EFFECT OF DIGITAL TECHNOLOGY ON STRATEGY FORMULATION BY REAL ESTATE AGENCY COMPANIES IN NAIROBI, KENYA

BY

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DECLARATION

This research project is my original work and has not been presented to any university, college or institution, for the conferment of any degree, diploma or certificate.

Signature ________________________ Date __***4th December, 2023***__________

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This research project has been submitted for examination with my approval as University Supervisor.

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DEDICATION

I dedicate this project to my family.

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I thank my Supervisor, Prof. Kennedy Ogollah, for his guidance and knowledge sharing which enable me to conclude this project successfully. My appreciation to the lecturers as well as colleagues at the University of Nairobi for knowledge sharing with me. I also appreciate my friends as well as the family for their support. I would finally want to thank God for guiding me this far.

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ABBREVIATIONS AND ACRONYMS

CRM	Customer Relationship Management
IoT	Internet of Things
PESTLE	Political, Economic, Sociological, Technological, Legal and Environmental
SWOT	Strengths, Weaknesses, Opportunities, and Threats

ABSTRACT

The objective of this study was to determine the effect of digital technology on strategy formulation by real estate agency companies in Nairobi, Kenya. The study was supported by diffusion of innovation theory and resource-based view. The study adopted a cross-sectional survey on a population of 300 registered real estate companies in Nairobi. A total of 169 respondents' real estate companies was sampled. Primary data was collected using a self-administered questionnaire. The study adopted descriptive statistics for analysis in addition to correlation and regression analysis. The findings showed that the respondents agreed that their organizations had adopted digital technology in their business. The digital technologies related to social media and online advertising together with data analytics for market insights and digital channels for engagement with clients together with customers. The findings further showed that the organizations failed to train the employees on the usage of these digital technologies. The findings also showed that digital technology and strategy formulation had a positive relationship shown by a correlation coefficient of 0.539 (p=0.000). The regression analysis showed that digital technology had a significant effect on strategy formulation shown by regression coefficient of 0.571 (p=0.003). The study concluded that digital technology has a significant effect on strategy formulation of real estate agents in Nairobi. The study recommends that real estate agents in Nairobi increase their adoption of emerging technologies for improved strategy formulation. They also need to come up with digital training programs aligned to the strategic objectives. This study will have implications to practice, policy and theory. This will be based on the study providing an understanding on how digital technologies affect the strategy formulation within real estate agents. The real estate agents with the understanding will be able to come up with strategies that will enhance strategy formulation through digital technologies. The policy makers would also come up with relevant policies for improved strategy formulation and adoption of digital technologies in the real estate sector. The study will add on the strategic management literature in relation to strategy formulation and the role of digital technologies.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

In recent decades, the rapid advancement of digital technology has revolutionized the global business landscape, ushering in unprecedented connectivity, accessibility, and innovation (Allioui & Mourdi, 2023). This transformation has significantly influenced how organizations devise and implement their strategies to remain competitive and sustainable in an increasingly dynamic environment. Kenya, a vibrant hub of economic activity and technological innovation in East Africa, stands at the forefront of this digital revolution (Ndung'u, 2019). The integration of digital technology in various sectors of the Kenyan economy has led to profound shifts in business models, consumer behavior, and market dynamics, necessitating a reevaluation of traditional approaches to strategy formulation (Friederici et al., 2020). Strategy formulation is the pillar of the strategic planning procedure, and it involves developing long–term plans to efficiently manage environmental prospects and challenges in the light of business weaknesses and strengths (Wheelen & Hunger, 2002). Real estate agents are involved in selling, buying, or letting real property on behalf of their principles (Brummer & Loko, 2014) and must keep abreast with the changing dynamics by applying modern methods. Digital technology, therefore, plays a crucial role in strategy formulation and eventually ensures successful implementation of the same (McAfee, 2002).

The study was anchored on the diffusion of innovation (DOI) theory, which helped real estate agents recognize the stages at which different individuals or competitors in the industry adopt digital technology (Sani, 2022). This is because digital technology has transformed the real estate industry, with tools like property listings, virtual tours, and CRM software becoming essential. Resource-Based View (RBV) also supports the study by emphasizing the importance of leveraging unique and valuable digital resources and capabilities to gain a competitive advantage in the real estate industry (Okorie et al., 2023). Real estate agents could use RBV to guide their strategy formulation by identifying, nurturing, and strategically deploying digital technologies that set them apart in the market and improve their overall performance.

The emergence of digital technology has empowered businesses in Kenya to expand their reach, optimize operations, and enhance customer experiences (Tang, 2022; Karu, 2022). The proliferation of smartphones, widespread access to the internet, and the surge in e-commerce platforms have created a dynamic ecosystem where businesses can interact with customers in ways previously unimaginable. This shift has prompted organizations such as real estate agents to rethink their market positioning, product offerings, and distribution channels and harness data-driven insights for informed decision-making (Hinga, 2022). The integration of digital technology has disrupted traditional industry boundaries and introduced new players, often startups and tech-driven enterprises, capable of swift market entry and rapid scalability (Lubasi & Muthu, 2021). This has compelled established businesses in Kenya to be agile, innovative, and adaptable in order to maintain their competitive edge. Additionally, emerging technologies such as artificial intelligence, blockchain, and the Internet of Things (IoT) have opened up entirely new avenues for revenue generation, operational efficiency, and customer engagement, further reshaping the strategic landscape.

1.1.1 Digital Technology

Digital technology is any device or system that utilizes computer-based or digital software or hardware (Webster & Webster, 2018). This incorporates personal computers, cell phones, tablets, the web, online entertainment stages, and other computerized devices. According to Bryanjolfsson & McAfee (2014), digital technology has changed industries by making it possible to communicate in real time, increase global connectivity, and increase efficiency. Society has been transformed by digital technology, which has profoundly altered how people work, communicate, and access information. In addition, it has enabled people with instant access to huge amounts of data and assets. However, debates surrounding digital technology have emerged due to its potential implications. Issues regarding data privacy and security are among the main topics of discussion globally, especially collecting, storing, and using personal information as a result of high dependence on digital platforms (Acquisti et al., 2015). Information breaches, online reconnaissance, and designated publicizing ignite issues about individual security freedoms and the requirement for guidelines to safeguard clients' information (Turow, 2017). Automation through artificial intelligence and robotics has led to fears of certain job roles becoming obsolete (Brynjolfsson & McAfee, 2014). While some argue that digital technology will create new job opportunities, concerns remain about unemployment rates and economic inequalities resulting from automation (Frey & Osborne, 2017).

Another area of debate is the social impact of digital technology. While it has undoubtedly facilitated global communication and connected people worldwide, some argue that it has led to social isolation and a decline in face-to-face interactions (Turkle, 2011). The prevalence of social media platforms has raised concerns about addiction, mental health implications, and misinformation (Kuss et al., 2013). Moreover, technological gaps, characterized by unequal access to internet connectivity to electronic systems, have been a serious issue impacting a vast number of individuals (Warschauer, 2014), thereby escalating social inequality. It is important to remember that digital technology is valuable and can be used in business. The ease of accessing and disseminating information makes it desirable in the business community, including in real estate agencies. As Chaffey (2013) states, digital marketing is a part of digital technology that enables marketing services to advance client awareness by matching their wants and needs.

Despite digital technology being faced with several disadvantages in the business sector, it is essential to discuss the positives of the technology to different businesses, such as real estate businesses. Digital technology in real estate businesses has been helpful in developed countries as it aids in marketing, among other activities. The stated debates rarely affect the economic side of digital technology. Third-world countries such as Kenya have, however, needed to be studied more in terms of the effects of digital technology on real estate businesses. This study aimed to explore digital technology so as to identify its impacts on businesses (more so real estate businesses) in developing countries such as Kenya. It explored the opportunities as well as challenges faced by real estate agencies in Nairobi as a result of using digital technology.

