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Information Technology Skills and Firm Performance of Kenya Tea Producers Companies

[1]Soi Judith Cherono; [2]Dr. Tobias Mwalili ;[3]Dr. Samson Nyang'au Paul
[1]PhD Student, [2,3]Lecturer
Jomo Kenyatta University of Agriculture and Technology

Abstract:- The study sought to examine the influence of information technology skills on performance of Tea Producers companies in Kenya. The study reviewed theoretical and empirical literature relevant to the role of Information Technology skills on performance of Tea Producers companies in Kenya. The conceptual framework was discussed to show the relationship between Information Technology skills and firm performance (dependent variable). Positivism philosophy guided this study. Positivism philosophy emphasizes the importance of empirical evidence and scientific methods in understanding the world and acquiring knowledge. The study used cross-sectional survey design to establish the role of Information Technology strategic alignment on performance of Tea Producers companies in Kenya. In this study, the target population was identified as tea producer companies that are members of the East Africa Tea Trade Association (EATTA) in Kenya. This choice was made on the premise that these entities are likely to possess pertinent and accurate information relevant to the research. Specifically, the population encompassed all 29 tea producer members of EATTA. Respondents' population comprised of six top managers from each organization translating to 174 top managers. The sample size was 121 top managers. They were targeted because top managers of organizations mostly handle strategic management issues. The research employed purposive sampling to select respondents and primarily relied on gathering primary data. A questionnaire with a diverse set of questions was utilized to collect responses from participants. Prior to the main study, a pilot study was conducted to ensure the validity and reliability of the questionnaire. The findings of the study indicate that information technology skills exert a positive and statistically significant influence on the performance of tea producer companies in Kenya. Findings revealed that cross-training, encouraging innovation and providing employment opportunities influences performance of Tea Producers companies in Kenya. This implies that a unit improvement in information technology skills would lead to improvement in performance of Tea Producers companies in Kenya. Based on the findings, this study recommends that the management of tea Producer companies should formulate and implement effect employee training programs to improve their IT skills.

Keywords:- *Information Technology skills, Performance of Tea Producers Companies.*

I. INTRODUCTION

In the rapidly evolving landscape of business, information technology has emerged as a strategic asset. IT-business strategic alignment denotes the harmony between an organization's IT strategy and its overarching business strategy (Henderson, 1999). This alignment is crucial as it enables organizations to effectively leverage their IT resources to support business objectives, thereby maximizing the impact of IT investments, integrating IT and business processes, and ultimately enhancing competitiveness, revenue growth, and profitability (Henderson, 1999; Alter, 2005; Pearlman & Baker, 2005; Byrd et al., 2006; Coltman, 2015).Despite the recognized significance and potential benefits of strategic alignment, research suggests that only a minority of organizations successfully achieve such alignment (Hinkelmann & Pasquini, 2014). This discrepancy underscores the challenges inherent in aligning IT and business strategies effectively, highlighting the need for further exploration and refinement of alignment strategies in organizational contexts.

The ability of an organization to maintain a competitive edge hinges on its capability to acquire and deploy resources that align with its competitive requirements (Parto, Sofian, &Saat, 2016). Beffers (2018) suggests that firms can enhance their performance by aligning with both the business environment and internal resources and infrastructure. Hence, strategic alignment plays a pivotal role in ensuring organizational effectiveness and efficient resource utilization. However, according to Benbya, Nan, Tanriverdi, and Yoo (2020), an overly tight integration between IT and business strategies may result in reduced strategic flexibility, hindering the organization's ability to adapt to environmental changes effectively. Additionally, Schallmo and Brecht (2016) identified the phenomenon of the "alignment trap," wherein organizations with seemingly high levels of IT-business alignment fail to achieve organizational effectiveness and improved performance despite their efforts. This highlights the complexity of achieving effective alignment and underscores the importance of considering various factors beyond mere integration in optimizing organizational outcomes.

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In the early 1980s, the impetus for alignment stemmed from a dual focus on strategic business planning and long-term IT planning (Beffers & de Waal, 2018). Business planning, viewed from both top-down and bottom-up perspectives, entailed the creation of departmental plans, including IT, to align with corporate strategies (Liang, Chiu, Wu, & Straub, 2011). Meanwhile, from an IT standpoint, decisions regarding hardware and software were recognized to have long-term ramifications, necessitating alignment with the current and future plans of the organizational unit. Alignment between Information and Communications Technology (ICT) and business emerged as a hallmark of high-performing organizations (Wu et al., 2015). This underscores the strategic significance of ensuring coherence and synergy between IT initiatives and overarching business objectives, facilitating organizational effectiveness and performance.

Information technology (IT) skills encompass a diverse set of competencies and knowledge domains that individuals possess to proficiently engage with, manage, and contribute to various facets of information technology. These skills span a wide spectrum of technical and non-technical proficiencies essential for navigating the intricate and dynamic realm of IT. Technical IT skills entail expertise in areas such as programming, database management, networking, cybersecurity, system administration, and mastery of specific software and tools. Complementing these technical competencies are non-technical skills, which include project management, problem-solving, communication, teamwork, and adaptability. These non-technical abilities are fundamental for IT professionals to collaborate effectively, innovate, and address the challenges inherent in the ever-evolving landscape of technology (Belalcázar Villamar, Díaz, & Molinari, 2016).

