Technology Orientation and Sustained Competitive Advantage in Star-Rated Hotels in Kenya

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Abstract

Luxury hotels face an increasingly complex environment that calls for ingenuity in sustaining competitive advantage. This paper examinesthe influence of technology orientation on sustained competitive advantage in four- and five-star hotels in Kenya. The study was anchored on the resourcebased viewdue to its support for sustained competitive advantage and internal resources in highly competitive environments. The study followed the positivism research paradigm and applied a descriptive correlational research design. The sample comprised 283 senior managers and a five-point Likert scale questionnaire was used to collect data. Structural Equation Modelling was used to analyze structural relationships and test hypothesis. The results established that technology orientation had a positive and significant influence ($p<0.05$) on sustained competitive advantagein the operations of four- and five-star hotels. The study concluded that constantly and creatively upgrading technology standards for front desk, reservations and in-room amenities enhanced technology orientation. The study has implications for industry stakeholders and policymakers toinvest in research and development, acquisition of new technology and application of the latest technologies.

Keywords: Four- and Five-Star Hotels, Sustained Competitive Advantage, Technology Orientation

Introduction

In today's dynamic, complex and fiercely competitive operating environment, gaining and sustaining a competitive advantage is crucial for organizational success (Barney, 1991). An organization gains a sustained competitive advantage when it has capabilities and resources which are difficult for competitors to replicate. The current competitive and turbulent economic environment that the global hotel sector is experiencing calls for a dynamic strategic orientation nowmore than ever (Ho, 2014). One of the vital strategic orientations hypothesized as critical for competitiveness in the hotel sector is technology orientation (Law & Jogaratnam, 2005). Hakala (2011) describes technology orientation as an organization's tendency to use new skills and know-how in its creations and processes. Mandal (2017) views technology orientation as incorporating product, service, innovation and production orientations.

Gatignon and Xuereb (1997) define technology orientation as the ability and will to acquire a substantial technological background and use it in the development of new products. In their view, having a technology orientation entails committing to research and development (R&D), acquisition of new technologies and application of the latest technologies. According to Ali et al. (2016), technology-oriented firms can create new technical solutions and offer advanced

products to meet customer needs due to their commitment to R&D and application of latest technologies.

According to Sirirak et al. (2011), hotel information and communications technology can be categorized according to the main hotel operational domain categories that include room division, food and beverages, general/back office and in-room ICT. Hotels that adopt a technology orientation can set themselves apart from other industry players and survive in a cut throat environment (Law et al., 2013). At the same time, if hotels do not adopt a technology orientation as a means to attain and sustain a competitive advantage, achieving better performance may prove to be a challenge (Nain, 2018).

The emphasis of the study was on the four- and five-star hotel categories, which are particularly significant since these ratings are a reflection of consistently high-quality service and they also support high end tourism which is crucial to the hospitality sector's economic contribution to the country. However, while four- and five-star hotels are the market leaders, they face diverse challenges in sustaining their competitive advantage, leading to loss of market share, low profits, low customer satisfaction and eventual closure for some.

Statement of the Problem

Hotels in Kenya experienced a low occupancy rate at 31-34% between 2017 and 2019 (KNBS, 2019;2021) which compares poorly to hotels in Italy at an average 72% and Spain at 86% occupancy rate for the same period (Lock, 2021). Available statistics indicate that luxury hotels need an occupancy rate of 30–40% to break even (Eisen & Resco, 2020). Additionally, Wachira and Kandie (2021) and constant press articles reported the closure of several hotels between 2019 and 2021 due to financial distress. Several hotels in Kenya have turned to ownership changes to avoid foreclosure owing to their massive debt loads, involving both individual properties and hotel groups (Onyango & Ngahu, 2018). There are limited studies on technology orientation in four- and five-star hotels in Kenya.

Technology orientation in an organization reflects the philosophy of "technological-push," a situation wherein consumers prefer technologically superior products and services (Zhou et al., 2005). Four- and five-star hotels face an ever-rising demand for technological innovations from their clients (Nain, 2018). Nain (2018) found that digital connection, monitoring digital channels and social media reputation management is a constraint in the hotel industry. The motivation of this study was support hotel establishments to sustain competitive advantage through application of technology orientation constructs.

Study Hypothesis

The study tested the following null hypothesis:

H_0: Technology orientation has no significant influence on sustained competitive advantage in four- and five-star hotels in Kenya.

