

East African Journal of Business and Economics
eajbe.eanso.org
Volume 9, Issue 1, 2026
Print ISSN: 2707-4250 | Online ISSN: 2707-4269
Title DOI: https://doi.org/10.37284/2707-4269

EAST AFRICAN NATURE & SCIENCE ORGANIZATION

*Original Article*

# Digital Transformation and Customer Relationship Management Capability of Star-rated Hotels in Mombasa County, Kenya

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**Article DOI: https://doi.org/10.37284/eajbe.9.1.4298**

**Date Published:**

*06 January 2026*

**Keywords**:

*Digital Transformation, Digital Infrastructure, Digital Strategy, Data Analytics, Star-rated Hotels, Mombasa County, Kenya.*

## ABSTRACT

The general objective of this study was to establish the effect of digital transformation on the customer relationship management capability of star-rated hotels in Mombasa County, Kenya. The specific objectives were to examine the effect of digital infrastructure on customer relationship management capability, establish the effect of digital strategy on customer relationship management capability and analyse the effect of data analytics on customer relationship management capability of star-rated hotels in Mombasa County. The study was founded on the Technology-Organisation-Environment Framework, the Resource-Based Theory and the Dynamic Capabilities Theory. The target population was the star-rated hotels operating in Mombasa County, and they were 43 in number according to the Mombasa County Government Trade Department report (2024). A census of the target population was done because it was relatively small. A cross-sectional research design was adopted, and data were collected using a structured questionnaire with marketing managers of the hotels being the respondents. Out of the 43 star-rated hotels, marketing managers from 37 of them responded, and this led to an 86% response rate. Data analysis was done using simple regression analysis, and the regression results indicated that Digital infrastructure, Digital strategy and Digital analytics all had a positive and significant effect on customer relationship capability of the star-rated hotels. Digital strategy had the strongest effect on the hotel's customer relationship management capability, which suggests that improvements in strategic digital planning and alignment are most strongly associated with enhanced CRM capabilities. Based on the results of the regression analysis, the study concluded that digital transformation had a positive and significant effect on the customer relationship management capability of the star-rated hotels in Mombasa County. The study recommended that management of the hotels should prioritise strategic digital planning, invest in scalable digital infrastructure, enhance the hotels' data analytics capabilities through staff training programs and encourage cross-functional digital collaboration within the hotels. Future studies could consider incorporating qualitative methods to capture deeper organisational perspectives on digital transformation, including challenges, cultural factors, and leadership dynamics.

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Article DOI: https://doi.org/10.37284/eajbe.9.1.4298

**APA CITATION**

Onditi, E. O. & Omurwa, C. M. (2026). Digital Transformation and Customer Relationship Management Capability of Star-rated Hotels in Mombasa County, Kenya. *East African Journal of Business and Economics*, *9*(1), 23-44. https://doi.org/10.37284/eajbe.9.1.4298

**CHICAGO CITATION**

Onditi, Evans Ojiambo and Clive Mokono Omurwa. 2026. "Digital Transformation and Customer Relationship Management Capability of Star-rated Hotels in Mombasa County, Kenya". *East African Journal of Business and Economics* 9 (1), 23-44. https://doi.org/10.37284/eajbe.9.1.4298

**HARVARD CITATION**

Onditi, E. O. & Omurwa, C. M. (2026). "Digital Transformation and Customer Relationship Management Capability of Star-rated Hotels in Mombasa County, Kenya", *East African Journal of Business and Economics*, 9(1), pp. 23-44. doi: 10.37284/eajbe.9.1.4298

**IEEE CITATION**

E. O. Onditi & C. M. Omurwa "Digital Transformation and Customer Relationship Management Capability of Star-rated Hotels in Mombasa County, Kenya", *EAJBE*, vol. 9, no. 1, pp. 23-44, Jan. 2026.

**MLA CITATION**

Onditi, Evans Ojiambo & Clive Mokono Omurwa. "Digital Transformation and Customer Relationship Management Capability of Star-rated Hotels in Mombasa County, Kenya". *East African Journal of Business and Economics*, Vol. 9, no. 1, Jan. 2026, pp. 23-44, doi:10.37284/eajbe.9.1.4298.

## INTRODUCTION

In the last decade, digital transformation has become a strategic imperative across industries and has reshaped how business firms operate, deliver value and engage with customers. The hospitality sector in particular has witnessed a rapid adoption of digital technologies by hotels to streamline their operations, enhance service delivery and remain competitive in a dynamic industry (Wanjiru & Gichuhi, 2022). Hotels worldwide are increasingly leveraging digital tools such as Artificial Intelligence (AI), data analytics, mobile apps and social media platforms to market their services and enhance customer experiences. These technologies enable hotels to optimise pricing, customise services and engage customers across multiple touch points (Marques & Marques, 2023). In Africa, the hospitality sector is recognising the strategic importance of digital transformation in response to changes in consumer behaviours and the increased usage of mobile technology. According to Wanjiru and Gichuhi (2022), Africa's growing internet penetration and mobile-first consumer base represent unique opportunities for hotels to innovate their marketing and service delivery models. Some of the challenges in Africa include the high cost of digital infrastructure, unreliable internet connectivity, a lack of skilled personnel and resistance to change among staff (United Nations World Tourism Organisation, 2023).

In Kenya, the hospitality industry is a key economic pillar, and hotels are under pressure to modernise their operations and marketing strategies to remain competitive. The Kenyan government's support for information and communication technology (ICT) development through initiatives such as the Kenya Vision 2030 and the Digital Economy Blueprint have created a conducive environment for digital innovation in the sector (Ministry of ICT, 2019). Mombasa County is home to renowned tourist destinations such as Nyali, Shelly, and Pirates beaches and hotels in this region cater to both domestic and international tourists. This makes digital transformation within the hotels essential for visibility, customer engagement and service differentiation. However, according to Garzoni et al. (2020), many firms struggle with limited digital infrastructure, low adoption of advanced marketing technologies and inadequate staff training. In the highly competitive hospitality industry, firms place a strong emphasis on digital transformation and data-driven practices, and this has shifted marketing towards a science-based approach and given marketers access to insightful data about the performance of the business, customers, market opportunities and threats.