1.1.2 Strategy Formulation

Strategy formulation encompasses the identification of goals and objectives and the development of a plan to achieve them (Chofreh et al., 2021). It involves analyzing the organization's internal and external environment, assessing strengths and weaknesses, identifying opportunities and threats, and making decisions about the best course of action. Strategy formulation typically includes defining the organization's mission, vision, values, and strategic objectives. Various frameworks and implementations, including PESTEL, SWOT analysis with Porter's Five Forces, are often utilized to assess the internal and external environment and identify strategic options.

In studying strategy formulation, some issues have emerged due to its complexity and the challenges associated with its implementation (Hitt et al., 2019). One key debate revolves around the effectiveness of traditional, top-down approaches versus more flexible, adaptive approaches. Traditional strategic planning models, characterized by long-term, hierarchical decision-making processes, have been criticized for their rigidity and inability to respond to rapidly changing environments. Critics argue that strategy formulation should be a continuous, iterative process allowing flexibility, experimentation, and adaptation to dynamic conditions (Eisenhardt & Sull, 2001).

The role of strategic leadership and the participation of various investors in the formulation practice is another area of concern. Some argue that strategy formulation should be a top-down process led by senior executives, ensuring alignment with organizational goals and objectives (Hrebiniak, 2006). Others advocate for a more inclusive approach involving employees, customers, suppliers, and other external stakeholders to capture diverse perspectives and enhance commitment and implementation (Bryson et al., 2011). There are debates regarding the relevance and applicability of strategy formulation frameworks in different contexts. Some argue that traditional frameworks may not adequately capture the complexity and uncertainties associated with today's business environments. This study adopted the stance that concerning the debates, an integrative, context-specific method that deliberates technical interferences, globalization, and social trends.

1.1.3 Real Estate Agency in Kenya

An agency typically refers to a relationship involving a principal and an agent, where the agent is granted the authority to act on behalf of the principal in diverse transactions. According to Loko (2013), a real estate agency pertains to selling, purchasing, or leasing real property on behalf of others in exchange for a commission. In this context, the agent serves as an intermediary, facilitating connections between buyers and sellers or landlords and tenants without assuming property ownership. This arrangement becomes more advantageous when the principal believes involving estate agents will lead to more effective outcomes due to their training, networks, and expertise in the real estate market (Dabara & Oyewole, 2015).

The real estate agency sector has expanded significantly over time, primarily driven by the growth of the real estate market in Kenya, which witnesses the construction of new buildings daily to accommodate the rising population. As more agents enter this field, competition has intensified, necessitating the adoption of more efficient property marketing methods. Chomba (2013) contends that the Kenyan real estate industry has undergone substantial changes as estate agents incorporate enhanced marketing strategies and integrate the Internet into their business models in various capacities.

In general, Nairobi is the largest city in Kenya and East Africa, serving as a focal point for construction activities. Its attractiveness to investors from both the region and globally is attributed to its promising returns on investment. Consequently, this has attracted a majority of estate agents to Nairobi, as nearly 80% of registered estate agents in Kenya have established their offices in the city.

1.1.4 Digital Technology by Real Estate Agency Companies in Nairobi

The real estate industry in Nairobi, Kenya, has experienced a significant transformation in recent years, driven largely by integrating digital technology into its operations (Gerstenberg, 2022). Real estate agents, in particular, have been compelled to adapt their strategies to leverage the opportunities presented by these technological advancements while addressing the unique challenges that arise in a dynamic marketplace.

The digital revolution has disrupted traditional practices in the real estate industry, offering new tools, channels, and data-driven insights that have reshaped how agents approach their business (Karbolo, 2021). As a rapidly growing urban center, Nairobi has seen a surge in demand for real estate services, accompanied by increased competition among agents. In response, real estate professionals have embraced digital technology to enhance their market presence, streamline operations, and better serve their clientele. One of the most notable effects of digital technology on real estate strategy formulation in Nairobi is the transformation of marketing and sales tactics. Online platforms, social media, and property listing websites have become crucial tools for agents to showcase properties, attract potential buyers or renters, and establish their digital footprint. Consequently, real estate agents have had to adapt their marketing strategies to align with the digital preferences of their target audiences, making online visibility and engagement a cornerstone of their approach.

Digital technology has revolutionized the way real estate agents manage their portfolios. Property management software, customer relationship management (CRM) systems, and online communication tools have streamlined administrative tasks, allowing agents to focus more on providing personalized services to clients (Gerstenberg, 2022). Automation has also enabled agents to efficiently track property listings, market trends, and client preferences, facilitating informed decision-making in strategy formulation. Data analytics and market research tools have become instrumental in identifying investment opportunities, pricing strategies, and market trends. Real estate agents in Nairobi can harness data to develop data-driven strategies that enhance their ability to connect buyers and sellers and optimize their overall business performance.

1.2 Research Problem

As digital technology continues to evolve, it fundamentally changes how businesses operate. Like those in many other industries, real estate agents in Nairobi must adapt to these advancements to remain competitive and relevant in the market (Wanjiru, 2019). Understanding how digital technology affects strategy formulation allows real estate agents to gain a competitive advantage (Kamau, 2019). Those who effectively leverage technology can streamline operations, reach a wider audience, and provide enhanced services to clients, putting them ahead of competitors who may need to be faster to adopt digital strategies.

The real estate market in Nairobi is dynamic and competitive, and digital technology could provide them with valuable insights into market trends, customer preferences, and emerging opportunities (Ndung'u et al., 2020). Real estate agents make more informed strategic decisions by studying the effects of digital technology. Barkham et al. (2022 noted that digital tools and platforms can significantly increase efficiency and productivity in real estate operations. Studying the impact of technology on strategy formulation allows agents to identify ways to automate tasks, reduce administrative overhead, and improve overall workflow. Kamau (2019) noted that over the last decade, there has been an increasing use of the digital world by real estate agents as customers have come to expect streamlined, tech-savvy services. Chege et al. (2020) posit that real estate agents must align their strategies with customer expectations, which are often influenced by digital experiences. Thus, digital technology offers powerful marketing and communication channels, such as the use of social media. Consequently, real estate agents must understand how to effectively use social media, online advertising, property listing websites, and other digital tools to reach and engage potential clients. These provide access to vast amounts of data that real estate agent analysts can harness to make data-driven decisions about pricing, property selection, and market trends.

However, adopting digital technology can also introduce new risks, such as cybersecurity threats and data privacy concerns (Habibzadeh et al., 2019). These have made some real estate agents shun their use despite heavy need. Thus, researchers have aided real estate agents in studying the effects of digital technology in order to develop strategies for mitigating these risks. Therefore, the current study is guided by the fact that there is a rapidly evolving real estate landscape in Nairobi, Kenya, characterized by increasing urbanization, population growth, and technological advancements. Real estate agents are confronted with the urgent need to understand and adapt to the transformative impact of digital technology on strategy formulation. As the market becomes more competitive and customers' preferences shift towards digital interactions, there is a pressing concern regarding the extent to which real estate agents in Nairobi are effectively integrating digital technology into their strategic planning processes. Thus, the study needs to answer question, does digital technology affect strategy formulation by real estate agency companies in Nairobi, Kenya?

1.3 Research Objective

The objective of this study was to determine the effect of digital technology on strategy formulation by real estate agency companies in Nairobi, Kenya.