Literature Review

Theoretical Review

Resource Based View (RBV) advanced by Wernerfelt (1984) and Barney (1991) focuses on the internal assessment of resource disparities inside a firm to explain how such disparitieslead tosustained competitive advantage. Resource Based View (RBV) views organizations as either owning intangible or physical assets that they utilize to enable them operate and compete in

the market (Caves, 1980). Barney (1991) argues that the collection of distinctive competencies and resources that the organization controls determineits performance and competitiveness relative to rivals. Further, the study defines capabilities as the ability of an organization to arrange and reorganize its resources, including technology orientation, in novel and effective ways to gain a competitive edge over rivals. Thus, dynamic capabilities or strategic practices allow managers to change their resource base by adding, subtracting, integrating and recombining resources to create new value-adding resources and capabilities (Teece et al., 1997).

For a resource to become a factor of sustained competitive advantage, it should be valued, unusual or scarce, inimitable or imperfectly marketable and non-substitutable or difficult to replicate (VRIN), according to Barney (1991). Moreover, such a factor should be relatively immobile and heterogeneous. Kocak, Carsrud and Oflazoglu (2016) argue that since technological capability is a major component of a firm's knowledge base, technology orientation can be a source of competitive advantage in accordance to RBV and dynamic capabilities approach. Consequently, a firm's investments in research and development, should increase the number and quality of innovations coming from the firm. In this study, technology orientation, characterized by a high commitment to R&D, applications of the latest technologies and acquisition of new technologies is both a tangible and an intangible VRIN resource that may result in achieving and maintaining a competitive advantage.

Conceptualization of the Study

Adirect linear relationship between technology orientation and sustained competitive advantage in four- and five-star hotels in Kenya was hypothesized. Figure 1 illustrates the conceptual framework that was used to guide the research.

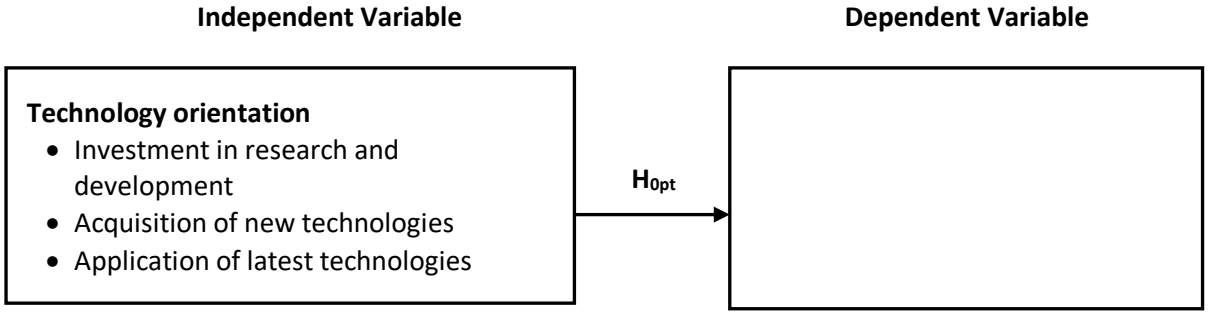


Figure 2: Conceptual Framework

Technology orientation can be assessed through the relative levels of investment in R&D, as well as the levels of acquisition of new technologies and application of the latest technologies (Gatignon & Xuereb, 1997; Mu & Di Benedetto, 2011; Yang, Chen, & Wang, 2012). Commitment to R&D entails investment in R&D activities, the ability to accurately predict future technological trends, closely monitoring up-to-date technological changes and developments and taking a leading position in establishing technology standards (Mu & Di Benedetto, 2011). Acquisition of new technologies entails leading the industry in upgrading technology standards, frequent staff training to improve technical skills, possessing strong technical skills in various fields and having a consistent budget for new technologies (Zhou et al., 2005). Application of the latest technologies involves possessing a competitive and

powerful technology strategy, using new technologies in problem-solving, strong capabilities to integrate external technological resources with in-house resources and attracting and motivating talented technology experts (Gatignon & Xuereb, 1997).

The benefit a firm receives from employing an enrichment strategy that is not being executed simultaneously by any present or potential rivals is referred to as sustained competitive advantage (Barney, 1991). Sustained competitive advantagein this studyis measured through growing market share, sustained profits, differentiation and customer satisfaction. Profit, being defined as an organization's total revenue less its total expenses per given time period, is the most widespread component of performance in hotel studies (Wadongo et al., 2010; Han, 2012). Hotel market share is the percentage of a market accounted for by a hotel establishmentwithin the hotel market in which it operates (Landman, 2017). Differentiation is the strategy that creates something tangible or intangible and that is perceived as unique by at least one set of customers (Porter, 1980). Customer satisfaction is defined as the feeling clients get when their expectations regarding specific products or services are met and exceeded (Baranovskaia, 2019).