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Article DOI: https://doi.org/10.37284/eajbe.9.1.4298

**Digital Transformation**

Digital transformation is a process that aims to improve an enterprise by triggering significant changes to its properties through a combination of information and communications technologies (Vial, 2019). Another definition of digital transformation is given by Westerman and Bonnet (2014), who defined it as a process of leveraging digital technologies to fundamentally change how organisations operate, deliver value to customers and adapt to changing market conditions. Digital transformation starts with the adoption and use of digital technologies and moves to the implied fundamental transformation of the organisation. The digital technology must create value for customers, the organisation and other key stakeholders (Schallmo et al., 2019). Digital transformation consists of several dimensions such as digital infrastructure, digital strategy, process digitisation, data analytics, AI integration and digital culture (Vial, 2019). In terms of digital infrastructure, it refers to the foundational technologies and systems such as hardware, software, network connectivity and cloud platforms. A hotel's ability to adopt digital transformation relies on its infrastructure, such as mobile apps, reliable internet connectivity and servers. Without this infrastructure, advanced digital tools such as AI or Customer Relationship Management Systems may not function effectively. The second dimension is digital strategy, which focuses on the strategic vision and commitment of the firm's leaders to digital transformation. This is important because successful digital transformation requires a firm's top management to champion digital initiatives, allocate resources and align digital goals with business objectives (Krauss et al., 2022). Process digitisation is the third dimension of digital transformation, which involves automating and optimising internal workflows in an organisation using digital tools (Baiyere et al., 2020). Digitising processes within a firm improves efficiency, reduces human errors and enhances service delivery. In a hotel scenario, process digitisation includes automating reservations and billing systems.

The fourth dimension is data analytics, which involves the collection, analysis and use of data to make business decisions. In the hospitality industry, hotels may use data from social media, customer bookings, customer feedback and customer loyalty programs to segment customers, forecast demand and measure performance of marketing campaigns. AI integration is the fifth dimension of digital transformation, where AI is used to enhance decision-making, personalisation and automation. According to Caliskan et al. (2021), AI can analyse large data sets, automate responses to customer enquiries and provide predictive insights into customer behaviour. The sixth dimension is digital channels, which are a pivotal dimension of digital transformation, serving as the primary interface through which organisations engage with customers, partners, and stakeholders in the digital age. These channels encompass a wide array of platforms, including websites, mobile applications, social media, email, and emerging technologies like chatbots and voice assistants. Their strategic integration enables businesses to deliver seamless, personalised, and real-time experiences that enhance customer satisfaction and loyalty. Bindeeba et al. (2025) stated that digital channels are not merely tools for communication but are instrumental in reshaping customer journeys and business models to align with evolving digital expectations. Moreover, the deployment of digital channels supports data-driven decision-making by capturing user behaviour and feedback, which can be leveraged to refine offerings and optimise operations. According to Kim and Lee (2024), business firms that effectively utilise digital channels are better positioned to innovate and respond to market disruptions, thereby gaining a competitive edge in their respective industries. Therefore, digital channels are not just a technological upgrade but a transformative force that redefines how value is created and delivered in the digital economy. The seventh dimension is digital culture, which refers to the mindset of the organisation and readiness to embrace digital change. Fischer et al. (2020) suggested that employees of a firm have to be trained, motivated and supported for them to adapt to new

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Article DOI: https://doi.org/10.37284/eajbe.9.1.4298

technologies. This implies that a digital culture encourages employees to engage in experimentation, continuous learning and interfunctional collaboration. The eighth dimension is digital ecosystem integration, which captures the broader scope of integrating financial technologies (Fintech), third-party platforms like payment gateways and CRM systems into an organisation's operational and marketing framework (Jocevski et al., 2020). For instance, hotels integrate mobile money payment systems such as M-Pesa, syncing their operations with online booking platforms such as Booking.com and offering digital wallets to customers.

This study focused on digital infrastructure, digital strategy and data analytics. This is because digital infrastructure forms the backbone of digital transformation, enabling connectivity, cloud computing and cloud computing which is essential for modern hotel operations and customer engagement (Susanti et al., 2023). Without robust infrastructure, hotels risk falling behind in service delivery and competitiveness. Michelotto and Joia (2024) argued that organisational readiness for digital transformation is significantly influenced by the robustness of digital infrastructure. A coherent digital strategy aligns technological initiatives with business goals, ensuring that CRM systems are leveraged effectively. Rêgo et al. (2022) emphasise that strategic management plays a critical role in digital transformation by guiding the adoption of digital tools and fostering organisational agility. In the hotel industry, a well-defined digital strategy ensures that CRM capabilities are not siloed but integrated across departments to enhance guest experiences and loyalty. Data analytics is a key enabler of CRM effectiveness, allowing hotels to derive insights from customer behaviour and preferences. It supports predictive modelling and segmentation, which are essential for personalised marketing and service delivery. This capability enhances customer retention and operational efficiency, making it a strategic asset in digital transformation.

**Customer Relationship Management Capability**

Customer relationship management capability (CRMC) refers to the processes used by firms to develop, maintain and contribute to long-term relationships with customers (Herhausen & Schogel, 2013). According to Fatorah and Haryanto (2020), CRMC is the firm's ability to systematically manage customer interactions, data and relationships leading to customer satisfaction, loyalty and long-term value. It involves the strategic use of CRM systems, personalised communication and customer engagement practices that align with the objectives of the business. Customer relationship management capability is not just about technology. It involves organisational processes, employee competencies and cultural orientation towards customer-centricity. This enables business firms to understand customer needs, customise product offerings and build lasting relationships with customers. Customer relationship management capability plays a critical role in modern marketing strategy, especially in service industries where the customer experience is central to value creation. Tan and Sousa (2015) argued that CRMC contributes to competitive advantage by enabling firms to deliver superior customer value and adapt product offerings to changing customer preferences.

Existing literature on CRMC indicates that there are several dimensions of CRMC, which include customer data management, personalisation capability, customer engagement, relationship building and feedback and responsiveness. Customer data management is the firm's ability to collect, store and analyse customer information to inform marketing decision-making and help in personalising customer interactions (Binsaeed et al., 2023). It involves maintaining accurate customer databases, tracking customer behaviour and using data analytics to understand customer preferences and predict future trends. Effective data management is foundational to CRM because it enables segmentation, targeting and customisation of marketing communication.

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Personalisation capability is the ability of a firm to customise its products and marketing communication to individual preferences of customers (Kangu, 2017). This is done through personalised e-mails, customised offers and adaptive website content. This enables customer satisfaction and emotional connection, which are key drivers of customer loyalty. Customer engagement is defined by Binsaeed et al. (2023) as the ability of a business to maintain meaningful and ongoing interactions with customers across multiple touch points. This may include the use of social media, e-mails, web content, magazine adverts and customer loyalty programs. Engaged customers are more likely to provide valuable insights about the organisation's marketing activities.