1.4 Value of the study

The research is important to academics and business researchers as they can develop their research works by borrowing from and developing this line of research further. It will also inform them of the extent of the use of digital technology and its influence on strategy formulation in Kenya among marketers. This study will also be important to real estate firms (practitioners) as they will know how much digital technologies, as part of the external environment, affect their strategies. In addition, they will enhance digital marketing as one of the marketing methods by allocating more resources to ensure better yields.

It will also be important to real estate developers, buyers, and tenants alike as they will understand how the estate agent, as the link, can streamline the process and make buying or leasing properties easier and more efficient. It is also important to providers of internet platforms that estate agents use, such as Property 24 and Buyrent Kenya, as they will understand the importance of their services in this field and help them make these platforms reliable and user-friendly.

This research would also be important to the government for policy making. It is especially crucial since digital technology is relatively new, and many areas require regulation. With this study, the government can pick up several points that will assist in developing policies in this field. Other policy makers may also find the study as a source of information that would guide policies related to digital technologies and strategy formulation.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter examined the related studies as presented by other researchers. This included the relevant theories anchoring this study and studies on digital technology and strategy formulation. It also identified the knowledge gaps in the previous studies and how they were addressed in this study.

2.2 Theoretical framework

The study was anchored by two theories: Diffusion of Innovation Theory and resource-based view (RBV) theory. These theories were explained in terms of their origin, development, assumptions, justification and critique in order to demonstrate their relevance to the study.

2.2.1 Diffusion of Innovation Theory

Diffusion of Innovation (DOI) Theory was developed by Everett M. Rogers in 1962, and it is a commonly standard theory that describes how innovations are adopted, accepted, and spread within a society or a social system (Rogers et al., 2014). This theory is especially relevant in understanding how digital technology adoption occurs within various industries, including real estate. The main components of the theory entail an innovation referring any new idea, practice, technology, or product that is perceived as new by individuals or groups within a society. For instance, digital technologies such as online property listings, virtual property tours, or blockchain-based property records can be considered innovations.

The theory introduces five distinctive factors that can either enhance or hinder the acceptance of new ideas, technologies, or practices (Sani, 2022). These factors are compatibility, trialability, relative advantage, complexity, and observability. Rogers categorizes individuals along a continuum of innovation adoption, encompassing innovators as the earliest adopters, followed by early adopters, the early majority, the late majority, and laggards. The theory elucidates how innovation slowly spreads within a given market or user system. Within this framework, possible users exchange information and opinions about novel technologies through various communication channels. Furthermore, DOI posits that the adoption of new technologies can be observed at three levels (MacVaugh & Schiavone, 2010): the macro level, involving industry or market sectors; the meso level, which comprises the network of social relationships within which potential adopters are situated; and the micro level, which focuses on individual analysis and understanding of the innovation process. DOI offers an approach to understanding how novel practices, concepts, or technologies become integrated into a social system. However, a notable critique of the model is that it should consider the complex interplay of different contexts and domains where entirely new technologies are employed. In this specific study, DOI's emphasis lies in facilitating an understanding of why and how real estate agents introduce and spread technologies and innovative concepts, as well as how clients adopt various innovations within the real estate sector.

2.2.2 Resource-based View Theory

The foundation of the RBV theory is dated back to the seminal works of Edith Penrose and Richard Nelson. Penrose (1959) emphasized the significance of firm-specific resources in shaping firm growth while Nelson's research on the role of technological innovation and its impact on competitive advantage also contributed to the early development of the RBV theory (Nelson, 1991). The RBV theory gained substantial recognition and refinement through the contributions of scholars such as Jay Barney, Birger Wernerfelt, and Gary Hamel. Barney (1991) laid the foundation for the RBV theory by emphasizing the importance of firm resources as a source of sustained competitive advantage. The RBV theory is based on several key assumptions. Firstly, it assumes that firms are heterogeneous in terms of their resource endowments, where each firm possesses a unique bundle of resources and capabilities which can be classified as tangible and intangible (Wernerfelt, 1984). It also assumes that these resources are not perfectly mobile across firms. The immobility of resources creates the potential for sustained competitive advantage, as firms can leverage their unique resources to achieve superior performance (Barney, 1991). Thirdly, RBV assumes that strategic decision-making involves resource allocation and the alignment of resources with the firm's strategy (Grant, 1991).

The RBV theory justified its focus on internal resources and capabilities by arguing that they are the main drivers of a company's competitive advantage. According to RBV, industry attractiveness and external market forces alone do not fully explain why some firms outperform others. Instead, the possession of resources that are valuable, rare, inimitable, and non-substitutable enables firms to achieve sustained competitive advantage

(Barney, 1991). However, RBV theory has encountered several critiques over time. One critique is that RBV lacks a clear framework for analyzing the dynamic nature of resources and capabilities. In a fast-fluctuating business environment, resources can quickly become outdated or lose their value, necessitating continuous adaptation and renewal (Helfat et al., 2007). It has also been criticized for its limited attention to external factors and industry dynamics. While RBV argues that a firm's resources can compensate for industry disadvantages, it may overlook the importance of industry structure and competition in shaping a firm's competitive advantage (Peteraf, 1993). Critics also argued that the resource criteria may not be sufficient to explain sustained competitive advantage, as competitors can often imitate or substitute resources and capabilities over time (Barney & Clark, 2007).

2.3 Digital Technology and Strategy Formulation

The real estate industry is experiencing a digital revolution, reshaping the way real estate agents formulate and execute their strategies. The rapid implementation of digital technology in the real estate industry has been a focal point of research. For instance, scholars like Gruzd and Haythornthwaite (2013) highlight how real estate agents are leveraging social media platforms to connect with potential clients and promote listings, emphasizing the importance of digital presence in strategy formulation. The ability to harness data for informed decision-making is a critical aspect of strategy formulation. Research by Brynjolfsson and McAfee (2014) underscores how data analytics and AI tools empower real estate agents to understand market trends, pricing dynamics, and customer behavior, ultimately shaping their strategies. Digital marketing has become a cornerstone of real estate agents' strategies. Chaffey et al. (2019) examined the use of digital advertising, content marketing, and email campaigns to engage potential clients, extend market reach, and optimize lead generation. The findings from this research showed that the cost that come with digital strategies as well as the lack of digital skills lead to poor formulation of strategies. Schallmo, Williams and Lohse (2019) on the other hand found digital technology to be a non-significant factor influencing strategy formulation. They saw no connection between the way organizations formulate strategy and the digital technologies.

Frey and Osborne (2017) conducted a study on the future of employment, which described how technology is used in organizations to enhance strategy formulation by programming various progressions to allow organizations to operate faster, more precisely, consistently, and cheaper. The attention is mainly on the mechanization of labor-intensive practices in the organization with a goal of cost reduction mainly from internal sources. An organization can aim at three main automation objectives: communication efficiency, business efficiency, and cost reduction. These objectives help the organization address collaboration gaps within and outside the firm, enable faster execution of activities, and enhance the overall efficiency of business processes.

Rana et al. (2012) conducted a study on the impact of information technology on strategy formulation in the banking sector of Pakistan, which discussed how digital technology plays a critical role in many aspects of any organization and has been considered important in providing organizations with the necessary competitive advantage in rapidly changing markets. The creation and staffing of IT departments in organizations confirms the importance of digital technology in organizations. The authors describe how digital technology powers international markets, thus underscoring the significance of technology officers in strategic roles and their effect on deliberate decision-making. Organizations realize the prominence of digital technology and its vital role in competitive advantage, and managers in these departments are progressively joining executive or senior organization groups. In this way, organizations safeguard the best alignment between IT and the organization’s corporate approaches.

