

The Influence of Information Communication Technology on the Performance of Rated Hotels in Uasin Gishu County, Kenya.

Lydia Lagat ¹, Dr. Rael Mandago², Prof. Kennedy Ntabo Otiso³

Department of Business Administration and Management Science, School of Business, Koitaleel Samoei University College (A Constituent College of University of Nairobi).

DOI: <https://doi.org/10.47772/IJRISS.2026.100700170>

Received: 08 July 2026; Accepted: 13 July 2026; Published: 28 July 2026

ABSTRACT

Rated hotels and in general hospitality industry has grown increasingly competitive, making it important for hotels to understand how strategic planning, information technology, and customer relationship management influence their performance. This study determines the influence of information communication technology on the performance of rated hotels in Uasin Gishu County, Kenya. The Guiding theory Dynamic Capabilities theory. A mixed-method research design was applied, drawing data from a census of 144 employees working in various managerial positions within rated hotels in the county. Data were collected by means of structured questionnaires whereas piloting done in Trans Nzoia County to enhance the instrument's reliability. Qualitative together with quantitative analytical techniques were applied. The study adopted an explanatory sequential mixed-methods design. Quantitative data were collected using structured questionnaires, while qualitative data were obtained through semi-structured interviews to explain the quantitative findings. Descriptive statistics summarized the views of respondents, while there was utilization of Pearson's correlation besides multiple regression analysis were used. Results showed that ICT (Mean = 3.84, SD = 0.88) was found to be widely applied across the sampled hotels. Pearson correlation analysis revealed a strong positive relationship between ICT and hotel performance ($r = 0.703$, $p < 0.001$). Regression analysis further showed that ICT had a positive and statistically significant effect on hotel performance ($\beta = 0.341$, $p < 0.001$), indicating that greater adoption of ICT improves the performance of rated hotels. The qualitative findings supported the quantitative results by showing that ICT enhanced service delivery, operational efficiency, communication, and customer satisfaction. The study concludes that ICT is a strategic resource that enhances the performance of rated hotels. The findings recommend continued investment in digital technologies to improve operational efficiency, customer experience, and long-term competitiveness. The study concludes that hotels that consistently apply or embrace ICT solutions.

Key words: Information Communication Technology; performance of rated hotels.

INTRODUCTION

The adoption of digital gears for instance property management systems, online reservation elements in addition to data analytics have significantly transformed the way hotels deliver services and coordinate their day-to-day operations. Technology enhances efficiency, supports personalized service, and improves revenue decisions. Information and communication technology (ICT) has become a key resource in the hospitality industry by transforming the way hotels manage their operations and deliver services. Hotels increasingly use ICT applications to support reservations, customer relationship management, revenue management, communication, and other operational activities. Research shows that ICT has become an integral component of hotel management because it enhances efficiency, facilitates information sharing, and strengthens interactions between hotels and their customers (Law et al., 2019).

The increasing digitalization of the hospitality industry has also encouraged hotels to adopt interconnected technologies that improve operational flexibility and decision making. Smart hospitality technologies, cloud

computing, and integrated information systems enable hotels to coordinate internal functions, personalize guest services, and improve business intelligence for better organizational performance (Buhalis & Leung, 2018).

Although hotels continue to invest heavily in ICT, evidence suggests that technology alone does not automatically improve organizational performance. The contribution of ICT depends on how effectively technologies are integrated into hotel operations and strategic decision making. Consequently, researchers continue to examine the relationship between ICT adoption and hotel performance to better understand how technology creates value within hospitality organizations (Ezzaouia & Bulchand-Gidumal, 2021).

Problem statement

Information and communication technology (ICT) has become an important driver of competitiveness in the hospitality industry. Hotels increasingly rely on digital technologies such as online reservation systems, property management systems, digital payment platforms, customer relationship management systems, and online marketing to improve service delivery and operational efficiency. These technologies also help hotels reach wider markets, enhance guest experiences, and make timely management decisions.