The feedback and responsiveness dimension captures the firm's ability to solicit, collect, interpret and act on customer feedback in a timely and effective manner. It requires firms to have mechanisms for collecting customer product reviews, handling customer complaints and implementing product or service improvements based on customer input. Responsiveness indicates that the firm values customer opinions and is committed to continuous improvement. The fifth dimension of CRMC is relationship building, which is about the firm's capacity to develop trust, emotional connection and long-term commitment with customers (Athanasoulias & Chountalas, 2017). It requires firms to be transparent and offer consistent high quality products and be proactive in customer communications. Relationship building is important in industries like hospitality because repeat business and word-of-mouth referrals are critical to marketing success. This study focused on customer data management, personalisation capability and customer engagement because these three are directly affected by digital transformation technologies, they reflect measurable and observable behaviours in hotel operations, and they also align with customer-centric strategies in the hospitality industry.

**Star-Rated Hotels in Mombasa County**

Star-rated hotels represent the upper tier of the hospitality industry. The Tourism Regulatory Authority (TRA), which falls under the Ministry of Tourism and Wildlife, is the government body that assesses and assigns star ratings to hotels in Kenya. The classifications vary from 1 star to 5 stars, with each level reflecting specific criteria such as room quality, staff qualifications, service standards, safety protocols and recreational facilities. The presence of star-rated hotels in Mombasa County contributes to both the county and national economies through job creation, tourism revenue and international branding. The star-rated hotels tend to be at the forefront of digital transformation by adopting technologies such as online booking engines, CRM systems, mobile apps and smart room features to enhance customer experience and operational efficiency. As Kenya continues to position itself as a competitive destination in global tourism, the role of star-rated hotels in Mombasa County remains critical to delivering world-class hospitality services.

**Statement of the Problem**

The hospitality industry in Kenya plays a pivotal role in the country's economic development, contributing approximately 10.4% to GDP and employing over 1.1 million people as of 2023 (Kenya National Bureau of Statistics, 2023). However, the sector faces mounting pressure to modernise in response to global shifts in consumer expectations, technological innovation, and competitive dynamics. Digital transformation and customer relationship management (CRM) have emerged as critical enablers of operational efficiency, personalised service delivery, and sustainable growth in the hospitality sector. Yet, despite their strategic importance, the adoption and integration of these capabilities remain uneven and underdeveloped across star-rated hotels in Kenya. A study by Kimani (2012) revealed that many Kenyan hotels struggle with fragmented digital systems, limited CRM frameworks, and inadequate strategic alignment between technology and customer engagement. These challenges are compounded by infrastructural constraints, high implementation

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Article DOI: https://doi.org/10.37284/eajbe.9.1.4298

costs, and a shortage of skilled personnel capable of managing digital platforms effectively.

The Tourism Research Institute (2024) notes that while digital tools such as online booking systems and customer feedback platforms are increasingly available, their usage is often superficial, lacking the depth required for data-driven decision-making and personalised guest experiences. The Commission on Revenue Allocation (2023) highlights that counties with high tourism potential, including Nairobi, Mombasa, and Nakuru, have not fully leveraged digital infrastructure to enhance hospitality competitiveness. This underutilization limits the sector's ability to attract international visitors, retain loyal customers, and respond to market disruptions such as pandemics or economic shocks. Moreover, the absence of integrated CRM systems impedes hotels from capturing and analysing customer data effectively, resulting in missed opportunities for targeted marketing, loyalty programs, and service innovation. In light of these challenges, there is a pressing need to investigate the extent to which digital transformation and CRM capabilities are adopted in Kenya's star-rated hotels, and how these capabilities influence customer engagement and business performance. Addressing this gap by conducting this study is essential for building a resilient, customer-centric hospitality sector that aligns with Kenya's Vision 2030 goals and global best practices.

### Objectives of the Study

The objective of this study was to examine the effect of digital transformation on the customer relationship management capability of star-rated hotels in Mombasa County, Kenya. The specific objectives were to;

- Examine the effect of digital infrastructure on the customer relationship management capability of star-rated hotels in Mombasa County.
- Establish the effect of digital strategy on the customer relationship management capability of star-rated hotels in Mombasa County.
- Analyse the effect of data analytics on the customer relationship management capability of star-rated hotels in Mombasa County.

## LITERATURE REVIEW

### Theoretical Foundation

This study was founded on the Technology-Organisation-Environment framework, Resource-Based Theory, Dynamic Capabilities Theory and the Customer Relationship Management Capability Framework.

#### *1. Technology-Organisation-Environment (TOE) Framework*

The Technology-Organisation-Environment (TOE) framework, developed by Tornatzky and Fleischer (1990), provides a comprehensive lens for understanding the adoption of technological innovations within organisations. It posits that three contextual dimensions, technology, organisation, and environment, jointly influence the decision to adopt and implement new technologies. The technological context includes both internal and external technologies relevant to the firm, such as CRM systems and digital platforms. The organisational context encompasses the firm's size, structure, resources, and managerial capabilities, while the environmental context refers to industry characteristics, competition, and regulatory pressures. This framework assumes that technology adoption is not a linear process but is shaped by a complex interplay of internal readiness and external stimuli. In this study, the TOE framework is particularly relevant to the digital transformation variable, as it helps explain the factors that influence the adoption of CRM technologies in star-rated hotels. For instance, a hotel's decision to implement a cloud-based CRM system may be driven by technological advancements such as mobile integration, organisational readiness in terms of skilled staff

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and financial resources and environmental pressures such as competition from tech-savvy rivals. By applying TOE, this study can systematically assess how these three dimensions affect the extent and effectiveness of digital transformation in enhancing customer relationship management. This framework also allows for comparative analysis across hotels with varying levels of technological maturity and market exposure.

### *2. Resource-Based Theory*

The Resource-Based Theory (RBT), introduced by Barney (1991), is a strategic management theory that emphasises the importance of internal resources in achieving and sustaining competitive advantage. According to RBT, resources that are valuable, rare, inimitable, and non-substitutable (VRIN) can provide firms with a strategic edge. These resources can be tangible, such as IT infrastructure, or intangible, such as customer data, brand reputation, and organisational culture. The theory assumes that firms are heterogeneous in their resource endowments and that these differences explain variations in performance. RBT shifts the focus from external market conditions to internal capabilities, making it a powerful tool for analysing how firms leverage their assets to create value. In this study, RBT is directly applicable to the CRM capability variable because the CRM systems and the data they generate can be considered strategic resources. Hotels that effectively utilise CRM technologies to personalise guest experiences, predict customer needs, and foster loyalty are likely to outperform competitors. These capabilities are not easily replicated, especially when supported by unique organisational processes and skilled personnel. By framing CRM as a strategic resource, RBT allows the researcher to explore how digital transformation enhances the value of CRM systems and contributes to long-term competitiveness in the hospitality sector. It also provides a basis for evaluating the differential impact of CRM capabilities across hotels with varying resource profiles.