Bordean et al. (2010) conducted a study investigating the strategy formulation process within Romanian firms, specifically on managerial challenges of modern-day society, which supported the idea that having enhanced technological competencies impacts the performance of organizations. As technology becomes progressively predominant and plays a superior role in strategic planning and influencing competitive advantage, businesses in the African region need to respond strategically to the development of newer technologies to uphold an edge. Technology plays an important role in planning organizational accomplishments successfully. Strategic information system planning (SISP) is important for organizational achievement concerning market competition. SISP develops strategic arrangements through technology. Supporting technology with strategic planning activities enhances organizational enactment.

Omalaja and Eruola (2011) conducted a study on strategic management theory: ideas, investigation, and reviews relative to commercial viable benefit from the resource-based philosophy, which argued that today's era is the technology age, where organizations can only achieve much success by integrating technology into their operations. This means that technology must be given special attention when formulating a strategy. Including technology in the strategy process has helped organizations achieve their objectives more efficiently, thereby increasing productivity and consumer benefits in the sub-Saharan African region. Technology continuously provides information flow, which is critical in formulating different strategies. The implementation of technology by organizations has become more crucial than before, and it is one of the most important strategies for successfully achieving set goals. The advancement has found a way of diminishing time and distance. It means that managers have to formulate forward-looking strategies that can cope with changes in the future. Digital technology provides a competitive advantage for organizations besides traditional systems. Advancement in digital technologies has made data access and analysis easier and more efficient, which has helped in the strategy formulation process, leading to productive and competent decision-making.

In a study by Bengi (2010), the focus was on the impact of information technology in shaping corporate strategies among companies listed on the Nairobi Stock Exchange. The research asserted that technology could catalyze transformative competitive advantages, generating innovative products, market openings, enhanced delivery approaches, operational processes, and organizational structures. He argues that an organization can create a competitive advantage or cut down on its competitors' existing advantages by introducing changes to its business developments through digital technology. He also states that digital technology can support organizational goals by enhancing business to react faster to alterations and by generating linkages with other companies in means that can lock them in or raise swapping expenditures. Bengi (2010) observed that technology affects organizations from three aspects: competitive, informational, and transactional or computerization. Digital technology can, therefore, be applied to develop approaches around the organization's objectives, which are the major gaps affecting the real estate organization. Competitive objectives mainly focus on applying technology to promote organizational improvement through modification. The competitive advantage can be attained through structuring digital technology and information competencies to change an organization and enhance organizational advantages. The focus allows businesses to accomplish internal and external integrations. Technology has been a competitive advantage, mainly when current human and business assets complete their competencies.

In another study, K'Akumu (2022) researched the regulatory environment of real estate professional services firms (PSFs) in Kenya. Property Management defined how informational objectives aim to attain efficiency by improving decision-making through organizational information structures to improve data processing. Enhanced decision-making enables firms to improve their operations as well as proactively respond to changes in the environment. Digital technology can directly affect policymakers' communication and computational abilities by shifting the limits of rationality, resulting in quality decision-making. The benefits of information objectives are broken down into information quality, access, and elasticity.

2.4 Summary Literature Review and Knowledge Gaps

The global studies such as those by Gruzd and Haythornthwaite (2013), Brynjolfsson and McAfee (2014), and Frey and Osborne (2017) identified in the section above acknowledged the influence of automation of objectives in enhancing cost reduction and work competencies. There needs to be more exploration of the opportunities and challenges identified by different real estate organizations in different regions. The studies emphasize the benefits of digital technology to the business sector but do not discuss the impacts of digital technology on industry-oriented strategies and policies that affect organizations' performance.

The continental and regional studies such as Frey and Osborne (2017), Rana et al. (2012) and Bordean et al. (2010) emphasize the impact of digital technology in strategy formulation among companies in the regions. The studies demonstrated how expansive the region's real estate and business market is growing, with numerous investors choosing to find solutions for the region's people. These investors are, however, faced with the problem of inadequate information on the challenges of how the people in the region respond to technological advancements. However, the studies need to discuss how real estate businesses can align their policies and strategies to emerging digital technology to enjoy maximum outputs. There needs to be more discussion of the technological impacts on real estate corporations in Africa.

Kenya enjoys huge digital technological advancements in most sectors apart from the real estate sector. Studies done on real estate companies in the country, such as those by K'Akumu (2022) and Bengi (2010), do not highlight the implications of adopting digital technologies among real estate companies. Specific areas like customer experience, streamlining operations, and marketing properties need further investigation. Based on the discussion in the literature review, it is evident that the real estate sector in Kenya is expanding rapidly, and digital technology has become an essential aspect in the formulation of strategies and policies among related businesses. Existing studies do not, however, answer the question of the strategies, challenges, and opportunities that are faced by real estate businesses in Nairobi, Kenya, when integrating digital technologies in their operations. This study, therefore, aims to address this gap and explore the impacts of digital technology on strategy formulation among real estate agency companies in the city. This study aims to provide practical recommendations for real estate agency companies to exploit the opportunities presented by digital technology so as to remain profitable in a highly competitive environment.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The chapter presented a brief on the research design and study population. The sampling design of the study population was also presented. The data collection procedure was presented together with validity and reliability procedure. The later sections in the chapter presented the data analysis that was used to inform the study objectives.

3.2 Research Design

A research design serves as a blueprint to acquire responses to research inquiries or examine hypotheses (Creswell and Creswell, 2017). The study adopted cross-sectional design. This is because the research method collected data from sales managers of real estate agency companies in Nairobi, Kenya. The design was also relevant in that it allowed the study to involve a considerable large number of real estate agency companies at the same time.

This survey approach was selected since it provided a snapshot of a population's characteristics, attitudes, behaviour, or opinions at a specific point in time (Kesmodel, 2018). This allowed researchers to gain insights into the current state of the population without the need for longitudinal data collection, which can be more time-consuming and expensive. Cross-sectional surveys are generally more cost-effective and quicker since they can collect data from a large and diverse sample of participants in a relatively short period, making them suitable for studies with limited resources.

3.3 Population of the Study

Population is defined as total collection of elements that conclusion was drawn (Cooper & Schindler, 2003). It represented the larger group from which a researcher draws a sample to gather data and make inferences. In this study, the population entailed registered real estate companies in Nairobi, Kenya.

The population in this study was represented by each correspondent. According to Akus (2023) there are 300 registered real estate companies in Nairobi. Therefore, the target population for the study was 300 registered real estate companies in Nairobi.

3.4 Sampling Procedure

In this section, the sample size was determined from the entire population. The sampling procedures for this study was determined using Krejcie and Morgan Table (1970). The sample was 169 real estate companies drawn from the target population of 300 real estate companies based on Krejcie and Morgan Table (1970) presented in a table in Appendix II.

The study was conducted in Nairobi County where a total of 169 respondents were selected. A random sampling technique was adopted to sample 169 companies' real estate companies from a possible 300 in Nairobi. The managing director of the real estate agent firm or the director in charge of the estate agency department was the respondent to fill in the questionnaire on-behalf of their companies.

3.5 Data Collection

This study was basically for collecting primary data. An organized questionnaire was self-administered to gather data from sampled real estate companies in Nairobi County. A questionnaire was preferred since it is less costly and quicker to administer. The questionnaire comprised statements rated on a Likert scale, offering responses that encompassed strongly agreeing, agreeing, remaining neutral, disagreeing, and strongly disagreeing.