In spite of the growing use of ICT, many hotels continue to experience operational challenges, inconsistent occupancy rates, fluctuating revenues, and increasing customer expectations. The expected performance gains from ICT investments have therefore not been fully realized in many hospitality establishments. This raises concerns about whether hotels are effectively adopting and utilizing ICT to improve their overall performance.

Previous studies have shown that ICT can positively influence hotel performance through improved bookings, operational efficiency, and customer satisfaction. However, most of these studies have been conducted in major tourism destinations such as Nairobi, Mombasa, and the Kenyan coast. In addition, many studies have focused on individual ICT applications such as online reservation systems, digital marketing, or property management systems rather than examining ICT as a broader strategic capability. Consequently, empirical evidence on the influence of ICT on the performance of rated hotels in Uasin Gishu County remains limited.

This study therefore sought to determine the influence of information and communication technology on the performance of rated hotels in Uasin Gishu County, Kenya. The findings provide evidence that can guide hotel managers in making informed decisions on ICT investment and utilization to improve organizational performance.

Research objectives

To determine the influence of information communication technology on the performance of rated hotels in Uasin Gishu County, Kenya.

Hypotheses

H₀₄: Information communication technology has no statistically significant influence on financial performance of rated hotels in Uasin Gishu County.

LITERATURE REVIEW

Internet-based reservation systems impacts on hotels operations and performance in Nairobi and Mombasa was examined by Law et al. (2020), using questionnaires and scheduled interviews for data collection. The study found that hotels integrated with OTAs such as Booking.com and Expedia experienced booking increases of between 20% and 30%, which translated into higher RevPAR. The adoption of real-time reservation systems also minimized booking errors and enhanced room occupancy levels by approximately 15%, especially during peak periods. In contrast, hotels of smaller size with limited presence on OTAs faced reduced online visibility and consequently recorded lower occupancy rates of about 50% to 60%, compared to 75% to

80% among hotels with strong OTA linkages. The study surveyed 55 star-rated hotels and applied regression analysis in examining the link between OTA use and its effect on financial performance.

Conversely, Ezzaouia, & Bulchand-Gidumal (2021) examined the contribution of digital marketing to hotel performance along the Kenyan coast, focusing on Mombasa and Diani, using a blend of qualitative in addition to quantitative research designs. Their findings showed that hotels that actively engage with social media platforms, alongside search engine optimization (SEO), achieved a 25% increase in guest inquiries, with targeted campaigns converting between 10% and 15% of inquiries into actual bookings. Digital marketing strategies further enabled hotels to attract niche segments, including adventure tourists and event planners, leading to improvements in average daily rates (ADR) of between 8% and 12%. However, the absence of digital marketing skills among smaller hotels limited their competitive capacity, resulting in reduced market share. A mixed-methods style involving interviews with hotel managers and analysis of web analytics data from 40 hotels was applied.

An investigation by Buhalis and Leung (2018) about property management systems (PMS) influence on operational performance in Kenyan hotels using a quantitative approach supported by descriptive statistical analysis. The study revealed that hotels utilizing PMS platforms such as Opera and Cloudbeds significantly improved operational efficiency, with check-in and check-out times reduced by about 50%, leading to higher guest satisfaction ratings ranging from 4.0 to 4.3 on online review portals. Automated billing besides inventory control systems further lowered operational costs by 10% to 15% by reducing human errors and labour demands.

These establishments encounter distinct challenges in adopting information and communication technologies, including limited financial resources and unreliable internet connectivity. There is also limited empirical work on affordable and scalable ICT solutions suitable for micro-hotels. Despite the fact that technologies such as OTAs as well as PMS have received considerable attention, research on advanced innovations including artificial intelligence applications like chatbots, Internet of Things solutions such as smart rooms, and blockchain-based payment systems remains minimal within the Kenyan context. As international competitors increasingly adopt these technologies, Kenyan hotels risk falling behind. Furthermore, the predominance of cross-sectional study designs restricts understanding of the long-term returns of ICT investments, highlighting the need for longitudinal research to capture sustained performance impacts in Kenya's dynamic tourism market.