Empirical Review

According to Buhalis (2019), technology has transformed the tourism industry and defined the competitiveness and strategy of tourism-related organizations and destinations. A study by Law et al. (2013) in the hospitality industry found that information technology is increasingly becoming a strategic asset for hospitality and tourism businesses to improve organizational performance, customer satisfaction and strategic competitiveness. Kazandzhieva, Galina and Filipova (2018) found that technological innovations had a significant impact on the performance of traditional hotel services and that the hospitality industry was particularly affected by the technology-driven transformation that was affecting most industries. Some authors have indicated that hotel managers need to act upon online customer reviews to change their marketing strategies and improve their services (Molinillo et al., 2016).

In the United States (US), Shin, Perdue and Kang (2019) established that web-based integrative platforms enhanced information accessibility resulting in more confident and informed service offerings, while providing shorter transaction time and improving efficiency and productivity. Bahar et al. (2019) established that technology in hotels is dynamic and hotels frequently invest in ICT development by upgrading Wi-Fi systems, installing digital screensand adopting electronic customer relations management. This led to increased guest satisfaction and increased competitiveness due to decreased costs, decreased energy consumption and reduced number of employees.

A number of technology orientation studies have shown the positive impact of technology on firm output. Baniata and Alryalet (2017) found that technology orientation had a positive and significant influence on sustainable competitive advantage in industrial companies in Jordan. The study by Ali et al. (2020) found that technology orientation had a significant positive effect on the performance of SMEs in Saudi Arabia. Khattab and Elsayed (2018) found a significant and positive relationship between technology orientation and organizational performance among tourism companies and hotel operators in Egypt. Kasim and Altinay (2016) found that technology orientation had a positive effect on firm growth among hotels in Malaysia. In addition, Nzisa et al. (2021) found that technology readiness significantly influenced the competitiveness of star-rated hotels in Kenya.

Methodology

Research Philosophy and Design

This study adopted the positivism research philosophy that involves working with an observable social reality to produce law-like generalizations, with the emphasis being on a highly structured methodology to facilitate replication (Saunders et al. 2016). The research was a cross-sectional study that applied a descriptive correlational design. It focused on a sample of senior managers from different hotel establishments in different regions as the target respondents and made inferences based on the sample.

Target Population and Sampling Technique

The target population for the study was 640 senior managers from 80 operational four- and five-star hotels that were rated by the Kenya Tourism Regulatory Authority. The study used multi-stage sampling where the first stage was a census of all the operational four- and five-star hotels in Kenya. In the second stage, a stratified sampling technique was used to select senior managers from each of the two strata (four-star and five-star hotels), in proportion to the number of hotels in each stratum. The sample size for the study was 283 senior managers which was computed from the target population using the Yamane (1967) formula and the adequately completed questionnaires were 247 (87%).

Data Collection and Data Analysis Methods

A structured five-point Likert questionnaire was developed using established constructs and items from technology orientation literature. The tool was pretested for ambiguity, reliability and validity. Following improvement, the questionnaire was administered to senior managers in the hotels through drop-and-pick method. The resultant data was analyzed using descriptive and inferential statistics, while structural equation modeling (SEM) was utilized to examine the influence of technology orientation on sustained competitive advantage. The Analysis of Moment Structures (AMOS) software version 26 was used for SEM.

Results and Discussions

A total of 247 (87%) respondentsfrom 62 hotels adequately responded to the questionnaire. Approximately 58.7% of the respondents were male while 41.3% were female. 54.2% of the hotels had less than 100 rooms while 45.8% had more than 100 rooms.26.7% of the hotels were operational for less than 5 years, 46.6% had been in operation for 5-15 years while 26.7% had been operational for a more than 15years. Results indicated reliability (Composite reliability >0.7) and validity (AVEs>0.5) of the instruments.

Descriptive Statistics for Technology Orientation

The three study constructs under the technology orientation variable were; investment in research and development, acquisition of new technologies and application of the latest technologies. Each construct had four indicators that were scored using a five-point Likert scale to determine the extent of technology orientation practices in four- and five-star hotels. The analysis was accomplished by computing the means and standard deviations of the indicators of technology orientation. The findings are provided in Table 1.

