This perspective resonates with the positive perception of Video Surveillance Systems (VVS) in the study, where the majority of respondents agreed on their positive impact on market performance. VVS not only helps guests feel safe but also contributes to building customer loyalty, aligning with the findings (Pengfei, 2018).

Ghazi (2016) highlighted the gap between the importance and usage of hotel security measures, emphasising the need for greater attention to safety and security systems. The study's recognition of the effectiveness of Alarm Sensor Systems corresponds to Ghazi's emphasis on the priority of safety and security, as these systems provide early warnings and enhance customer satisfaction by protecting against intruders.

Furthermore, Anuar et al. (2019) emphasised the significance of safety and security practices, particularly systems like Sprinkler Systems and Carbon Monoxide Detectors, in controlling fire outbreaks. The study's findings support the notion that addressing safety and security features may contribute to positive guest assessments and indirectly enhance market performance by attracting a larger market share through customer satisfaction.

The study's recognition of the importance of Access Control Systems aligns with Ahmad et al.'s (2019) recommendation that such systems are crucial for ensuring the safety of hotel entrances. Access control systems contribute to customer satisfaction, as unauthorised access is restricted, contributing to overall safety and security, as Ghazi argued.

CONCLUSION

Based on the research findings, the study concluded that digital security systems significantly influence the market performance of 3-to-5 star rated hotels in Nakuru County. Key elements such as Video Surveillance Systems, Alarm Sensor Systems, Sprinkler Systems, Carbon Monoxide Detectors, and Access Control Systems were identified as vital components contributing to this improvement. These digital security systems play a crucial role in ensuring the safety and well-being of guests and staff, ultimately enhancing the overall market performance of these hotels.

Recommendations

Based on the outcomes and conclusion of the study, the research recommends the following:

Policy Recommendations

It is crucial for policymakers and stakeholders to enforce stringent digital security standards within the hotel sector. Emphasise the importance of video surveillance systems, alarm sensor systems, and access control systems to enhance guest safety and, consequently, improve market performance. They should also provide support and incentives...
for hotels to adopt advanced digital security systems to ensure effective management.

**Recommendations for Practice**

To cater for the evolving needs of travellers and enhance the overall guest experience, hotels should prioritise the development and improvement of user-friendly digital security applications that provide comprehensive information about hotel amenities.

**Recommendations for Further Research**

The study also recommends academicians conduct similar studies in various geographical areas and include customers as respondents to provide a broader perspective and valuable insight into the impact of digital marketing systems on market performance. Further studies can focus on the influence of digital reservation systems in different tourism sectors beyond hotels.

**REFERENCES**