In today's rapidly evolving digital landscape, information technology (IT) skills are indispensable, serving as the backbone of the modern workforce. Proficiency in programming languages such as Python, Java, and C++ is foundational for software development, empowering IT professionals to craft innovative solutions and applications.

Database management skills, which encompass expertise in SQL and data modeling, are critical for efficiently organizing and retrieving information. Networking proficiency is essential for designing, implementing, and maintaining robust communication infrastructures, ensuring seamless connectivity and data transfer.In the face of increasing cyber threats, cybersecurity expertise is highly sought-after to safeguard sensitive information. This entails a deep understanding of encryption, firewalls, and risk assessment practices.Furthermore, cloud computing skills are in high demand, with platforms like AWS, Azure, and Google Cloud enabling organizations to leverage scalable and flexible resources (Coltman et al., 2015). These diverse skill sets collectively empower IT professionals to navigate and excel in the dynamic digital landscape.

Over the years, significant strides in science and technology have been made through innovative approaches worldwide, leading to increased productivity in economic activities. This progress stems from the integration of technological advancements with innovative strategies for creating and delivering goods and services (Porter & Kramer, 2019). Information technology (IT) often involves substantial capital investments within organizations (Almajali&Dahalin, 2011; Berghout& Tan, 2013; Renaud, Walsh, &Kalika, 2016).International organizations such as UNESCO and the World Bank actively advocate for and support governments in implementing IT initiatives across public agencies (Kapur, Lewis, & Webb, 2011). For instance, the UNESCO Institute of Information Technologies in Education (IITE) plays a crucial role in strengthening national capacities in ICT policy development, particularly for the education of individuals with disabilities (Kotsik, Tokareva, Boutin, &Chinien, 2009).

Since 2000, the Ministry of Work and Pensions in the United Kingdom (UK) has incurred losses exceeding two billion pounds by abandoning three major projects, while in Canada, the net cost of a gun registry ballooned to 500 times the original estimate, with IT accounting for over 25 percent of that expenditure (Zehry, Halder, &Theodosiou, 2011). Additionally, according to the UK's Daily Mail (2020), the National Health Service (NHS) project aimed at digitizing patient records and integrating various NHS components was labeled a failure, costing approximately £20.1 billion, marking it as the largest IT project failure globally. Similarly, the Australian Federal Government made substantial investments in IT/IS through initiatives like Networking the Nation (AU$77 million), Building on IT Strengths (AU$2.9 billion), and Backing Australia's Ability (AU$464 million) (ALIA, 2003). Overall, Australian organizations expended AU$20 billion on IT services in 2003 alone (Gartner 2004). These examples underscore the significant financial commitments and risks associated with large-scale IT projects, highlighting the importance of effective management and oversight in ensuring successful outcomes.

The cultivation of tea (Camellia sinensis) in Kenya traces its roots back to 1903, when G.W. L. Caine, a European settler, introduced the first seedlings from India and planted them in Limuru near Nairobi (Tea Board of Kenya, 2012). Commercial tea cultivation began in earnest in 1924 and was primarily undertaken by colonialists until 1956, when African farmers gained entry into the industry. Presently, tea production in Kenya is carried out by a diverse mix of small-scale farmers and large-scale producers, with multinational corporations playing a prominent role in the latter category. The Kenya Tea Development Agency (KTDA) manages the collective interests of small-scale farmers, who contribute around 60% of Kenya's total tea production, accounting for approximately 6% of global tea output (Omari, 2015). This dualistic structure of tea production, involving both small-scale and large-scale entities, underscores the pivotal role of tea cultivation as a vital economic endeavor in Kenya.

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In Kenya, tea production predominantly utilizes the CTC (Cut, Tear, Curl) method, resulting in the production of black tea. Following processing, the tea is categorized into primary and secondary grades. Primary grades include Broken Pekoe 1 (BP1), Pekoe Fanning 1 (PF1), Pekoe Dust (PD), and Dust 1 (D1), while secondary grades consist of Fanning 1 (F1), Dust (D), and Broken Mixed Fanning (BMF) (KTDA, 2014). The KTDA oversees the collection, processing, and sale of tea, both domestically and internationally. Additionally, KTDA facilitates payments to small-scale farmers, who constitute a significant portion of Kenya's tea production. In contrast, large-scale producers such as Brooke Bond, George Williamson, Eastern Produce, and African Highlands have distinct responsibilities. They are directly involved in processing and marketing their tea crop (Mbui, 2016). This dual structure underscores the involvement of diverse stakeholders in Kenya's tea industry, each playing unique roles in the production and distribution processes.