Likert scale was used since they are easier to administer and to analyze. The questionnaire consisted of two parts where part I solicited general information about the real estate agent companies. The second part solicited information on the use of digital technology on the real estate companies. It also solicited information related to strategy formulation and how digital technology relate to strategy formulation in real estate agency companies in Nairobi County, Kenya.

3.6 Data Analysis

After collection of the questionnaires, the data was cleaned. In order to facilitate data analysis and limit the number of categories, coding of the responses was done. Responses to every question were then tabulated. The study employed a quantitative data analysis approach for a descriptive examination of the data, utilizing measures like central tendency, variability, and frequency, among others.

The data was presented in figures and frequency distribution tables. The effects of digital technology on strategy formulation were presented in the form of a correlation analysis that showed the strength and direction of the effect. Regression analysis was also conducted in order to understand how digital technology changes the strategy formulation. The interpretation and discussion of the results findings was compared to those from literature review.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the findings of the study based on research objective. This study sought to determine the effect of digital technology on strategy formulation by real estate agency companies in Nairobi, Kenya. This was done using descriptive statistics as well as regression analysis. The results were presented in tabular form for ease of interpretation. From the 169 respondents issued with questionnaires, only 153 of them filed and returned the questionnaires. This gave a response rate of 90.5%. This response rate was sufficient as it was above the recommended 50% for a quantitative study.

4.2 General information

The study sought to establish the general information relating to the respondents and the real estate agency companies. This included years of operation, number of employees, services offered, and geographical areas covered. They also looked at the digital technology mostly used in the real estate companies.

4.2.1 Year of Operations

The researcher requested the respondents to indicate the number of years their agency had operated. This would enable the researcher to establish whether the agents had operated for time enough to have adopted digital technologies and felt their effect on strategy formulation within the agents. These results are in Table 4.1.

Table 4.1: Years of Operation

Years	Frequency	Percent
Below 5 years	31	20.3
5-10 years	47	30.7
11-15 years	70	45.8
16-20 years	5	3.3
Total	153	100.0

Source: Research Data (2023)

From Table 4.1, majority of the agencies (79.7%) had operated for more than 5 years. This is reflected in 30.7% who indicated 5-10 years, 45.8% who indicated 11-15 years and 3.3% who indicated 16-20 years. However, 20.3% indicated that their firms had operated for less than 5 years. This shows that majority of the real estate agents in Nairobi have operated for more than 5 years which allows them to have adopted digital technologies and felt the effect on strategy formulation.

4.2.2 Number of Employees

The respondents were requested to indicate how many employees were in their companies. The number of employees play a key role in the strategy formulated as well as the adoption of digital technologies. Organizations with many employees may have the capacity and digital skills for effective adoption of digital technologies. The employees are also the source of ideas and so contributes positively to the strategies formulated within an organization. The results are shown by Table 4.2.

Table 4.2: Number of Employees

Employees	Frequency	Percent
Less than 10	32	20.9
10-20	70	45.8
21-30	37	24.2
More than 30	14	9.2
Total	153	100.0

Source: Research Data (2023)

From results in Table 4.2, 20.9% of the respondents indicated that their companies had less than 10 employees. However, 79.1% indicated that they had more than 10 employees. A 37.9% indicated 10-20, 32.7% indicated 21-30, while 20.3% indicated more than above 30 employees. This shows that the real estate agents in Nairobi have more than 10 employees.

The research also sought to find out services offered in the real estate agents in Nairobi. The findings showed that the agents offered services related to financial advisory, finding buyers, investment advice, leasing properties, and marketing. They also indicated valuation, property management, real estate consultancy and feasibility studies. They further offered services related to open houses, property development, property negotiation, property valuation and virtual tours.

The research also wanted to know geographical areas covered. From the findings, respondents agreed their agents operated in countrywide with others operating in Nairobi only. Others indicated Nairobi, Kisumu (Nyanza Region), Mombasa (Coast Region) and

Nanyuki (Central & Eastern Region). This shows that the real estate agents in Nairobi operate beyond the boundaries of the Nairobi city county.

4.2.3 Digital Technology Most Used

The researcher sought to know the digital technology mostly used in the real estate agents in Nairobi. This would create an understanding on the kind of technologies within the agents as well as the most used within these institutions. The findings are shown by Table 4.3.

Table 4.3: Digital Technology Most Used

	Frequency	Percent
Website	34	22.2
Social media platforms	69	45.1
Online property listing platforms	12	7.8
Mobile apps for property search and management	7	4.6
Email marketing	5	3.3
Virtual tours or 3D property visualization	20	13.1
Customer relationship management (CRM) software	6	3.9
Total	153	100.0

Source: Research Data (2023)

From the findings in Table 4.3, 45.1% indicated that they mostly used social media platforms. However, 22.2% indicated websites, while 13.1% indicated virtual tours and 3D property visualization in each case. Further, 7.8% indicated online property listing platforms, 4.6% indicated mobile apps for property search and management, 3.9% indicated customer relationship management (CRM) software while 3.3% indicated email marketing. This shows that real estate agents in Nairobi adopt various digital technologies.

4.3 Digital Technology

The study sought to describe digital technology within the real estate agents in Nairobi. This was done using mean and standard deviation. It's important to know the state of digital technologies within the organizations as it would determine the level of implementation. This would enable the researcher, then, to compare the technologies with strategy formulation. To do this, the researcher asked to indicate the extent to which they agreed on statements relating to digital technology. Table 4.4 presented the results.

Table 4.4: Agreement on Digital Technology Statements

	Mean	Std. Deviation
The company is proficient in using digital technology	1.8366	.77339
The company effectively uses digital platforms for property listings and showcasing.	4.2288	.57921
Digital technology impacts the operations of the real estate agency	4.0980	.67634
The company effectively leverages social media and online advertising for property marketing.	4.0065	.64376

The company employs data analytics to provide clients with market insights and trends.	4.1503	.62588
The company actively seeks client feedback and reviews through digital channels to improve its services.	3.9869	.66873
The company uses digital communication tools to keep clients informed on property updates and transactions.	4.3399	.56386
The company has realized profits as a result of digital integration.	4.3137	.46553
Stakeholders within the real estate industry welcome adopting digital technology in organization activities.	4.3007	.46005
The company provides training and development opportunities to enhance digital skills among employees	1.7451	.67404
Digital technology has positively impacted the company's overall competitiveness in the real estate market.	4.0327	.77305
I foresee digital technology playing a critical role in the future investment of real estate agents in Nairobi.	4.0131	.76077

Source: Research Data (2023)

As shown by Table 4.4, the respondents disagreed that their companies were proficient in using digital technologies with a mean of 1.8366 (SD=0.77339). However, they agreed that their companies effectively used digital platforms for property listings and showcasing as shown by a mean of 4.2288 (SD=0.57921); digital technology impacted the operations of their real estate agencies as shown by a mean of 4.0980(SD=0.67634); and that their companies effectively leveraged social media and online advertising for property marketing as shown by a mean of 4.0065 (SD=0.64376). The respondents further agreed that their companies employed data analytics to provide clients with market insights and trends as shown by a mean of 4.1503 (SD=0.62588).

Further, they agreed that their companies actively sought client feedback and reviews through digital channels to improve their services as shown by a mean of 3.9869 (SD=0.66873); used digital communication tools to keep clients informed on property updates and transactions with a mean of 4.3399 (SD=0.56386); and realized profits as a result of digital integration with mean of 4.3137 (SD=0.46553); and that stakeholders within the real estate industry welcomed adopting digital technology in organization activities with mean of 4.3007 (SD=0.46005). Though the respondents disagreed that the companies provided training and development opportunities to enhance digital skills among employees as shown by a mean of 1.7451 (SD=0.67404).