Table 1: Descriptive Statistics for Technology Orientation

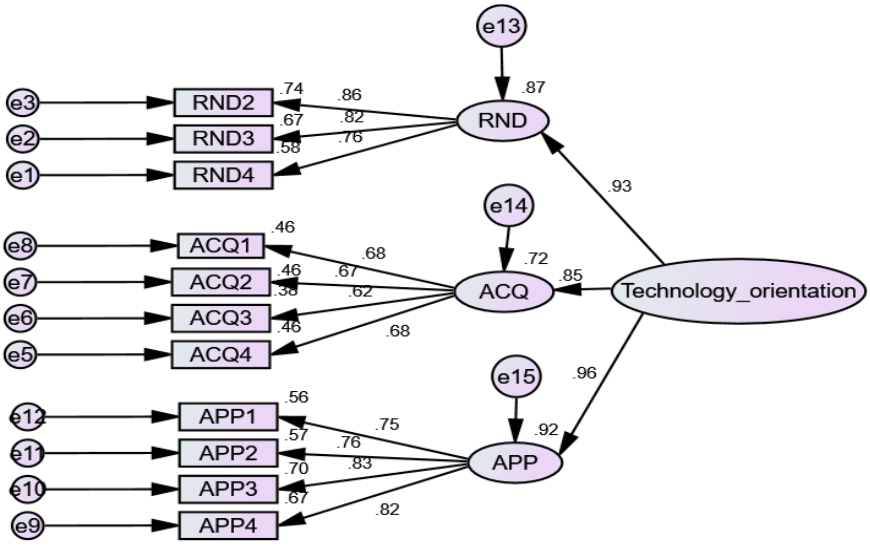
CODE	Indicators of technology orientation (n=247)	Mean	Std. Deviation
RND1	Our hotel has a strong organization technology climate	4.04	.753
RND2	This hotel has invested heavily in technology enabled front desk, booking and reservation systems	4.10	.753
RND3	This hotel has invested heavily in technology enabled in-room technology amenities	4.25	.823
RND4	Our hotel monitors up-to-date technological changes and developments closely	4.21	.835
ACQ1	Our hotel is one of the leaders in our industry in upgrading technology standards	4.17	.695
ACQ2	Our hotel improves technical skills of employees through frequent training programs	4.20	.642
ACQ3	Our hotel has strong technological skills in various fields	4.24	.673
ACQ4	Our hotel has a consistent budget for new technologies	4.11	.714
APP1	Our hotel has a competitive and powerful technology strategy	4.27	.819
APP2	Our hotel is skillful in applying new technologies to problem solving	4.23	.797
APP3	The products and/or services developed by the hotel are very creative	4.18	.803
APP4	Our hotel attracts and motivates talented technology experts	4.26	.883

RND = investment in research and development; ACQ = acquisition of new technologies; APP = application of the latest technologies

The findings showed that respondents on average agreed (3.41-4.20), or strongly agreed (4.21-5.0) with all the technology construct statements since all the means were between 4.04 and 4.27. The data also shows agreement around the means as all of the standard deviations were below 1. The findings imply that the four- and five-star hotels were committed to the technology orientation constructs. Application of the latest technology had the highest grand mean, followed by acquisition of new technologies.

Confirmatory Factor Analysis for Technology Orientation

Confirmatory Factor Analysis (CFA) was used to determine the extent to which the observed data matched the theoretically-driven model. The path diagram displayed in Figure 1 shows the path model for the technology orientation variable along with the CFA model fit indices.



$\chi 2 = 99.598$; $\chi 2/df = 2.429$; DF=41; CFI=0.959; GFI=0.937; RMSEA=0.051. [Investment in research and development (RND); acquisition of new technologies (ACQ); application of latest technologies (APP)]