The Kenyan tea industry heavily relies on external markets, where it faces stiff competition from other countries producing black CTC tea. These external markets confront numerous challenges, including depressed world tea prices, an oversupply of tea due to diminishing demand, and constraints imposed by regional and global trading agreements. Furthermore, evolving consumer preferences add complexity to these challenges (Lenore & Geffen, 2012). To navigate these dynamics, Kenyan tea is primarily traded through auctions facilitated by the East African Tea Trade Association (EATTA), established in 1957 to oversee domestic tea auctions (National Tea Policy, March 2014). EATTA serves as the apex body representing the tea industry in Africa, boasting a membership that includes tea producers, buyers, brokers, warehousemen, and packers. Notably, it stands as the largest black CTC auction center globally (Mudibo, 2014). Despite facing adversities, the tea industry remains a vital contributor to Kenya's economy, constituting 4% of the Gross Domestic Product (GDP) and 10% of the Agricultural Gross Domestic Product (Tea Board of Kenya, 2018). These figures underscore the industry's pivotal role in fostering economic growth and sustaining employment opportunities within the country.

In 2009, Kenya stood as the leading tea exporter, comprising 25.4% of global tea exports and thereby earning significant foreign exchange revenues. Recognizing the pivotal role of the tea industry, the Kenyan government has designated it as one of the pillars for achieving its Vision 2030 development agenda. With an annual production of approximately 350,000 tons, Kenyan tea contributes 10% to the world's total tea output (Tea Board of Kenya, 2019).The primary markets for Kenyan tea include Pakistan, Egypt, the United Kingdom, Sudan, and Afghanistan, which collectively absorb around 71% of the total export volume. Additionally, Kenyan tea is exported to over 60 other destinations worldwide. However, the domestic market remains relatively limited, accounting for only about 5% of total production (Tea Directorate, 2020).Despite its significant presence in international markets, Kenyan tea faces challenges in terms of visibility and traceability. Often sold as part of blends rather than as a standalone product, Kenyan tea struggles to establish distinct recognition in the global market. This lack of traceability diminishes its competitiveness, hindering its potential for greater market penetration (KTDA, 2019). Addressing these visibility and branding issues is crucial for enhancing the competitiveness and market position of Kenyan tea on the global stage.

According to Omari (2015), Kenya, despite being the third-largest producer of black CTC tea globally, leads in exportation, signaling relatively low local consumption compared to countries like China, India, and Sri Lanka. This heavy reliance on foreign markets significantly impacts Kenya's export performance, with approximately 95% of the tea produced in the country being exported to over 50 countries worldwide. Key markets for Kenyan tea include Pakistan, Egypt, the United Kingdom, Afghanistan, Sudan, the Russian Federation, Tunisia, Libya, and Yemen. Small holders account for over 60% of tea cultivation in Kenya, followed by estates owned by multinational corporations, with locally owned estates making up the remainder. Notably, more than 84% of Kenyan tea is sold through the Mombasa auction, which ranks as the second-largest tea auction globally. At the auction, brokers represent producers by offering teas for sale, with buyers bidding against themselves. The highest bidders secure the entire lot bid for, providing direct feedback on market prices to factories and farmers. This auction system plays a pivotal role in the tea trade, facilitating transparent price discovery and market interactions for both producers and buyers.

II. STATEMENT OF THE PROBLEM

Strategic alignment, as highlighted by Gerow et al. (2015), Luftman& Ben-Zvi (2018), and Orozco et al. (2019), plays a pivotal role in enabling organizations to extract value from substantial Information Technology investments. This alignment allows firms to allocate critical IT resources effectively to core areas, thereby addressing business challenges and enhancing overall business value (Chau et al., 2020). However, research conducted on manufacturing and producer companies in Kenya suggests a nuanced picture. Despite full implementation of Information Technology, these firms did not experience a significant increase in performance (Ellis, 2019; K'Aol, 2018), with external factors cited as contributing influences.External factors, including market dynamics and infrastructure limitations, have been identified as significant hurdles impacting organizational performance (Johnson, 2014; Akoten et al., 2006; Ellis, 2019). These findings underscore the complex interplay between internal IT initiatives and external environmental factors, highlighting the need for a holistic approach to organizational improvement.

Despite the acknowledgment that businesses operate within both external and internal environments, there remains a significant gap in the exhaustive examination of the internal domains of the business environment. Particularly underexplored are the dynamics of information technology strategic alignment, encompassing areas such as communications, IT governance, value, partnership,

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technology scope, and skills, and their impact on organizational performance. This presents a critical area for ongoing research, as highlighted by scholars such as Chou et al. (2015), Yayla& Hu (2019), Tallon& Kraemer (2017), and Croteau et al. (2017). Understanding how these elements are utilized to develop and enhance organizational performance represents an essential avenue for future inquiry, promising insights into optimizing IT strategies for business success.

Over the past two decades, production firms in Kenya have experienced a noticeable decline in performance, as indicated by various sources (Mwangi, 2020). Notably, the tea industry, once the country's second-largest GDP contributor in 2000, has now been relegated to third place, with its contribution to GDP showing a downward trajectory. Particularly concerning is the tea sector's dwindling share of foreign exchange earnings, dropping from an average of 60% up to 2018 to a mere 25% (Machuki, 2019). Despite significant investments in IT by production firms, only a limited number of studies have uncovered the desired positive impact (Schwarz, Kalika, Kefi, & Schwarz, 2010; Wong, Ngan, Chan, & Chong, 2012). Compounded by recent global economic recessions, senior management faces increasing pressure to trim IT spending while simultaneously enhancing the business value derived from IT initiatives (Coleman & Chatfield, 2011). Productivity indicators across various sectors suggest stagnating growth or even a slowdown at the aggregate level (DeJager, 2015; Almajali&Dahalin, 2011). Notably, the tea industry contributes 4% to Kenya's GDP and 15% to the Agricultural Gross Domestic Product (Tea Board of Kenya, 2022). In light of these trends, this study aimed to delve into the role of Information Technology skills in shaping the performance of tea producers in Kenya.