Previous studies agree that ICT improves hotel performance. However, they differ in the technologies examined and the study settings. Most focused on online booking systems, digital marketing, or property management systems instead of ICT as a whole. In addition, many studies were conducted in major tourism destinations, with little attention given to counties such as Uasin Gishu. This creates a knowledge gap that the present study sought to address.

THEORETICAL REVIEW

Teece et al. (1997) advanced the Dynamic Capabilities Theory, which extends RBV's by focusing on how firms respond to rapidly changing environments. The theory emphasizes a firm's ability in continuously integrating, reconfiguring besides renewing both internal as well as external competencies. Dissimilar from inert resources, dynamic capabilities are entrenched in organizational routines and processes that support ongoing innovation in addition to sustained competitive advantage over time. Innovation is a central element of dynamic capabilities. Through strategic planning, rated hotels can identify opportunities to introduce new services, adopt digital solutions such as online or self-service check-in systems, and improve operational efficiency through initiatives like energy-saving technologies. In a competitive setting such as Uasin Gishu County, where differentiation is increasingly important, strategic planning can also guide hotels in creating distinctive client experiences linked to local culture, sports, or community events. From this perspective, the study examines whether innovation driven by strategic planning, viewed as a dynamic capability, contributes to improved performance outcomes such as client satisfaction and revenue growth (Gamage et al., 2020).

Despite its relevance, the Dynamic Capabilities Theory has faced criticism for its abstract nature, particularly concepts such as “sensing” and “seizing,” deficient of precise operational definitions (Eriksson, 2022). It makes empirical application challenging, especially when attempting to distinguish between routine operational activities and transformative capabilities, a concern that is evident in ICT-focused hotel studies. In addition, the theory’s strong emphasis on innovation may underplay the importance of operational stability, which is essential for consistent service delivery in hotel business.

Accordingly, while the theory is useful for explaining long-term competitiveness, it is most effective when complemented with more practical frameworks that capture short-term performance dynamics. This theory applies not only to the information communication technology (ICT) objective but also complements the strategic planning (SP) objective. In the fast-evolving hospitality industry, hotels that embrace ICT can streamline operations, augment customer interactions in addition to making data-driven decisions. When combined with flexible strategic planning, dynamic capabilities enable hotels in Uasin Gishu County to stay responsive to market shifts, adopt new technologies, and continuously improve their performance and competitiveness.

Dynamic Capabilities Theory explains that organizations improve performance by continuously adapting their resources to changing business environments (Teece et al., 1997). In the hotel industry, ICT is one of the resources that helps firms respond to changing customer needs and market demands. Technologies like online booking systems, property management systems, and digital payment platforms improve efficiency, service quality, and decision making. Hotels that successfully integrate these technologies are more likely to remain competitive and achieve better performance. The theory therefore provides a suitable foundation for explaining how ICT influences the performance of rated hotels in Uasin Gishu County.

RESEARCH METHODOLOGY

The study adopted an explanatory sequential mixed-methods research design. The quantitative phase was conducted first to determine the relationship between information and communication technology and the performance of rated hotels. A pilot study was conducted in rated hotels outside the study area to assess the clarity and reliability of the research instrument. The validity of the questionnaire was established through expert review, while reliability was assessed using Cronbach's alpha coefficient (Saunders et al., 2019). The data-driven phase of the study collected and analyzed quantitative data to determine associations among the variables. This was followed by the qualitative phase, using interviews to interpret and elaborate on the quantitative results, exploring how and why these drivers impact hotel performance (Dias et al., 2019).