### *3. Dynamic Capabilities Theory*

The Dynamic Capabilities Theory, developed by Teece, Pisano, and Shuen (1997), extends the RBV by focusing on a firm's ability to adapt, integrate, and reconfigure internal and external competencies in response to rapidly changing environments. It argues that in dynamic markets, competitive advantage is not just about possessing valuable resources but about the ability to renew and leverage them effectively. Dynamic capabilities include processes such as sensing opportunities, seizing them through strategic investments, and transforming organisational structures to support innovation. The theory assumes that firms operate in environments characterised by volatility, uncertainty, and technological disruption, and that survival depends on agility and responsiveness. For this study, Dynamic Capabilities Theory bridges the gap between digital transformation and CRM capability, offering a framework to understand how hotels evolve their customer engagement strategies through technology. For example, a hotel that uses real-time data analytics to adjust its marketing campaigns or personalise guest services demonstrates dynamic capabilities. These actions reflect not just the possession of CRM tools but the strategic use of them to respond to customer preferences and market trends. By applying this theory, this study's findings can highlight how digital transformation enables hotels to build and refine CRM capabilities over time, leading to sustained customer satisfaction and loyalty.

### *4. Customer Relationship Management Capability Framework*

The CRM Capability Framework, as articulated by Coltman (2007), conceptualises customer relationship management as a multidimensional organisational capability that integrates technology, human capital, and business processes. It argues that CRM success is not solely dependent on software implementation but on the alignment of technological tools with organisational strategies and employee

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competencies. The framework assumes that effective CRM requires a holistic approach, where data-driven insights are translated into actionable strategies through well-trained staff and streamlined processes. It also emphasises the role of organisational learning and feedback mechanisms in refining CRM practices. In this study, the CRMC framework is central to the CRM capability variable, providing a structured way to assess how hotels manage customer relationships. For instance, a hotel that uses CRM data to segment customers, tailor services, and monitor satisfaction levels demonstrates high CRM capability. The framework allows authors to evaluate the maturity of CRM practices across hotels, considering factors such as system integration, staff training, and process optimisation. It also complements the digital transformation variable by showing how technology enhances CRM when embedded within a supportive organisational context.

**Empirical Review**

The hospital industry has undergone significant digital transformation, yet empirical evidence on how these changes affect customer relationship management capability remains fragmented and scarce. Empirical studies have consistently emphasised the foundational role of digital infrastructure in enabling service innovation and operational efficiency in hotels. A study by Anwar et al. (2024) found that the integration of digital technologies such as cloud-based property management systems and AI tools enhanced operational performance and guest experience in the hospitality industry. Strategic alignment of digital initiatives with business goals is a critical factor that influences a firm's CRMC. Empirical evidence from the hotel industry shows that leadership commitment, staff training and digital roadmaps are positively correlated with successful digital transformation and improved customer engagement. A study by Mutua and Wanjiru (2023) on Kenyan hotels found that digital marketing strategies significantly enhanced customer loyalty, especially when supported by top management. In terms of data analytics, a study by Lee et al. (2022) found that hotels leveraging big data analytics are better positioned to anticipate guest needs and deliver customised experiences for guests.

Customer relationship management capability has been studied by authors as a driver of customer retention and loyalty in the hospitality sector. In the United States of America, Smith (2024) studied the influence of digital transformation on firm performance in the service industry. The study relied on secondary data from online journals. The study found that adoption of digital technologies such as Big Data analytics, cloud computing and AI led to improved operational efficiency, enhanced customer experiences and increased competitive advantage for service firms. The finding by Smith (2024) is in tandem with that of Weber (2024), who did a comparative study on the impact of digital transformation on firm performance in Germany. Secondary data was used, and findings indicated that embracing digitalisation leads to improved productivity, innovation and efficiency. In Vietnam, Khoa et al. (2025) examined the impact of digital transformation on customer loyalty of fitness service business firms. The study was based on the Stimulus-Organism-Response framework and Trust Commitment Theory. A sample size of 312 customers was used, and structural equation modelling was used to analyse the data. Results indicated that digital transformation had a positive and significant effect on customer loyalty. In China, Li et al. (2023) studied the effect of AI on customer relationship management performance among e-commerce enterprises. Data analysis was done using partial least squares, and results indicated that AI usage positively and significantly affected CRM capabilities of the e-commerce firms.

In Zimbabwe, Kaondera et al. (2023) did a study titled "Buttressing Customer Relationship Management through Digital Transformation in the Banking Industry". Their study was founded on the Technology Acceptance Model and the Identify, Differentiate, Interact and Customise Theory. A sample of 348 bank employees was

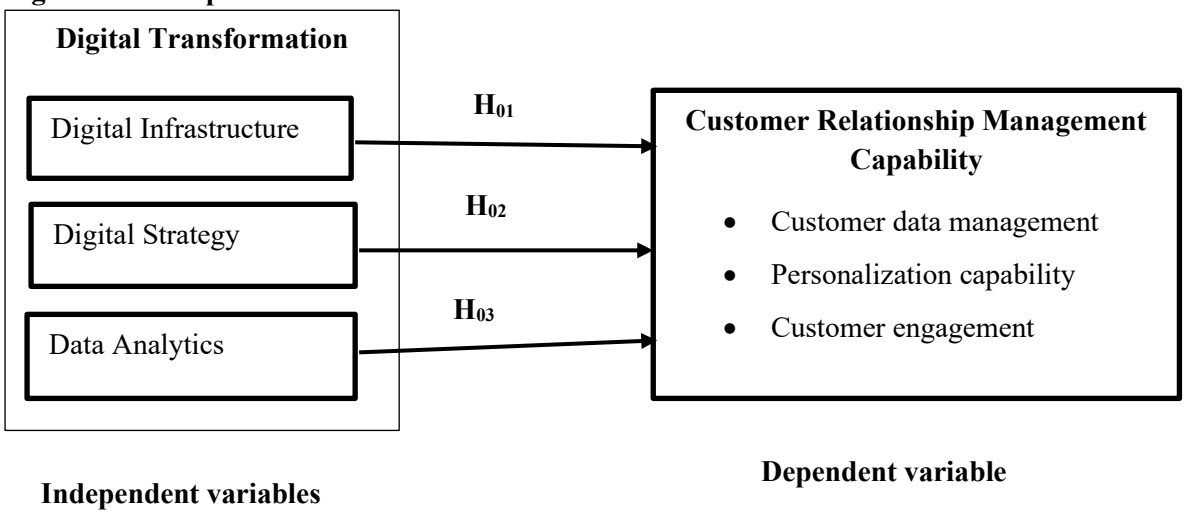
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used, and linear regression analysis results indicated that digital transformation had a positive and significant effect on customer relationship management. However, the study focused on E-segmentation, E-customer profiling, E-customer journey evaluation and E-retailing as the dimensions of digital transformation. In Nigeria, Betzoum et al. (2022) examined the influence of customer relationship management and innovation capability on the performance of SMEs. A sample of 286 business owners was used, and data analysis was done using partial least squares. Results indicated that customer relationship management and innovation capability had a positive and significant effect on SMEs performance.