A. General Objective

To examine the role of Information Technology skills on performance of Tea Producers companies in Kenya

B. Theoretical Framework

- *Strategic Alignment Model*

The Strategic Alignment Model (SAM), developed by Henderson and Venkatraman in 1993, is a seminal framework in the field of information systems and strategic management. It offers a structured approach to understanding and assessing the alignment between an organization's business strategy and its information technology (IT) strategy. The SAM emphasizes the importance of synchronizing these two critical components to enhance organizational performance and competitiveness (Henderson & Venkatraman, 1999).The SAM consists of two fundamental dimensions: internal domain alignment and external domain alignment. Internal Domain Alignment: This dimension focuses on aligning the organization's IT infrastructure and operations with its business infrastructure. It encompasses ensuring that IT systems, processes, and resources are effectively integrated and deployed to support the organization's internal operations and functions. Internal alignment involves optimizing the IT capabilities to meet the operational needs and objectives of the business (Henderson & Venkatraman, 1999).

External Domain Alignment: This dimension pertains to aligning the organization's IT strategy with its overall business strategy. It involves ensuring that the IT initiatives, investments, and capabilities are strategically aligned with the organization's broader goals, objectives, and competitive priorities. External alignment ensures that IT resources and capabilities are leveraged to support and enable the organization's strategic direction and initiatives (Henderson & Venkatraman, 1999).The SAM further introduces the concept of cross-domain linkages, which represent the relationships between IT strategy and business strategy, as well as between IT infrastructure and business infrastructure. These cross-domain linkages are crucial for achieving comprehensive alignment across both dimensions of the model. The SAM also identifies six types of IT-business alignment, which include intellectual alignment, operational alignment, and cross-domain alignment, among others. These alignment types reflect different aspects of the relationship between IT and business strategies, providing a nuanced understanding of alignment dynamics within organizations (Henderson & Venkatraman, 1999).

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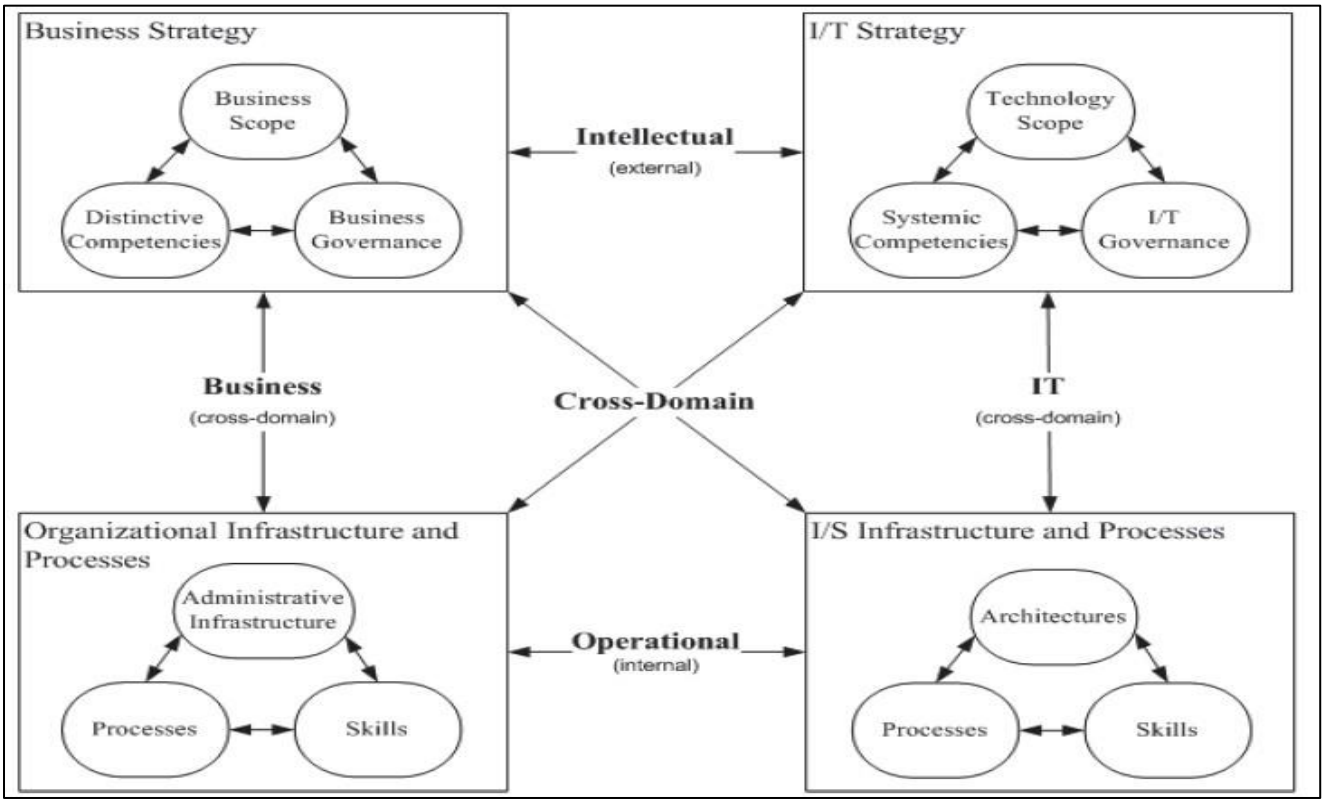