The qualitative phase involved interviews with hotel managers who had experience in ICT implementation and hotel operations. Participants were selected purposively because of their knowledge of the subject. Interviews continued until no new information emerged. The interview data were transcribed and analyzed using thematic analysis. Similar ideas were grouped into themes that helped explain the quantitative findings. This approach provided a deeper understanding of how ICT influences hotel performance. The credibility of the findings was enhanced through member checking, where participants confirmed the accuracy of the interview summaries. Combining quantitative and qualitative findings also strengthened the trustworthiness of the results.

Hotels were grouped according to their star ratings, from one to five stars, to ensure the sample represented all categories. Selecting rated hotels was important because their structured operational systems make the findings more reliable and easier to generalize. Questionnaire used included a blend of close ended response and open-ended items. This design enabled the study to capture measurable aspects of hotel performance while also gaining qualitative intuitions into how strategic management decisions are implemented in practice (Creswell & Creswell, 2018). It provided respondents with an opportunity allowing participants share their insights, observations as well as practices associated with strategic management in a manner that is structured and efficient. The study adopted an explanatory sequential mixed-methods research design. The quantitative phase was conducted first to determine the relationship between information and communication technology and the performance of rated hotels.

Content validity was established through expert review. Two experts in strategic management and one expert in research methodology evaluated the questionnaire for clarity, relevance, and adequacy of the measurement items. Their recommendations were incorporated before the final questionnaire was administered (Saunders et al., 2019). Reliability was assessed using Cronbach's alpha coefficient. The ICT construct recorded a Cronbach's alpha coefficient of 0.875, while hotel performance recorded 0.927. The overall instrument achieved a Cronbach's alpha coefficient of 0.943. All values exceeded the recommended threshold of 0.70, indicating that the research instrument was reliable (Dias et al., 2019).

Data analysis and findings

Table 1 Information Communication Technology and performance of rated hotels

Statement	N	Mean	STD
The hotel utilizes digital platforms to manage guest bookings as well as communication.	123	4.18	0.78
The use of ICT tools has improved operational efficiency and minimized administrative errors.	123	3.91	0.82
Implementing technology has strengthened service delivery and overall hotel productivity.	123	4.09	0.80
A strong online presence has contributed to higher occupancy levels.	123	3.83	0.88
Integrating ICT into hotel operations has positively impacted revenue performance and cost management.	123	3.77	0.90
Aggregated mean for Information Communication Technology	123	3.96	0.84

Among all the independent variables, information and communication technology recorded the highest overall mean, at 3.96, reflecting strong adoption across rated hotels in UG County. This demonstrates that the sector is gradually embracing modernization, with digital tools playing a key role in enhancing operational efficiency and competitiveness. The first indicator examined the extent to which hotels make use of digital clients booking platforms and communication, achieving the highest mean of 4.18. This shows that most hotels count on online booking platforms to manage reservations besides engage with clients. Digital presence has become crucial for prominence and market competitiveness and even lower-rated hotels are increasingly leveraging ICT tools. These findings align with Kim and Park (2019), who noted that online platforms have transformed client interactions in Kenyan hotels.

The study also assessed if ICT tools streamline operations and reduce administrative errors, which recorded a mean of 3.91. Respondents highlighted that computerized record-keeping minimizes double reservations, improves inventory management, and enhances communication between departments. Some hotels, however, continue to rely on hybrid systems that integrate both manual as well as digital processes. The finding is consistent with Njoroge and Kariuki (2019), who showed usage of property management systems greatly minimizes check-in delays and administrative blunders. Further, the research explored the effect of ICT on operational efficiency and service delivery, obtaining a mean of 4.09. The results indicate that technologies such as digital check-ins, automated billings plus online feedback systems improve response times, accuracy, and guest satisfaction. It further explored the impact of online presence and digital marketing on room's rates of occupancy, which recorded a mean of 3.83. Although online platforms help increase visibility, occupancy remains affected by other factors such as competition and seasonal demand. Hotels that actively implement digital marketing strategies tend to achieve higher occupancy during peak periods compared with those that have minimal online engagement. This aligns with Law et al. (2020), that found a positive relationship between online presence and hotel bookings, with variations based on hotel size and location.