Figure 2: Model Fit for Technology Orientation

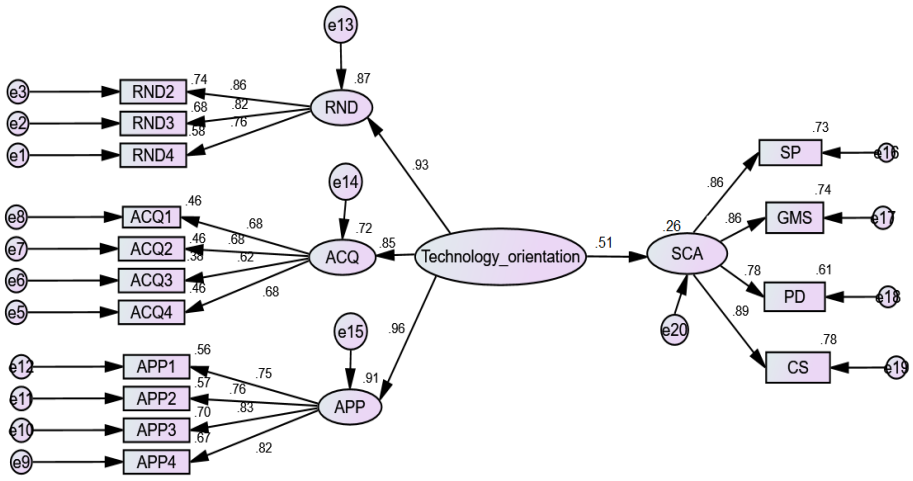
A summary of the CFA model fit indices for the technology orientation variable are shown on Figure 2. The Chi-square value/df was below 3; comparative fit index (CFI)and goodness of fit index (GFI) were above 0.9; while the root mean square error of approximation (RMSEA) was below 0.08, all indicating that the model fitted the data effectively. To enhance model fitness, one indicator under the R&D construct that had regression weight below 0.5 was dropped. The indicator that was dropped was "Our hotel has a strong organization technology climate."

The multiple correlations of the three constructs indicated strong relationships and loadings in the direction of technology orientation. Application of latest technology explained 92% (R^2 = 0.92) of the variance in technology orientation. Within this construct, "The products and services developed by this hotel are very creative" had the highest regression weight at 0.83 while, "Our hotel has a competitive and powerful technology strategy" had the lowest regression weight at 0.75.

Investment in R&D had a correlation of 0.87, which implies that investment in R&D explains 87% of the variance in technology orientation. Within investment in R&D, the item "This hotel has invested heavily in technology enabled front desk, booking and reservation systems" had the highest regression weight at 0.86 while the item "Our hotel monitors up-to-date technological changes and developments closely" had the lowest regression weight at 0.76. Likewise, "acquisition of newest technologies" construct explained 72% (R^2=0.72) of the variance in technology orientation, other factors held constant. Two items, "Our hotel has a consistent budget for new technologies" and "Our hotel is one of the leaders in our industry in upgrading technology standards" had the highest regression weight at 0.68. The item, "Our hotel has strong technological skills in various fields" had the lowest regression weight at 0.62.

SEM of Technology Orientation on Sustained Competitive Advantage

Various diagnostic tests to assess the assumptions of SEM were conducted pre and post fitting the SEM. The diagnostic tests conducted included the test for outliers, linearity test, the test of normality of residualsand the test of heteroscedasticity. All the testsconducted indicated that thebasic regression assumptions were satisfied since linearity, homogeneity and normality of residuals were proven and outliers were dropped. The SEM pathmodel to evaluate the influence of technology orientation on sustained competitive advantage of four- and five-star hotels in Kenya was hence fitted and the findings are shown on Figure 3.



[Investment in research and development (RND); acquisition of new technologies (ACQ); application of latest technologies (APP)]

Figure 3: SEM for Influence of Technology Orientation on Sustained Competitive Advantage

From the findings in Figure 3, technology orientation had a moderate explanatory power as it explained 26% ($r^2 = 0.26$) of the variation in sustained competitive advantage among four- and five-star hotels in Kenya. The remaining 74% was explained by factors not included in the model. The fitness of the SEM model was assessed to determine its efficiency and reliability. CFI was 0.95, GFI was 0.93, while RMSEA was 0.06, which were all within the acceptable threshold. The regression estimates are shownin Table 2.

Table 2: Regression Coefficients for the Influence of Technology Orientation on Sustainable Competitive Advantage

Relationship	Estimate	Standardized Estimate (Beta)	S.E	CR	P
Intercept	0.48		.17	2.81	0.01
RND <---Technology orientation	1.00	.93			
ACQ <---Technology orientation	.69	.85	.08	8.69	0.00
APP <---Technology orientation	1.17	.95	.11	10.73	0.00
SCA <---Technology orientation	.89	.51	.13	6.72	0.00

The model derived from the analysis was;

$$SCA = 0.48 + 0.51\,Technology\ orientation + \varepsilon$$

The findings presented in Table 2 show that the standardized regression weight of the fitted SEM model from technology orientation to sustained competitive advantage is 0.51. This implies that a unit change in technology orientation enhances sustained competitive advantage by 0.51. Furthermore, the findings show that technology orientation had a positive and statistically significant influence on sustained competitive advantage at5% significance level (Beta = 0.51, CR=6.72, $p < 0.05$). As a result, the null hypothesis, H_0: Technology orientation has no significant influence on sustainedcompetitive advantage in four- and five-star hotels in Kenya, was rejected and the alternative hypothesis is supported.