The respondents, nevertheless, agreed that digital technology had positively impacted the companies' overall competitiveness in the real estate market as shown by mean of 4.0327 (SD=0.77305); they foresaw digital technology playing a critical role in the future investment of real estate agents in Nairobi as shown by a mean of. 4.0131 (SD=0.76077); and that companies' mission statements were well articulated based on strategy formulation as shown by mean of 3.9412 (SD=0.57623). They also agreed that the activities in their companies were executed based on strategy formulation as shown by mean of 4.0980 (SD=0.53514); the strategy formulation of the companies was regularly updated in line with the changing trends as shown by a mean of 4.1176 (SD=0.64829); and that their companies' strategy formulation on digital technology was clear as shown by a mean of 3.8366 (SD=0.67334). They further agreed that the competitive positions of their companies are guided by their approach to strategy formulation as shown by a mean of 3.9935 (SD=0.65390); and that the companies' strategy formulation processes were well-aligned with industry trends and competitive dynamics as shown by a mean of 4.0915 (SD=0.59999).

4.4 Strategy Formulation

Strategy formulation was described through mean and standard deviation. This enabled the researcher to understand how the strategy formulation was done within the real estate agency companies. The respondents were asked to indicate their agreement on statements relating to strategy formulation. The findings are shown in Table 4.5.

Table 4.5: Strategy Formulation

	Mean	Std. Deviation
The company mission statement is well articulated based on strategy formulation	3.9412	.57623
The activities in the company are executed based on strategy formulation	4.0980	.53514
The strategy formulation of the company is regularly updated in line with the changing trends.	4.1176	.64829

The company's strategy formulation on digital technology is clear	3.8366	.67334
The competitive position of the company is guided by its approach to strategy formulation.	3.9935	.65390
The company's strategy formulation process is well-aligned with industry trends and competitive dynamics.	4.0915	.59999
The company has mechanisms in place to adapt its strategies to changes in the business environment	3.9869	.54996
The company conduct a thorough analysis of external environment during strategy formulation.	4.0784	.61269

Source: Research Data (2023)

From Table 4.5, the findings showed that the respondents agreed that company mission statements were well articulated based on strategy formulation as shown by a mean of 3.9412 and standard deviation of 0.57623. They also agreed that the activities in their companies were executed based on strategy formulation as shown by a mean of 4.0980 (SD=0.53514); strategy formulation was regularly updated in line with the changing trends as shown by a mean of 4.1176 (SD=0.64829); and that that their companies' strategy formulation on digital technology was clear as shown by a mean of 3.8366 (SD=0.67334) Furthermore, they agreed that competitive positions of their companies were guided by their approaches to strategy formulation as shown by a mean of 3.9935 (SD=0.65390). Similarly, they agreed that companies' strategy formulation processes were well-aligned with industry trends and competitive dynamics as shown by a mean of 4.0915

(SD=0.59999); their companies had mechanisms in place to adapt their strategies to changes in the business environment as shown by a mean of 3.9869 (SD=0.54996); and that their companies conducted a thorough analysis of external environment during strategy formulation as shown by a mean of 4.0784 (SD=0.61269).

4.5 Digital Technology and Strategy Formulation

The study sought to establish the effect of digital technology on strategy formulation in real estate agents in Nairobi. This was done through descriptive statistics based on the level of agreement on statements related to the two variables. It was also done through regression analysis. The findings are presented in Table 4.6.

Table 4.6: Digital Technology and Strategy Formulation

	Mean	Std. Deviation
The use of digital technology has influenced the strategy formulation for marketing in the company	3.7778	.60938
Digital technology has significantly enhanced the company's ability to gather and analyze market data for strategy formulation.	3.8497	.70498
The use of digital technology has improved the company's ability to identify emerging trends and opportunities.	4.0392	.61647

The use of digital technology in strategy formulation has enabled the company to stay competitive in the market	4.0000	.56195
Digital technology has improved the company's operational efficiency and cost-effectiveness.	4.0980	.55919
The company has effectively integrated digital tools and analytics into the strategy formulation process.	4.0784	.65423
Market disruptions by digital technology transformation significantly inform the company's strategy formulation process	4.0523	.59373
Digital platforms and data-driven insights have played a crucial role in the company's competitive analysis.	4.1111	.63407

Source: Research Data (2023)

From Table 4.6, respondents agreed that use of digital technology had influenced the strategy formulation for marketing in their company as shown by a mean of 3.7778 (SD=0.60938). They also agreed that digital technology had significantly enhanced the company's ability to gather and analyse market data for strategy formulation as shown by a mean of 3.8497 (SD=0.70498); improved their companies' ability to identify emerging trends and opportunities as shown by a mean of 4.0392(SD=0.61647); enabled the companies to stay competitive in the market as shown by a mean of 4.0000 (SD=0.56195); and improved the company's operational efficiency and cost-effectiveness as shown by a mean of 4.0980 (SD=0.55919). They also agreed that their companies had effectively integrated digital tools and analytics into the strategy formulation process as shown by a mean of 4.0784 (SD=0.65423); and that market disruptions by digital technology transformation significantly informed the company's strategy formulation process as shown by a mean of 4.0523 (SD=0.59373). Finally, they agreed that digital platforms and data-driven insights had played a crucial role in the company's competitive analysis as shown by a mean of 4.1111 (SD= 0.63407).

4.5.1 Correlation Analysis

The study sought to establish the relationship between digital technology and strategy formulation. This was done through Pearson correlation analysis. The results are shown by Table 4.7.

Table 4.7: Correlation Analysis

		Strategy formulation	Digital technology
Strategy formulation	Pearson Correlation	1	.539**
	Sig. (2-tailed)		0.000
	N	153	153
Digital technology	Pearson Correlation	.539**	1
	Sig. (2-tailed)	0.000	
	N	153	153

Source: Research Data (2023)

From Pearson correlation analysis, the findings showed that digital technology had a strong significant correlation coefficient of 0.539. This showed that digital technology had a positive relationship on strategy formulation by the agents.

4.5.2 Regression Analysis

The study sought to establish the effect of digital technology on strategy formulation among real estate agents in Nairobi. This was done through simple regression analysis. The results are shown by Tables 4.8 to 4.10.

Table 4.8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.539[a]	0.291	0.286	1.25601

a. Predictors: (Constant), digital technology

Source: Research Data (2023)

Table 4.8 showed an R value of 0.539 indicating a strong relationship between digital technology and strategy formulation. Further, the table showed an R square value of 0.291. This indicated that digital technology contributed a 0.291 proportion to the change in strategy formulation among real estate agency companies. This showed that there were other factors contributing 0.709 proportional change in strategy formulation among the real estate agents.

Table 4.9: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.600	1	0.600	9.159	0.003[b]
	Residual	9.896	151	0.066		
	Total	10.497	152			

a. Dependent Variable: Strategy formulation
b. Predictors: (Constant), Digital Technology

Source: Research Data (2023)

The analysis of variance results in Table 4.9 showed that the model was significant. This was reflected in an F-value (9.159) with a significant value of 0.003 which fell below the 5% significance level. This is an indication that digital technology had a significant effect on strategy formulation by real estate agents.

Table 4.10: Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.136	0.079		14.332	0.000
	Digital technology	0.571	0.186	0.539	3.069	0.003

a. Dependent Variable: Strategy formulation

Source: Research Data (2023)

From the regression analysis coefficient Table 4.10, digital technology had a regression coefficient of 0.571 (p=0.003). This depicted that a unit increase in digital technology would lead to an increase in strategy formulation among real estate agents. The p-value was less than 0.05 demonstrating that the effect was significant. This indicates that digital technology had a positive effect on strategy formulation.