Finally, the impact of ICT integration on increased revenue and effective cost management was assessed, recording a mean of 3.77. Technology has helped minimize paperwork and reduce human errors; however, most hotel establishments are yet to fully integrated their systems across accounting, bookings plus inventory

management. Comprehensive integration is typically seen in higher-rated hotels, consistent with Kariuki and Oduor (2021), emphasizing that the depth of ICT integration determines its effectiveness in improving performance.

Pearson's correlation analysis was conducted to determine the relationship between information and communication technology and the performance of rated hotels in Uasin Gishu County. The findings revealed a strong positive and statistically significant relationship between ICT and hotel performance ($r = 0.703$, $p < 0.01$). This implies that increased adoption and integration of ICT are associated with improved hotel performance. The result suggests that hotels investing in digital technologies such as online reservation systems, property management systems, digital communication platforms, and electronic payment solutions are more likely to achieve better operational and financial outcomes.

Before regression analysis, diagnostic tests were conducted to confirm that the data met the assumptions of regression. The results showed no evidence of multicollinearity (Tolerance = 0.719; VIF = 1.391), while the residuals were normally distributed (Kolmogorov-Smirnov = 0.057, $p = 0.200$) and independent (Durbin-Watson = 2.085). The Breusch-Pagan test further confirmed that the assumption of homoscedasticity was satisfied ($\chi^2 = 2.142$, $p = 0.821$), indicating that the data were suitable for regression analysis (Hair et al., 2019; Field, 2018). Regression analysis showed that information communication technology had a positive and statistically significant influence on the performance of rated hotels ($\beta = 0.341$, $t = 5.657$, $p < 0.001$). The findings indicate that hotels that strengthen ICT adoption are more likely to improve operational efficiency, customer service and overall organizational performance. Although the coefficient was estimated from the broader regression model in the parent study, ICT remained the strongest predictor of hotel performance after controlling for the other strategic management variables.

These findings support dynamic capabilities theory, which argues that organizations improve performance by developing and integrating valuable capabilities that enable them to respond to changing business environments (Teece et al., 1997). The findings are consistent with Kimani and Waithaka (2016), who reported that online reservation systems improve occupancy rates and operational efficiency in Kenyan hotels. Similarly, Njoroge and Kariuki (2019) established that ICT adoption improves customer satisfaction, operational efficiency, and revenue growth in the hospitality industry.

Qualitative responses reinforced these findings. Respondents indicated that the use combining online booking systems besides digital marketing in addition to property management tools has enhanced operational competence, strengthened communication as well as enhanced client satisfaction. Challenges such as unreliable internet access, high system costs in addition to limited staff training were noted, yet ICT adoption remains critical for competitiveness and sustainable growth in the hotels.

“Online booking and digital marketing have boosted our visibility and guest numbers significantly” (Respt 33).

“Our hotel still struggles with system maintenance and internet issues, which slows service at times” (Respt 90).

Hypothesis test for information communication technology (ICT) yielded a p-value of 0.000, signifying a highly significant relation with hotel performance. It implies that effective ICT adoption boosts operational efficiency, communication as well as decision-making. Consequently, integrating advanced technological tools supports innovation, streamlines service delivery, and contributes to overall organizational success. These results are in agreement with studies by Law et al. (2020), Ezzaouia and Bulchand-Gidumal (2020) and Buhalis and Leung (2018) which found that online reservation systems, digital marketing platforms, and property management systems significantly improved occupancy rates, customer satisfaction, operational efficiency, and revenue performance in hotels.