In Kenya, Mwenda and Muthimi (2025) did a study on the paradoxical effects of digital transformation strategies on the organisational performance of commercial banks. The study was anchored on the Technology Acceptance Model, Diffusion of Innovation Theory, the Resource-Based Theory and Agency Theory. Linear regression analysis results indicated that data analytics, digital banking platforms, Fintech partnerships and cloud computing all had positive and significant effects on the organisational performance of the banks. This finding is similar to that of Owino and Waema (2020), who examined digital transformation as a source of competitiveness among SMEs in Nairobi City County. The study focused on digital sensing capability, digital-enabled strategy, digital seizing capability and digital resource management as the independent variables. Linear regression analysis results showed that digital transformation had a positive and significant effect on organisational competitiveness. While existing literature provides valuable insights into digital transformation and CRM practices, conceptual, contextual and geographical gaps still remain. For instance, there is a limited integration of digital infrastructure, digital strategy and data analytics under the digital transformation in the studies reviewed. The majority of the reviewed studies did not study the customer relationship management capability of the firms. Contextually, there is a scarcity of empirical studies in the hospitality industry, with authors such as Kaondera et al. (2023 and Mwenda and Muthimi (2025) doing their studies in the banking industry. The relationship between digital transformation and customer relationship management capability of star-rated hotels in Mombasa County remains under-explored, hence the need for this study. The conceptual framework is illustrated in Figure 1.

**Figure 1: Conceptual Framework**




**Source:** Author (2025)

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Article DOI: https://doi.org/10.37284/eajbe.9.1.4298

Based on the literature review, the study hypotheses were developed as;

- **$H_{01}$:** Digital infrastructure has no significant effect on the customer relationship management capability of Star-rated hotels in Mombasa County
- **$H_{02}$:** Digital strategy has no significant effect on the customer relationship management capability of Star-rated hotels in Mombasa County
- **$H_{03}$:** Data analytics has no significant effect on the customer relationship management capability of Star-rated hotels in Mombasa County

## METHODOLOGY

This study adopted the cross-sectional research design because data on the study variables were collected at a single point in time. Hunziker and Blankenagel (2024) emphasise that cross-sectional studies are particularly effective for identifying generalised patterns and associations between constructs, such as digital infrastructure, strategy, and data analytics, without requiring longitudinal tracking. The target population consisted of all the star-rated hotels operating in Mombasa County. According to the Mombasa County Government Trade Department report (2024), there are 43 licensed star-rated hotels that operate in Mombasa County. Since 43 is a relatively small number, a census study was conducted. The unit of analysis was the star-rated hotels, and the unit of observation was the marketing managers of the hotels. The choice of marketing managers as the respondents in the study was based on the fact that they are directly responsible for customer engagement, brand positioning, and service personalisation, all of which are core functions of CRM. Their management role places them at the intersection of customer data, digital tools, and strategic decision-making.

According to Rêgo et al. (2022), digital transformation requires strategic alignment across departments, and marketing managers are often the drivers of digital initiatives aimed at enhancing customer experience and loyalty. Data collection was done using a structured questionnaire using the drop and pick up later method with the help of several research assistants. Digital transformation was measured using the scale items adopted from Michelotto and Joia (2024), Rêgo et al. (2022) and Kim and Lee (2024). Customer relationship management capability was measured using scale items adopted from Sin et al. (2005) and Binsaeed et al. (2023). All the items were measured using a 5-point Likert scale with 1 = Not at all, 2 = To a small extent, 3 = To a moderate extent, 4 = To a great extent and 5 = To a very great extent. Using extent-based Likert scale items is particularly appropriate for studies assessing the degree of implementation or capability, such as digital transformation and CRM practices in hospitality. This scale allows respondents to indicate the level to which specific activities or technologies are adopted, rather than merely expressing agreement or disagreement.

According to Dawes (2008), extent-based scales provide more nuanced data when measuring behaviours, capabilities, or performance levels, making them ideal for organisational research. Additionally, Joshi et al. (2015) emphasise that such scales enhance the reliability and interpretability of responses in applied settings, especially when evaluating operational maturity or strategic initiatives. Data analysis was done using regression analysis, and therefore, the data collected was subjected to the tests of the assumptions of regression analysis. Linearity was checked using the values of significant deviation from linearity, normality was checked using the Shapiro-Wilk and Kolmogorov-Smirnov tests, autocorrelation was tested using the Durbin–Watson test, while the reliability of the research instrument was established using the Cronbach's alpha reliability coefficient with a cut-off point of 0.7.

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## FINDINGS

The response rate for the study was 86% since 37 of the 43 star-rated hotels in Mombasa County responded by filling in the questionnaires. A response rate of 86% is considered highly acceptable and indicative of strong engagement and data reliability in survey-based research. According to Holtom et al. (2022), response rates above 80% are generally regarded as excellent and help minimise non-response bias, thereby enhancing the validity of the study's findings. High response rates are particularly important in organisational research, where representativeness and completeness of data are critical for drawing meaningful conclusions. This high response rate was because the target population was relatively small, and the drop-and-pick-up later method that was used to administer the questionnaires allowed the respondents ample time to provide the data required. Table 1 presents details of the gender, educational level, and work experience of the respondents of the study.

**Table 1: Respondent Characteristics**

| Description | Frequency | Percentage |
|---|---|---|
| Gender of the respondents | Male = 24<br>Female = 13<br>**Total = 37** | Male = 65%<br>Female = 35%<br>**Total = 100%** |
| Highest level of education | PhD = 0<br>Masters = 27<br>Bachelors = 10<br>Diploma = 0<br>Certificate = 0<br>Other = 0 | Masters = 73%<br>Bachelors = 27%<br><br>**Total = 100%** |
| Work experience | Less than 10 years = 7<br>10 to 20 years = 19<br>Over 20 years = 11 | 19%<br>51%<br>30%<br>**Total = 100%** |

**Source:** Research Data (2025)

Data from Table 1 indicates that the majority of the respondents were male, and this reflects a gender imbalance that is consistent with broader trends in Kenya's hospitality sector. While women are well-represented in frontline service roles, men continue to dominate managerial and strategic positions, including marketing and operations roles in star-rated hotels. This disparity aligns with findings from the National Gender and Equality Commission Report (2025), which highlights ongoing challenges in achieving gender parity in leadership across industries, despite the constitutional mandate for no more than two-thirds representation of either gender in public and private institutions. In terms of the level of education, the majority of the respondents held a Master's degree, which implies a highly educated sample. This reflects the increasing demand for advanced academic qualifications in Kenya's hospitality industry, especially for strategic roles such as marketing and operations management.