Fig 1: Strategic Alignment Model

During the 1990s, SAM emerged as a pivotal concept in the realm of IT-business alignment, earning the moniker of the "jewel in the crown" within theoretical developments (MacDonald & Yapp, 1994). Its primary theoretical breakthrough lies in conceptualizing IT-business alignment as an ongoing, dynamic process influenced by various factors (Gerow et al., 2015). Research indicates that SAM constructs effectively forecast alignment and are empirically verifiable (Avison et al., 2004; Cooper et al., 2000; Gerow et al., 2015). A meta-analysis conducted by Gerow et al. (2015) demonstrated that all alignment constructs within SAM predict enhanced performance, albeit to varying degrees. This underscores the theoretical and practical robustness of SAM in gauging IT-business alignment and assessing its impact on organizational effectiveness.

In Henderson and Venkatraman's (1993) framework, strategic alignment is delineated into two key dimensions encapsulated by the concepts of "Strategic Fit" and "Functional Integration." "Strategic Fit" embodies the vertical aspect of the strategic alignment framework, while "Functional Integration" represents its horizontal facet (Henderson and Venkatraman, 1993). Strategic Fit underscores the imperative of making decisions that not only position the enterprise within the external marketplace but also determine the optimal internal organizational arrangements necessary to execute this market-oriented strategy. Choices aimed at positioning the enterprise within the market are termed as business strategy, while those governing the internal structure and processes of the enterprise pertain to organizational infrastructure (BelalcázarVillamar et al., 2016).

The enterprise's performance hinges on the alignment between two critical dimensions: business strategy and organizational processes (Goepp& Avila, 2015). As business strategies evolve, organizational processes must adapt accordingly to maintain consistency. Similarly, in the realm of IT strategy, alignment between IT strategy and its corresponding IS/IT infrastructure and processes is vital (Tafti, Abdolvand, &Harandi, 2019). Ensuring coherence between these vertical choices allows for the effective utilization of IT resources, thereby offering strategic advantages to the firm (Henderson and Venkatraman, 1991 & 1993; Luftman et al., 1993).

Henderson and Venkatraman (1993) introduced a conceptual framework to explore the concept of strategic fit, which encompasses six distinct perspectives within strategic management. These perspectives, termed (a) moderation, (b) mediation, (c) matching, (d) gestalts, (e) profile deviation, and (f) covariation, offer diverse theoretical and analytical implications. The framework categorizes each perspective across three dimensions: the specificity of the functional form of fit, the number of variables involved, and the presence or absence of a criteria variable. These six perspectives are further organized into two classificatory schemes: 'bivariate fit' and 'systems fit'. The 'bivariate fit' scheme includes moderation, mediation, and match perspectives, while the 'systems fit' scheme encompasses covariance, profile deviation, and gestalts (Bhattacharya, 2018).

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Four distinct perspectives on business-IT strategic alignment have been identified, aiming to address cross-domain relationships and the complex interplay between strategic fit and functional integration within the SAM model (Wetering, Mikalef, &Pateli, 2017). These perspectives encompass the strategy execution perspective, technology potential perspective, competitive potential perspective, and service level perspective. They are categorized into two overarching domains:Business strategy as the driver, which includes the strategy execution perspective and the technology potential perspective.IT strategy as the enabler, comprising the competitive potential perspective and the service level perspective (Henderson and Venkatraman, 1991 & 1993; Luftman et al., 1993).

Each perspective consists of three components, forming an interplay among three key domains, depicted as a triangle. These components include the anchor, pivot, and area of impact. The anchor symbolizes the strongest area of the business, guiding organizational changes based on the perspective. The pivot represents the weaker area prone to realignment. Meanwhile, the area of impact signifies the domain directly influenced by changes made in the pivot area through realignment efforts (Henderson and Venkatraman, 1991; Luftman et al., 1993; Coleman & Papp, 2006).

In the SAM model, the IT strategy acts as a catalyst for change, serving as the IT enabler within the organizational domain to facilitate the adoption or enhancement of business strategies with significant organizational implications. This role manifests through two key cross-domain relationships: the competitive potential perspective and the service level perspective (Henderson and Venkatraman, 1993; Luftman et al., 1993). The Strategic Alignment Model holds relevance in this study as it comprehensively explores various facets of strategic alignment and delineates how IT can be leveraged to enhance organizational performance.