Discussion

The study results showed that technology orientation had a significant positive influence on sustained competitive advantage in four- and five-star hotels in Kenya. These findings support the findings by Nzisa, Gitahi and Kiprop (2021) who found that technology readiness significantly influenced the competitiveness of star-rated hotels in Kenya. Similarly, Khattab and Elsayed (2018) focused on information and operational technology in hotels and found a significant and positive relationship between technology orientation on the one hand, and organizational performance and competitive advantage on the other. Likewise, Rezazadeh, Karami and Karami (2016); Baniata and Alryalet (2017); Abdulrab et al. (2021)and Ali, Hilman and Gorondutse (2020) found a positive relationship between technology orientation and firm performance in various countries.The finding that technology orientation significantly influences sustained competitive advantage is consistent with RBV. The theory posits that an organization possesses tangible and intangible assets that can be used to implement strategies that lead to efficiency and effectiveness (Barney, 1991) and technology orientation is a strong intangible resource and dynamic capability that influences sustained competitive advantage.

In contrast, a few studies have found a negative relationship between technology orientation and various business outcomes. Mehmood and Zafar (2019) and Al-Ansaari, Bederr and Chen (2015) found a negative relationship between technology orientation and business performance. Serafim and Verissimo (2021) found a positive but nonsignificant effect of technology orientation on innovation.

Conclusions

The study concludes that adopting a technology orientation is vital for sustained competitive advantage in four- and five-star hotels in Kenya. Commitment from hotel stakeholders and senior managers to acquire and apply the latest technologies is vital to attaining and sustaining competitive advantage in the hotel sector. This includes setting aside a consistent budget for acquiring and operating new technologies. The study concludes that the leading technology orientation factors that are key in sustaining competitive advantage in four and five-star hotels are investing in technology enabled in-room technology amenities, investing heavily in technology enabled front desk, booking and reservation systems, upgrading technology standards and providing creative products and services. The study also concludes that four and five-star hotels in Kenya should regularly monitor the environment for new technological changes in their industry and consequently invest in new technologies. In addition, attracting talented experts and training staff in the use of new products and services would enhance technology orientation.

Recommendations and Areas for Further Study

Technology orientation was found to have a positive and significant influence on sustained competitive advantage in four- and five-star hotels. Hotel operators should therefore emphasize the three technology orientation constructs; investment in research and development, application of latest technologies and acquisition of new technologies. The key factors the hotel management should focus on include a technology-enabled front desk, superior booking, and reservation systems, closely/ monitoring up-to-date technological changes, and investing heavily in technology-enabled in-room technology amenities. There is a need for the hotel operators to investigate and address the issues limiting a strong organizational technology climate in hotels. The study further recommends that policymakers should strengthen hotel research and development, ICT policy and improve security and telecommunications infrastructure, with a focus on non-town hotels. There is a need to monitor up-to-date technological changes and to also improve the technical skills of hotel workers and potential employees through subsidized training programs. There is need for the hotels to consistently set aside budgets for enhancing technology through research and development, attracting talented experts and continuously training staff in the use of new products and services.

While this study provides valuable evidence on the influence of technology orientation on competitive advantage in four- and five-star hotels, there are still gaps that need further investigation. First, this study was cross-sectional and should therefore be complemented by longitudinal studies. This will help to consolidate knowledge on the fast-pacedtechnology orientation dynamics in the hotel industry. Secondly, the study focused on four- and five-star hotels which make up a small percentage of the hotels in Kenya. A study on lower-rated hotels andthe popular alternative vacation home rentalssectorwould enrich the knowledge on the influence of technology orientation on sustained competitive advantage in the hospitality sector. In addition, the study focused on the hotel industry alone, making it difficult to generalizeon technology orientation among other industries in the region. Hence, studies addressing the relationship between technology orientation and sustained competitive advantage are recommended for other industries, both hospitality and non-hospitality.

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