According to the Commission for University Education (2024), postgraduate enrollment in Kenya has grown steadily, driven by the need for specialised managerial skills and professional development in service sectors like tourism and hospitality. The Kenya Institute of Management (2023) also emphasises that higher education is becoming a key differentiator in competitive hotel environments, where innovation and customer-centric strategies are essential. In terms of work experience, the majority of respondents reported having 10 to 20 years of work experience, indicating a strong representation of mid-career professionals in the hospitality industry. Additionally, 30% of the respondents had over 20 years of experience, reflecting a significant

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Article DOI: https://doi.org/10.37284/eajbe.9.1.4298

presence of seasoned experts with deep institutional knowledge and strategic insight. Only 19% had less than 10 years of experience, suggesting that early-career professionals were less represented in this sample. This distribution highlights the maturity and depth of professional expertise among participants, which enhances the credibility of their responses, particularly in areas such as digital transformation and customer relationship management, where practical experience is crucial for informed evaluation.

**Descriptive Analysis of the Study Variables**

***Digital Infrastructure***

To assess the level of digital infrastructure in star-rated hotels, respondents were asked to rate four key indicators using a 5-point Likert scale ranging from 1 (Not at all) to 5 (To a very great extent). The items focused on internet connectivity, reservation systems, IT maintenance, and availability of digital tools. Table 2 presents the mean scores and standard deviations for each item, offering insights into how consistently and extensively these digital infrastructure components are implemented across the sampled star-rated hotels**.**

**Table 2: Descriptive Statistics on Digital Infrastructure**

| Digital Infrastructure | Mean | SD |
|---|---|---|
| Our hotel has reliable internet connectivity. | 4.30 | 0.65 |
| We use modern reservation and POS systems. | 4.10 | 0.72 |
| Our IT systems are regularly updated and maintained. | 4.05 | 0.70 |
| We have adequately skilled staff to support digital operations. | 4.15 | 0.68 |

Data from Table 2 indicates that the mean scores ranged from 4.05 to 4.30, with Standard deviations of between 0.65 and 0.72. These are relatively low standard deviations, which suggest that most of the star-rated hotels consistently report strong digital infrastructure. The highest-rated item, internet connectivity (SD = 0.65), shows near-universal agreement on its reliability. This implies that digital infrastructure is well-established and adopted across hotels. Table 3 presents the descriptive statistics on the digital strategy.

**Table 3: Descriptive Statistics on Digital Strategy**

| Digital Strategy | Mean | SD |
|---|---|---|
| We have a clearly defined digital strategy. | 3.90 | 0.80 |
| Digital goals are aligned with business objectives. | 4.00 | 0.70 |
| Management actively supports digital initiatives. | 3.95 | 0.75 |
| Our digital strategy is regularly reviewed and updated. | 3.85 | 0.78 |

Data from Table 3 indicates that mean scores ranged from 3.85 to 4.00, with SDs between 0.70 and 0.80. The SDs are slightly higher, and this indicates variation in how the star-rated hotels approach digital strategy. The statement that we have a clearly defined digital strategy (SD = 0.80) shows the most variability, suggesting that some hotels lack formal digital planning. The implication of this is that while digital strategy is present, its maturity and clarity varies across the star-rated hotels. Table 4 presents the descriptive statistics on data analytics.

**Table 4: Descriptive Statistics on Data Analytics**

| Data Analytics | Mean | SD |
|---|---|---|
| We use data analytics to understand customer behaviour. | 4.20 | 0.68 |
| Data insights inform our marketing decisions. | 4.05 | 0.72 |
| We have tools to analyse customer feedback. | 4.00 | 0.70 |
| Analytics help us improve operational efficiency. | 4.10 | 0.69 |

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Data from Table 4 shows that the mean scores range from 4.00 to 4.20, with SDs between 0.68 and 0.72. The SDs are moderate, showing general agreement with some variation. The statement that we use data analytics to understand customer behaviour (SD = 0.68) is the most consistent, indicating widespread use. This implies that data analytics is actively used, especially for customer insights, though the depth of use may differ among the star-rated hotels. Table 5 presents descriptive statistics on customer data management, which was the first dimension of customer relationship management capability.

**Table 5: Descriptive Statistics on Customer Data Management**

| Customer Data Management | Mean | SD |
|---|---|---|
| We maintain accurate and up-to-date customer records. | 4.25 | 0.60 |
| Customer data is securely stored and protected. | 4.15 | 0.65 |
| We integrate customer data across departments. | 4.20 | 0.62 |
| We comply with data privacy regulations. | 4.10 | 0.66 |

Data for Table 5 indicated that the mean scores ranged from 4.10 to 4.25, with SDs between 0.60 and 0.66. The standard deviations are low, and this signifies strong consistency in the responses. The statement that we maintain accurate and up-to-date customer records (SD = 0.60) reflects near-universal agreement on customer data quality. The implication of this is that star-rated hotels consistently applied customer data management practices. Table 6 represents descriptive statistics on personalisation capability.

**Table 6: Descriptive Statistics on Personalisation Capability**

| Personalization Capability | Mean | SD |
|---|---|---|
| We tailor services based on customer preferences. | 3.85 | 0.78 |
| Our marketing messages are personalised. | 3.90 | 0.75 |
| We use customer data to customise guest experiences. | 3.95 | 0.74 |
| Personalised offers are sent to repeat customers. | 3.80 | 0.79 |

Data from Table 6 indicates that the mean scores ranged from 3.80 to 3.95, with SDs between 0.74 and 0.79. The standard deviations are quite high, and this indicates diverse levels of personalisation among the star-rated hotels. The statement that personalised offers are sent to repeat customers (SD = 0.79) showed the most variation, which suggests uneven adoption among the hotels. This implied that personalisation capability is emerging but not consistently implemented across the star-rated hotels. Table 7 presents descriptive statistics on customer engagement.

**Table 7: Descriptive Statistics on Customer Engagement**

| Customer Engagement | Mean | SD |
|---|---|---|
| We actively engage customers through digital platforms. | 4.10 | 0.68 |
| We respond promptly to customer feedback online. | 3.95 | 0.75 |
| We encourage customer interaction and loyalty. | 4.05 | 0.70 |
| We monitor and improve customer satisfaction regularly. | 4.00 | 0.72 |

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Data from Table 7 shows that the mean scores ranged from 3.95 to 4.10, with SDs between 0.68 and 0.75. The standard deviations are moderate, and this means there was general consistency in the responses with some variation. The statement that we respond promptly to customer feedback online (SD = 0.75) suggests differences in responsiveness across hotels. This implies that customer engagement is a strategic focus of the star-rated hotels, even though execution varies slightly among the hotels.