➢ *Conceptual Framework*

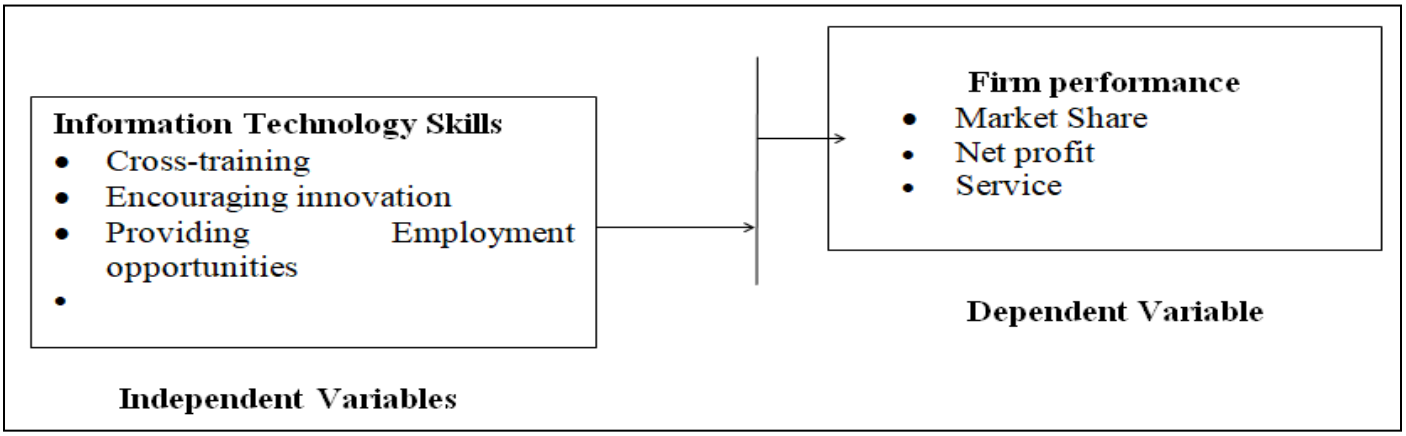

Fig 2: Conceptual Framework

C. Empirical Review

➢ *Information Technology Skills*

Developing IT skills encompasses essential human resource functions, including recruitment, employee retention, training initiatives, performance evaluations, fostering innovation, providing career growth opportunities, and nurturing individual skill enhancement. Moreover, it involves initiatives aimed at enhancing the IT organization's adaptability to change, fostering a culture of continuous learning, and maximizing the utilization of new concepts and technologies. Tippins and Sohi (2003) define IT skills and abilities as the effective utilization of technology by an organization to manage its information resources proficiently. While "IT" commonly refers to computers, software, and telecommunications, its application extends beyond mere technology to encompass the strategic utilization of expertise in meeting the informational needs of the company within the framework of technological advancements (Mithas et al., 2011).

In today's global marketplace, the importance of IT competency has surged, reflecting the critical role played by resources and processes in effectively managing information (Spraakman, O'Grady, Askarany, &Akroyd, 2015). From a resource-based perspective, competencies are viewed as unique assets, particularly due to their rare emergence, which transcends singular market settings (Sabin, Alrumaih, &Impagliazzo, 2018). This uniqueness can serve as the foundation for competitive advantage, as organizations with superior IT skills are better equipped to manage the 'invisible assets' crucial for establishing market leadership (Pérez-López & Alegre, 2012).Drawing insights from marketing literature (Glazer, 1991), strategic frameworks (Hinkelmann & Pasquini, 2014), and IT management practices (Cui, Ye, Teo, & Li, 2015), organizations cultivate IT competencies to enhance efficiency in information management. This understanding encompasses IT-related entities such as applications, infrastructure, and personnel. Capabilities, representing the specific skills required to attain competitive dominance, are dynamic and enable organizations to adapt to evolving market dynamics (Belete & Hagos, 2020). By fostering these capabilities, IT

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functions can responsively address critical business needs, ensuring flexibility and agility in the face of change.

III. RESEARCH METHODOLOGY

A. Research Philosophy

Positivism philosophy guided this study. According to Kothari (2011)positivism philosophy emphasizes the importance of empirical evidence and scientific methods in understanding the world and acquiring knowledge. Positivism holds that knowledge can only be gained through observable facts and phenomena, and that scientific inquiry should be based on objective observation and experimentation rather than subjective interpretation or speculation.Positivism emphasizes the role of empirical observation in acquiring knowledge about the world. It asserts that knowledge should be based on sensory experience and verifiable data obtained through systematic observation and experimentation (Saunders *et al*. 2009)

B. Research Design

According to Waiganjo (2013), a research design is a detailed plan or framework that outlines the specific methods and procedures to be employed in conducting a research study. It serves as a roadmap for researchers, guiding them through the entire research process from the formulation of research questions to the collection, analysis, and interpretation of data. This study used cross-sectional survey design. A cross-sectional survey design is a research method used to collect data from a sample of individuals or units at a single point in time. In this design, data is collected from participants at a specific moment, providing a snapshot of the population's characteristics, opinions, or behaviors at that particular time (Creswell, 2014).