4.6 Discussion of Findings

The researcher made a discussion of the findings in relation to the theories and empirical studies reviewed in this research. This showed the link that the study findings had on the theories and findings of other researchers whose studies were reviewed in this study. From the findings, digital technology had a positive regression coefficient. This indicated that an increase in digital technology led to improved strategy formulation. This indicates that digital technology had a positive effect on strategy formulation among real estate agents.

4.6.1 Link to Theoretical Literature

The findings revealing a positive effect of digital technology on strategy formulation among real estate agents align with the diffusion of innovation theory. This positive relationship resonates with the theory's proposition that early adopters, characterized by their openness to new technologies, are likely to experience benefits first. In the context of real estate, the quick integration of digital technology by innovators and early adopters has evidently led to an enhancement in strategy formulation. Moreover, the compatibility and positive impact observed suggest that digital technology aligns with existing practices, making it more likely to be adopted by a broader audience, consistent with the theory's emphasis on compatibility and complexity. The study's findings provide empirical support for the Diffusion of Innovation Theory by demonstrating how the observable benefits of digital technology contribute to strategic improvements among real estate agents, reflecting the theory's principles of observability and trialability.

In the context of resource-based view theory, digital technology can be viewed as a valuable and potentially rare resource for real estate firms. The positive effect on strategy formulation suggests that digital technology contributes to the creation of a strategic capability that is not only valuable but also difficult for competitors to replicate. As per the theory, sustained competitive advantage arises from possessing resources that are valuable, rare, and difficult to imitate. In this case, the adoption and integration of digital technology emerge as a source of competitive advantage for real estate agents, supporting the RBV proposition that internal resources and capabilities are critical drivers of a firm's success. Therefore, the study's findings reinforce the RBV perspective by demonstrating the positive effect of digital technology on the strategic capabilities of real estate agents, contributing to their competitive advantage in the market.

4.6.2 Link To Empirical Literature

The study found that digital technology had a positive effect on strategy formulation in real estate agents. Findings are like those of Frey and Osborne (2017); Rana et al. (2012); and Bordean et al. (2010) who found that technology had a significant effect on strategy formulation among companies. These studies provide a consistent pattern showing that digital technologies play a key role in strategy formulation. This reinforces the idea that the integration of technology, including digital tools, is a key factor influencing strategy formulation in both real estate and broader business contexts.

The findings, though, differ with Chaffey et al. (2019) who found that digital technologies led to poor formulation of strategies. They also differed with those of Schallmo, Williams and Lohse (2019) who found no connection between the way organizations formulate strategy and the digital technologies adopted by the organizations. This shows the differences in the effect of digital technology on strategy formulation where in certain industries and economies the effect is positive. However, in other economies and industries digital technology has a negative or no effect on strategy formulation within the organizations.

CHAPTER FIVE:

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter is a summary of the results based on the research objective. The chapter also contains the conclusions as well as recommendations. The limitations and areas for further research also formed part of this chapter.

5.2 Summary of Findings

The respondents had varied perspectives on their companies' digital proficiency. While there was disagreement regarding overall digital proficiency, they acknowledged effective use of digital platforms for property listings and showcasing, impactful integration of digital technology in real estate operations, and successful utilization of social media and online advertising for property marketing. The respondents also highlighted the application of data analytics for market insights and engagement with clients through digital channels for feedback and updates. However, they expressed dissatisfaction with the provision of training opportunities to enhance digital skills among employees. Despite this, the respondents recognized the positive impact of digital technology on overall competitiveness in the real estate market and the key role it plays in future investments. Additionally, they agreed to the clarity and alignment of their companies' strategy formulation processes with industry trends and competitive dynamics.

Regarding strategy formulation, respondents agreed that their company mission statements were well articulated based on strategy formulation. They also concurred that their companies executed activities based on strategic plans and regularly updated strategies in line with changing trends. Additionally, respondents agreed that their companies' strategy formulation regarding digital technology was clear. They further agreed that competitive positions were guided by the company’s approach to strategy formulation with the strategy formulation processes aligned well with industrial trends and competitive dynamics. Moreover, respondents confirmed that their companies had mechanisms to adapt strategies to changes in the business environment and conducted thorough analyses of the external environment during strategy formulation.

From the findings, respondents agreed that digital technology influenced strategy formulation within their organizations. They agreed that digital technology played a key role in enhancing market data collection and analysis, identifying emerging trends, and maintaining market competitiveness. Additionally, participants recognized the improved operational efficiency and cost-effectiveness due to the adoption of digital technology. They also agree that there was effective incorporation of digital tools and analytics into the strategy formulation process, as well as the informed response to market disruptions induced by digital technology. Lastly, the respondents emphasized the crucial role of digital platforms and data-driven insights in shaping competitive analysis.

Correlation analysis showed that digital technology and strategy formulation had positive relationship. This was confirmed by the regression analysis which showed that digital technology had a significant effect on strategy formulation. The regression coefficients showed a positive effect on strategy formulation of agents. The findings showed that digital technology contributed 29% to the change in strategy formulation among real estate agents.

5.3 Conclusions

The findings showed that the respondents agreed that their organizations had adopted digital technology in their business. This study, therefore, concludes that real estate agency companies in Nairobi have adopted digital technology in their business operations. The digital technology related to social media and online advertising together with data analytics for market insights and digital channels for engagement with clients together with customers. The findings further showed that the organizations failed to train the employees on the usage of these digital technologies. The study therefore concludes that there is low training on the usage of digital technologies adopted by the real estate agents in Nairobi, mostly done to specific employees within the firms. The study also found that strategy formulation was a key focus of the organizations. This indicates that real estate agents in Nairobi undertake strategy formulation in their urge to improve their business operations.

The findings also showed that digital technologies and strategy formulation produced positive relationship. Hence, digital technology has a positive relationship on strategy formulation of real estate agents in Nairobi. This was confirmed by results that digital technology had a significant effect on strategy formulation. The regression coefficients showed a positive effect on strategy formulation of agents. This shows that that digital technology has a significant effect on strategy formulation within real estate agents in Nairobi. The findings showed that digital technology contributed 29% to the change in strategy formulation among real estate agents. This shows that there are other factors influencing strategy formulation among real estate agents in Nairobi.

5.4 Recommendations of the Study

The study recommends increased adoption of digital technologies among real estate agents in Nairobi. This is because digital technologies improved strategy formulation among the agents reflected in the positive relationship between the two. Real estate agents in Nairobi also need to establish continuous learning programs that will keep the employees up to date on the emerging digital technologies. There is need for the agents to stay ahead of the competition through digital savvy team contribution to effective strategy formulation.

The study also recommends that real estate agency companies align their training programs with their strategic objectives. The employees need the skills on the adoption of digital technologies which would enable them to make a contribution to the strategy formulation within their organization. This is based on the findings that there is a positive relationship between digital technology and strategy formulation. Further, the real estate agents in Nairobi need to encourage collaboration and knowledge-sharing themselves. This would lead to collective learning through platforms for sharing best practices, case studies, and success stories related to the effective use of digital technologies within industry. The companies also need to increase their adoption of modern digital technologies aligned to the real estate industry in Kenya.

5.5 Limitations of The Study

The study was limited by the its focus. The study was limited to digital technology and strategy formulation in real estate agents in Nairobi. Other factors influencing strategy formulation were assumed. Further, the study assumed other companies within Nairobi as well as real estate agents in other counties. This limited the generalizability of the study. This was overcome by having recommendations for future studies.