**Reliability of the Research Instrument and Tests of the Assumptions of Regression Analysis**

To assess the internal consistency of the measurement scales used in this study, Cronbach's alpha coefficients were computed for each construct. A coefficient of 0.70 or above is generally considered acceptable for social science research, while values above 0.80 suggest good reliability. In this study, the constructs Digital Infrastructure (0.84), Digital Strategy (0.88), Data Analytics (0.86), Customer Data Management (0.87), Personalisation Capability (0.82) and Customer Engagement (0.84) all recorded alpha values that exceeded the recommended threshold, confirming that the items within each scale reliably measured the intended concept. This supports the validity of the instrument and ensures that subsequent analyses, such as regression and correlation, are based on robust and consistent data. Concerning the tests of the assumptions of regression analysis, the Shapiro-Wilk and Kolmogorov-Smirnov tests had p-values greater than 0.05, and this indicated that the data collected on the study variables were normally distributed. Linearity was confirmed with the values of significant deviation from linearity being greater than 0.05. The Durbin-Watson test for autocorrelation had values close to 2, which was a confirmation that autocorrelation was not present in the data collected on the study variables. To assess multicollinearity among the independent variables, collinearity diagnostics were conducted. The Variance Inflation Factor (VIF) values ranged from 1.54 to 1.72, and Tolerance values were all above 0.58, indicating that multicollinearity was not a concern in the regression model. These results confirm that the predictors are sufficiently independent to yield reliable estimates of their effects on CRM capability.

**Testing the Effect of Digital Transformation on Customer Relationship Management Capability**

The influence of Digital transformation on CRMC was tested using multiple regression analysis with digital infrastructure, digital strategy and data analytics as the independent variables and customer relationship management capability as the dependent variable. Table 8 provides the results of the model summary.

**Table 8: Model Summary of the Effect of Digital Transformation Dimensions on Customer Relationship Management Capability**

| **Model Summary** | | | | |
|---|---|---|---|---|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .816[a] | .666 | .636 | .53527 |

a. Predictors: (Constant), Digital Infrastructure, Digital Strategy, Data Analytics

**Source:** Research Data (2025)

From Table 8, the adjusted R-squared was 0.636, and this implied that the digital transformation dimensions of digital infrastructure, digital strategy and data analytics explained 63.6% of the variation in customer relationship management capability of star-rated hotels in Mombasa County. The remaining 36.4% was attributed to other factors that were not covered by this study. Given the presence of multiple predictors in the regression model, adjusted R-squared offers a more reliable basis for comparing model variants and interpreting the proportion of variance explained by the independent variables. The relationship between digital infrastructure, digital

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strategy, data analytics and customer relationship capability was positive and strong as indicated by a correlation coefficient of R = 0.816. Table 9 provides the results of the Analysis of Variance (ANOVA) of the digital transformation dimensions and customer relationship management capability.

**Table 9: ANOVA[a] Results of the Effect of Digital Transformation Dimensions on Customer Relationship Management Capability**

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 18.871 | 3 | 6.290 | 21.955 | .000[b] |
| | Residual | 9.455 | 33 | .287 | | |
| | Total | 28.326 | 36 | | | |

a. Dependent Variable: CRMC

b. Predictors: (Constant), Digital infrastructure, Digital Strategy, Data analytics

**Source:** Research Data (2025)

The ANOVA results in Table 9 indicated that the regression model was statistically significant (F = 21.955, p = 0.000). This is an indication that the combined predictors, digital Infrastructure, digital Strategy, and data Analytics explained a significant portion of the variance in CRMC of the star-rated hotels in Mombasa County. Table 10 provides the regression coefficients of the effect of digital transformation dimensions on customer relationship management capability.

**Table 10: Regression Coefficients of the Effect of Digital Transformation Dimensions on Customer Relationship Management Capability**

| Coefficients[a] | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **Unstandardized Coefficients** | | **Standardized Coefficients** | **t** | **Sig.** |
| | | **B** | **Std. Error** | **Beta** | | |
| 1 | (Constant) | 1.889 | .667 | | 2.832 | .008 |
| | Digital Infrastructure | .447 | .174 | .326 | 2.561 | .015 |
| | Digital Strategy | .786 | .174 | .623 | 4.523 | .000 |
| | Data Analytics | .273 | .131 | .240 | 2.087 | .045 |

a. Dependent Variable: CRMC

**Source:** Research Data (2025)

The standardised beta coefficients from the multiple regression analysis provide insight into the relative strength of each independent variable's influence on Customer Relationship Management Capability (CRMC). Among the predictors, Digital Strategy exhibited the strongest effect with a standardised beta of 0.623, indicating that improvements in strategic digital planning and alignment are most strongly associated with enhanced CRM capabilities. Digital infrastructure followed with a beta coefficient of 0.326, reflecting a moderate positive effect. This implies that reliable internet connectivity, modern reservation systems, and adequate hardware/software contribute meaningfully to customer relationship management capability, but are not as influential as strategic direction. Lastly, data analytics had the lowest beta value at 0.240, suggesting a weaker yet still positive relationship. While data analytics supports customer relationship management by enabling customer segmentation and predictive modelling, its impact may be limited by factors such as data quality, staff expertise or integration challenges.

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In relation to the study's hypotheses, the findings indicated that digital infrastructure had a positive and significant effect on the customer relationship management capability of the star-rated hotels, and this led to the rejection of $H_{01,}$ which stated that digital infrastructure has no significant effect on the customer relationship management capability of star-rated hotels in Mombasa County. The findings also showed that digital strategy had a positive and significant effect on the customer relationship management capability, and this led to the rejection of $H_{02,}$ which stated that digital strategy has no significant effect on the customer relationship capability of star-rated hotels in Mombasa County. Lastly, findings also indicated that data analytics had a positive and significant effect on the customer relationship management capability, and this led to the rejection of $H_{03,}$ which stated that data analytics has no significant effect on the customer relationship capability of star-rated hotels in Mombasa County.