Cross-sectional surveys are often quicker and more cost-effective compared to longitudinal or experimental designs, as they require data to be collected only once from each participant. This efficiency allows researchers to gather data from a large sample of individuals or units within a relatively short period of time. Cross-sectional surveys provide a snapshot of the characteristics, opinions, or behaviors of a population at a specific point in time. This allows researchers to assess the prevalence of certain traits or phenomena within the population and identify patterns or trends (Saunders, 2013; Theuri 2015).

C. Target Population

A target population is defined as a collective of events, individuals, or items sharing a distinct common characteristic (Kothari, 2012). In this study, the target population was identified as tea producer companies that are members of the East Africa Tea Trade Association (EATTA) in Kenya. This choice was made on the premise that these entities are likely to possess pertinent and accurate information relevant to the research. Specifically, the population encompassed all 29 tea producer members of EATTA. Within this population, the focus was on top managers, given their pivotal role in strategic management within organizations. Accordingly, the respondents' population was delineated as comprising six top managers from each organization, resulting in a total of 174 top managers included in the study.

D. Sampling Frame

A sampling frame is a list or an enumeration of all the elements or units in a population from which a sample is to be drawn (Ng'ethe, 2013). It essentially serves as the basis for selecting a sample that represents the entire population accurately. The sampling frame should ideally cover every member of the population without any omissions or duplications, ensuring that every individual or element has an equal chance of being selected for the sample (Cooper & Schindler, 2003). The sampling frame for this study consisted of a list of all 29 tea producers EATTA members from Kenya shown in Appendix IV.

E. Sample Size

A sample is a subset of the population of interest (Mugenda & Mugenda, 2003). Respondents' population comprised of six top managers from each organization translating to 174 top managers. The top managers were targeted because top managers of organizations mostly handle strategic management issues. Slovin's formula (1960) was applied as illustrated:

n = N/ (1+Ne2),

Where;
n = Sample Size
N = Total Population
e = Error of Tolerance with a confidence level of 95 % (giving a margin error of 0.05)
n = 174 / (1+ 174*0.05*0.05) = 121

Hence, the sample size was 121.

Purposive sampling technique was used to select top managers of the 29 tea producers company. According to Bryman (2012) purposive sampling, also known as judgmental or selective sampling, is a non-probabilistic sampling technique where researchers deliberately choose specific individuals, groups, or elements from a population based on predefined criteria or their expert judgment.

F. Data Collection Instruments

The study utilized a comprehensive questionnaire featuring a diverse range of questions designed for respondents to address. Additionally, secondary sources were leveraged to both shape problem formulations and identify potential avenues for further research. This approach enabled the researcher to pinpoint issues and identify gaps within the existing literature across various segments within the research area.

Secondary data encompassed an evaluation of findings from primary data collection efforts conducted by other researchers, sourced from a wide array of mediums including company annual reports, technical manuals, governmental and trade publications, as well as books and journals. Notably, this study drew upon resources from the Food and Agriculture Organization of the United Nations

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(FAO) to access up-to-date and credible data on tea production, consumption, volume, and trade. Furthermore, it referenced literature concerning Information Technology strategic alignment and firm performance to enrich the research framework.

G. Pilot Study

A pilot study was conducted to assess the questionnaire's validity and reliability. Participants in the pilot study were distinct from those involved in the final research to mitigate potential research fatigue and response bias. The questionnaire was administered to three senior managers from each of four tea producer companies, selected randomly from the 29 member companies of the EATTA in Kenya, totaling twelve top managers. This sample size represents 10% of the intended study sample. The decision to involve 10% of the sample size in the pilot study aligns with Kothari's (2014) recommendation of selecting a sample size ranging between 10% and 20% for such preliminary investigations. The selection of companies was randomized to ensure a fair representation within the pilot study group.

H. Data Analysis and Presentation

Data analysis can be performed on structured or unstructured data and may involve descriptive statistics to summarize and visualize data, as well as inferential statistics to make predictions or test hypotheses. The ultimate aim of data analysis is to extract actionable insights and knowledge from data, leading to informed decisions and improved understanding of the underlying phenomena. This study used both descriptive statistics and inferential statistics for data analysis. This was done with the help of (SPSS) version 23. Descriptive statistics entailed frequencies, percentages, mean and standard deviation. On the other hand, inferential statistics entailed correlation and regression analysis.

This study conducted tests for normality, autocorrelation, and multicollinearity. The normality test aimed to determine whether the collected data used in the analysis exhibited a normal distribution. The Shapiro-Wilk test was employed for this purpose. According to Hair et al. (2006), normality represents a fundamental assumption in multivariate analysis. It pertains to the shape of the distribution of individual metric variables and their adherence to the normal distribution, which serves as the standard for statistical methods. The assumption of normality is crucial in the estimation process, as highlighted by Bai (2005).

In addition to testing for normality, the study also conducted examinations for autocorrelation to gauge the correlation between independent variables and assess their collective impact. Multicollinearity was evaluated through measures such as the Variance Inflating Factor (VIF) and Tolerance. Utilizing a multiple regression model, the study sought to determine the significance of predictor variables in influencing the dependent variable. This approach has been previously employed by Valipour et al. (2012) in their examination of the impact of cost leadership and product differentiation strategies on firm performance in India, as well as by Pawaskar (2009) to test hypotheses regarding diversification and performance improvement in Malaysian firms. Furthermore, the study showcased regression results elucidating the relationship between Information Technology skills and performance within the tea production sector.