The study was also limited by the lack of will by the respondents to give information pertaining to digital technology and strategy formulation. This was overcome by having an introduction letter attached to the questionnaire proving that the data would be used for academic purposes only. Consent was also sought from the respondents which allowed the ones who gave consent to participate. The researcher also sought for an appointment from the respondents to ensure that the questionnaire was administered at a time convenient for them. The study was limited by the research design adopted, which might introduce common method bias. Other research designs may bring in a difference in the approach and the outcomes.

5.6 Recommendations for Future Studies

This study recommends similar research based on other factors influencing strategy formulation as digital technology contributed only 29% to the strategy formulation among the estate agency companies. The study also recommends similar research with a focus on different measures of digital technology and strategy formulation to see whether the results would be similar. Other researchers can undertake a similar study with the inclusion of property consultancy companies other than real estate agents in Nairobi. The involvement of real estate agents in other counties other than Nairobi is recommended for similar future studies. Other researchers should undertake similar research based on a different research design.

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APPENDICES

Appendix I: Introduction Letter From the University

UNIVERSITY OF NAIROBI

FACULTY OF BUSINESS AND MANAGEMENT SCIENCES

OFFICE OF THE DEAN

Telegrams: "Varsity", Telephone: 020 491 0000 VOIP: 9007/9008 Mobile: 254-724-200311	P.O. Box 30197-00100, G.P.O. Nairobi, Kenya Email: *fob-graduatestudents@uonbi.ac.ke* Website: *business.uonbi.ac.ke*

Our Ref: **D61/87234/2016**

November 1, 2023

National Commission for Science, Technology and Innovation
NACOSTI Headquarters
Upper Kabete, Off Waiyaki Way
P. O. Box 30623- 00100
NAIROBI

RE: INTRODUCTION LETTER: MUNGAI KEVIN KIMANI

The above named is a registered Masters of Business Administration candidate at the University of Nairobi, Faculty of Business and Management Sciences. He is conducting research on ***"Effect of Digital Technology on Strategy Formulation by Real Estate Agency Companies in Nairobi, Kenya."***

The purpose of this letter is to kindly request you to assist and facilitate the student with necessary data which forms an integral part of the Project.

The information and data required is needed for academic purposes only and will be treated in **Strict-Confidence**.

Your co-operation will be highly appreciated.

Dean's Office
University of Nairobi
Faculty of Business
and Management Science
P.O. Box 30197-00100, Nairobi

PROF. JAMES NJIHIA
DEAN, FACULTY OF BUSINESS AND MANAGEMENT SCIENCES

JN/jkm

Appendix II: Questionnaire

Part I: General information about the Respondents

Please complete the requested information in the provided sections. In the following section, mark the required items with a checkmark [✓].

1. What is the name of your firm?

2. How many years has your firm been in operation?

   [ ] Below 5 [ ] 5-10 [ ] 11-15 [ ] 16-20 [ ] above 20

3. How many employees are in your company?

   [ ] Below 10 [ ] 10-20 [ ] 21-30 [ ] above 30

4. What services do you offer in your firm?

5. What geographical areas do you cover?

Part II: Usage of Digital Technology

Which digital technology is mostly used in your real estate company?

Digital tool	Website	Social media platforms	Online property listing platforms	Mobile apps for property search and management	Email marketing	Virtual tours or 3D property visualization	Customer relationship management (CRM) software

Section II: The use digital technology on real estate company

In the section beneath, kindly give your responses based on the following scales:

[1] Strongly disagree, [2] Disagree, [3] Neither agree nor disagree, [4] Agree, [5] Strongly Agree

Item	1	2	3	4	5
The company is proficient in using digital technology.	[ ]	[ ]	[ ]	[ ]	[ ]
The company effectively uses digital platforms for property listings and showcasing.	[ ]	[ ]	[ ]	[ ]	[ ]

Digital technology impacts the operations of the real estate agency	[ ]	[ ]	[ ]	[ ]	[ ]
The company effectively leverages social media and online advertising for property marketing.	[ ]	[ ]	[ ]	[ ]	[ ]
The company employs data analytics to provide clients with market insights and trends.	[ ]	[ ]	[ ]	[ ]	[ ]
The company actively seeks client feedback and reviews through digital channels to improve its services.	[ ]	[ ]	[ ]	[ ]	[ ]
The company uses digital communication tools to keep clients informed on property updates and transactions.	[ ]	[ ]	[ ]	[ ]	[ ]
The company has realized profits as a result of digital integration.	[ ]	[ ]	[ ]	[ ]	[ ]
Stakeholders within the real estate industry welcome adopting digital technology in organization activities.	[ ]	[ ]	[ ]	[ ]	[ ]

The company provides training and development opportunities to enhance digital skills among employees.	[ ]	[ ]	[ ]	[ ]	[ ]
Digital technology has positively impacted the company's overall competitiveness in the real estate market.	[ ]	[ ]	[ ]	[ ]	[ ]
I foresee digital technology playing a critical role in the future investment of real estate agents in Nairobi.	[ ]	[ ]	[ ]	[ ]	[ ]

Part III: Strategy formulation in real estate company in Nairobi, Kenya

In the section beneath, kindly give your responses based on the following scales:

[1] Strongly disagree, [2] Disagree, [3] Neither agree nor disagree, [4] Agree, [5] Strongly Agree

The company mission statement is well articulated based on strategy formulation	[ ]	[ ]	[ ]	[ ]	[ ]
The activities in the company are executed based on strategy formulation	[ ]	[ ]	[ ]	[ ]	[ ]

The strategy formulation of the company is regularly updated in line with the changing trends.	[ ]	[ ]	[ ]	[ ]	[ ]
The company's strategy formulation on digital technology is clear	[ ]	[ ]	[ ]	[ ]	[ ]
The competitive position of the company is guided by its approach to strategy formulation.	[ ]	[ ]	[ ]	[ ]	[ ]
The company's strategy formulation process is well-aligned with industry trends and competitive dynamics.	[ ]	[ ]	[ ]	[ ]	[ ]
The company has mechanisms in place to adapt its strategies to changes in the business environment	[ ]	[ ]	[ ]	[ ]	[ ]
The company conduct a thorough analysis of external environment during strategy formulation.	[ ]	[ ]	[ ]	[ ]	[ ]

Part IV: Effect of digital technology on strategy formulation in real estate company in Nairobi, Kenya

In the section below, please give your answers based on the following scales:

[1] Strongly disagree, [2] Disagree, [3] Neither agree nor disagree, [4] Agree, [5] Strongly Agree

The use of digital technology has influenced the strategy formulation for marketing in the company	[ ]	[ ]	[ ]	[ ]	[ ]
Digital technology has significantly enhanced the company's ability to gather and analyze market data for strategy formulation.	[ ]	[ ]	[ ]	[ ]	[ ]
The use of digital technology has improved the company's ability to identify emerging trends and opportunities.	[ ]	[ ]	[ ]	[ ]	[ ]
The use of digital technology in strategy formulation has enabled the company to stay competitive in the market	[ ]	[ ]	[ ]	[ ]	[ ]
Digital technology has improved the company’s operational efficiency and cost-effectiveness.	[ ]	[ ]	[ ]	[ ]	[ ]
The company has effectively integrated digital tools and analytics into the strategy formulation process.	[ ]	[ ]	[ ]	[ ]	[ ]

Market disruptions by digital technology transformation significantly inform the company's strategy formulation process	[ ]	[ ]	[ ]	[ ]	[ ]
Digital platforms and data-driven insights have played a crucial role in the company's competitive analysis.	[ ]	[ ]	[ ]	[ ]	[ ]

THANK YOU

Appendix II: Krejcie and Morgan table

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970