## DISCUSSION OF FINDINGS

Overall, the results highlight that while all three dimensions of digital transformation positively and significantly influence customer relationship management capability, strategic orientation plays the most pivotal role. The first objective of the study was to examine the effect of digital infrastructure on the customer relationship management capability of star-rated hotels in Mombasa County. The findings showed that digital strategy had a positive and significant effect on the star-rated hotels' customer relationship management capability. This finding suggests that hotels with well-defined digital strategies, such as clear objectives, leadership commitment, and integration across departments, are more likely to leverage CRM systems effectively to personalise guest experiences and foster loyalty. This strategic direction ensures that technology investments are not isolated but contribute to personalised guest experiences, loyalty programs and long-term customer engagement.

The second objective of the study was to establish the effect of digital strategy on the customer relationship capability of star-rated hotels in Mombasa County. The findings showed that digital strategy had a positive and significant effect on the customer relationship capability of star-rated hotels in Mombasa County. This indicates that high-speed internet, modern reservation systems and robust hardware systems are essential for operational efficiency and seamless customer interactions at the start-rated hotels. However, the findings also show that digital infrastructure alone does not guarantee customer relationship management effectiveness unless it is guided by a clear digital strategy of the hotels.

The third objective of the study was to analyse the effect of data analytics on the customer relationship capability of star-rated hotels in Mombasa County. Findings from the data analysis indicated that data analytics has a positive and significant effect on the customer relationship capability of the star-rated hotels in Mombasa County. Data analytics was found to have a weaker effect on the customer relationship management capability of the star-rated hotels compared to digital strategy and digital infrastructure. This suggests that the potential of data analytics may be limited by issues such as integration challenges, lack of staff expertise and data quality. However, when properly implemented, data analytics can transform raw data into actionable insights that can be used by hotel management to enhance guest satisfaction and loyalty.

Overall, the findings indicated that digital strategy is the most critical predictor that sets the direction for customer relationship management effectiveness. Digital infrastructure provides the necessary backbone, but it requires strategic alignment. Data analytics adds intelligence and personalisation, but its effect on the customer relationship management capability of the star-rated hotels depends on their organisational readiness. These findings underscore the importance of not only investing in technology

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but also embedding digital transformation into the hotel's strategic framework to maximise customer relationship management effectiveness. The findings of this study are in tandem with recent studies who findings that emphasise the strategic role of digital capabilities in enhancing customer relationship management capabilities. For instance, findings of a study by Alhumud and Alsulami (2025) indicated that the integration of digital tools into CRM frameworks transforms customer engagement from transactional to strategic, reinforcing the importance of digital infrastructure and strategy in modern CRM systems. A study by Chatterjee and Chaudhuri (2023) also highlighted how digital transformation and artificial intelligence enhance CRM effectiveness by enabling personalised customer experiences and long-term retention strategies. Additionally, the study by Jabado and Jallouli (2024) demonstrates that the use of data analytics by firms significantly improves CRM outcomes by enhancing system quality, customer satisfaction, and employee interaction management. These studies collectively support the conclusion that digital infrastructure, digital strategy and data analytics are pivotal in driving CRM capabilities of business firms, and this echoes the significant effect of digital transformation that was observed in this study.

## CONCLUSION

The findings of this study indicate that all three dimensions of digital transformation (Digital infrastructure, Digital strategy and Data analytics) have a positive and statistically significant effect on CRMC of the star-rated hotels in Mombasa County. Digital strategy was found to be the most significant predictor of the hotel's customer relationship management capability. Therefore, this study concludes that digital transformation positively and significantly affects the customer relationship management capability of start-rated hotels in Mombasa County, Kenya, with digital strategy having a stronger effect than digital infrastructure and data analytics. This underscores the critical role of strategic alignment, leadership commitment, and cross-functional integration in driving customer relationship management capabilities. Hotels that embed digital transformation into their strategic planning are better positioned to personalise guest experiences, manage customer data, and foster long-term loyalty. The results also imply that while digital infrastructure and data analytics contribute meaningfully to CRM capability, their impact is comparatively moderate. This suggests that having digital technology alone is insufficient without a guiding strategic framework. These findings align with global research findings, and this reinforces the notion that digital maturity is a key enabler of customer-centric innovation in the hospitality sector.

## Recommendations

Based on the findings, several actionable recommendations are proposed to enhance customer relationship management capability through digital transformation in star-rated hotels. The first one is prioritisation of strategic digital planning. The management of the hotels should develop and continuously refine digital strategies that align with organisational goals and customer expectations. This includes setting clear objectives, allocating resources, and fostering a culture of innovation. Strategic planning should not be treated as a one-time exercise but as an evolving roadmap that guides digital investments and CRM initiatives. Secondly, the management of the star-rated hotels should invest in scalable digital infrastructure. This is because digital infrastructure is the foundation of digital transformation, and therefore the management of the hotels should ensure they have reliable internet connectivity, modern reservation and point of sale systems and robust IT maintenance protocols. These systems must be scalable to accommodate future growth and integration with CRM platforms. Thirdly, the management should enhance the hotels' data analytics capabilities. This is because, to fully leverage CRM systems, hotels must build capacity in data analytics, and this requires training of hotel staff in data interpretation, investing in analytics tools and establishing protocols for data governance.

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Improved analytics will enable hotels to segment customers, predict behaviour, and personalise services more effectively.

The fourth one is that management of the star-rated hotels should foster cross-functional collaboration within the hotels. This is because digital transformation should be a shared responsibility across departments. Marketing, IT, operations, and customer service teams must collaborate to ensure that CRM systems are used consistently and strategically. This will enhance data flow, reduce the silo mentality and improve customer engagement. The fifth recommendation is that government bodies such as the Tourism Research Institute and the Ministry of ICT should support digital transformation through incentives, staff training programs, and infrastructure development. Industry associations can also play a role by facilitating knowledge sharing and benchmarking best practices. This recommendation reinforces the study's findings by advocating for systemic support from government bodies and industry associations. Such support is essential for translating digital strategy, infrastructure, and analytics into tangible CRM improvements. By promoting incentives, capacity-building, and shared learning, these institutions can help scale the digital transformation efforts of star-rated hotels that were validated by this research.

**Suggestions for Further Study**

While this study has provided valuable insights into the impact of digital infrastructure, digital strategy, and data analytics on customer relationship management capabilities of star-rated hotels in Mombasa County, future research could explore several complementary areas. First, longitudinal studies could assess how these digital factors influence CRM performance over time, especially in rapidly evolving sectors like tourism and retail. Second, comparative studies across different industries or regions could reveal contextual differences in digital adoption and CRM outcomes. Additionally, future research could incorporate qualitative methods to capture deeper organisational perspectives on digital transformation, including challenges, cultural factors, and leadership dynamics. Expanding the scope to include emerging technologies such as artificial intelligence and machine learning in CRM systems would also enrich the understanding of digital maturity and customer engagement.

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Article DOI: https://doi.org/10.37284/eajbe.9.1.4298

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