CONCLUSIONS AND RECOMMENDATIONS

The study concluded that the extent of adoption differed among hotel categories, largely owing to financial besides technical limitations. Smaller hotels often constrained by internet connectivity issues and high setup costs, and limited staff expertise. ICT, despite these challenges, was consistently identified as a critical catalyst for competitiveness in addition to hotels innovation.

Finally, ICT was identified as the most influential factor, significantly improving operational effectiveness, client satisfaction and market access. Hotels that effectively adopt digital tools gain a clear competitive advantage besides higher profitability, underscoring the need to prioritize ICT integration as a central strategic initiative in the hotel industry.

The government should facilitate investment in digital technologies and ICT infrastructure to improve operational efficiency, service delivery and competitiveness among rated hotels. Subsequent studies should investigate the sustainable impacts of advanced technological adoption, including artificial intelligence in addition to smart room automation, on hotel performance in Kenya.

REFERENCES

1. Barsky, J., & Nash, L. (2013). Customer satisfaction: Applying concepts to the hotel industry. *Cornell Hospitality Quarterly*, 54(3), 243–253.
2. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
3. Buhalis, D., & Leung, R. (2018). Smart hospitality: Interconnectivity and interoperability towards an ecosystem. *International Journal of Hospitality Management*, 71, 41–50.
4. Callan, R. J., & Teasdale, A. (1999). Hotel guest history as the foundation for database marketing: Embracing a pilot survey of UK hotels. *Journal of Vacation Marketing*, 5(2), 140–153. <https://doi.org/10.1177/135676679900500203>
5. Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.
6. Dias, K., White, J., Metcalfe, C., Kipping, R., Papadaki, A., & Jago, R. (2019). Acceptability, internal consistency and test–retest reliability of scales to assess parental and nursery staff's self-efficacy, motivation and knowledge in relation to pre-school children's nutrition, oral health and physical activity. *Public Health Nutrition*, 22(15), 2790–2801.
7. Ezzaouia, I., & Bulchand-Gidumal, J. (2021). The impact of information technology adoption on hotel performance: Evidence from a developing country. *Journal of Quality Assurance in Hospitality & Tourism*, 22(6), 709–737.
8. Field, A. (2018). *Discovering statistics using IBM SPSS Statistics* (5th ed.). Sage Publications.
9. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
10. Ham, S., Kim, W. G., & Jeong, S. (2005). Effect of information technology on performance in upscale hotels. *International Journal of Hospitality Management*, 24(2), 281–294.
11. Hinds, P. S. (2016). Research instruments and data collection methods in qualitative studies. *Journal of Nursing Scholarship*, 48(2), 117–124.
12. Kim, H., & Park, J. (2019). Service quality drivers and hotel performance: Evidence from South Korea. *Journal of Hospitality and Tourism Management*, 40, 143–152.
13. Kothari, C. R. (2019). *Research methodology: Methods and techniques* (3rd ed.). New Age International Publishers.
14. Law, R., Leung, D., & Chan, I. C. C. (2020). Progression and development of information and communication technology research in hospitality and tourism: A state-of-the-art review. *International Journal of Contemporary Hospitality Management*, 32(2), 511–534. <https://doi.org/10.1108/IJCHM-07-2018-0586>

15. Radojevic, T., Stanisic, N., & Stanic, N. (2017). Inside the rating scores: A multilevel analysis of the factors influencing customer satisfaction in the hotel industry. *Cornell Hospitality Quarterly*, 58(2), 134–164. <https://doi.org/10.1177/1938965516686114>
16. Rhee, H. T., & Yang, S.-B. (2015). Does hotel attribute importance differ by hotel? Focusing on hotel star classifications and customers' overall ratings. *Computers in Human Behavior*, 50, 576–587.
17. Ryan, C., & Gu, H. (2007). Perceptions of Chinese hotels. *Cornell Hotel and Restaurant Administration Quarterly*, 48(4), 380–391.
18. Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.
19. Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533.