IV. PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

A. Descriptive Statistics Analysis

➢ *Information Technology skills and Firm Performance*

The third specific objective of the study was to establish the role of Information Technology skills on performance of Tea Producers companies in Kenya. The respondents were requested to indicate their level of agreement on various statements relating to information technology skills and performance of Tea Producers companies in Kenya. The results were as presented in Table 1.

Table 1: Information Technology Skills and Firm Performance

	Mean	Std. Deviation
Innovation is strongly encouraged at the functional unit, corporate level, and with business partners/alliances	3.986	0.708
Top management makes our important IT decisions across the organization with equal influence from our business partners/alliances.	3.978	0.925
Change readiness programs are in place at the corporate level and we are proactive and anticipate change.	3.962	0.821
Job transfers regularly occur for all position levels not only within the functional units but also at the organizational level.	3.938	0.809
Education and cross training are practiced across the organization, and with business partners/alliances.	3.910	0.981
Trust and confidence that exist across IT and business units in our organization, is extended to external customers and partners.	3.908	0.879
Effective programs are in place to attract and retain the best IT professionals with both technical and business skills	3.894	0.728
Our primary systems are business strategy enablers/drivers (IT is a catalyst for changes in the business strategy)	3.876	0.915

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Our IT standards are defined and enforced across functional units, and with joint coordination among our strategic business partners/alliances	3.854	0.825
The components of our IT infrastructure are evolving with our business partners	3.843	0.821
Most of the time, a business or IT change is transparent across the organization and to our business partners/alliances	3.798	0.911
Our IT infrastructure is viewed as a resource to enable and drive fast response to business and technology changes	3.765	0.899
Aggregate	**3.802**	**0.865**

From the results, the respondents agreed that innovation is strongly encouraged at the functional unit, corporate level, and with business partners/alliances (M=3.986, SD=0.708). In addition, the respondents agreed that top management makes their important IT decisions across the organization with equal influence from their business partners/alliances(M=3.978, SD=0.925). Further, the respondents agreed that change readiness programs are in place at the corporate level and we are proactive and anticipate change (M=3.962, SD=0.821). The respondents also agreed that job transfers regularly occur for all position levels not only within the functional units but also at the organizational level (M=3.938, SD=0.809). The respondents agreed that education and cross training are practiced across the organization, and with business partners/alliances(M=3.910, SD=0.981). The respondents also agreed that trust and confidence that exist across IT and business units in their organization, is extended to external customers and partners(M=3.908, SD=0.879).

From the results, the respondents agreed that effective programs are in place to attract and retain the best IT professionals with both technical and business skills(M=3.894, SD=0.728).In addition, the respondents agreed that their primary systems are business strategy enablers/drivers (IT is a catalyst for changes in the business strategy)(M=3.876, SD=0.915). Further, the respondents agreed that their IT standards are defined and enforced across functional units, and with joint coordination among their strategic business partners/alliances (M=3.854, SD=0.825). The respondents also agreed that the components of their IT infrastructure are evolving with their business partners(M=3.843, SD=0.821).The respondents agreed that most of the time, a business or IT change is transparent across the organization and to their business partners/alliances (M=3.798, SD=0.911). The respondents also agreed that their IT infrastructure is viewed as a resource to enable and drive fast response to business and technology changes (M=3.765, SD=0.899).

Drawing from marketing literature (Glazer, 1991), strategic insights (Hinkelmann & Pasquini, 2014), and advancements in IT (Cui, Ye, Teo, & Li, 2015), organizations cultivate IT competencies to enhance efficiency in managing information within a business context. These competencies are considered invaluable from a resource-based perspective, as they stem from unique resources that are not easily replicated in the market. This rarity lays the groundwork for a competitive advantage (Sabin, Alrumaih, &Impagliazzo, 2018), particularly in the realm of managing "invisible assets" crucial for establishing market leadership (Pérez-López&Alegre, 2012). Thus, organizations with higher IT skills are positioned as superior in leveraging these intangible assets to drive business success.

➢ *Performance of Tea Producers Companies in Kenya*

The respondents were requested to indicate their level of agreement on various statements relating to performance of Tea Producers companies in Kenya. The results were as presented in Table 2.

Table 2: Performance of Tea Producers Companies in Kenya

	Mean	**Std. Deviation**
Information Technology Strategic Alignment has improved quality of service	3.996	0.865
Information Technology Strategic Alignment has Improved production efficiency	3.979	0.945
Information Technology Strategic Alignment has improve processes in the company	3.938	0.611
Information Technology Strategic Alignment has led to new Product development	3.931	0.908
Information Technology Strategic Alignment has reduced pricing of products and Cost of operation	3.893	0.865
Information Technology Strategic Alignment has led to product diversification	3.854	0.945
Information Technology Strategic Alignment has enhanced product differentiation	3.795	0.661
Information Technology Strategic Alignment has introduced new markets	3.754	0.918
Information Technology Strategic Alignment has improved Image and client loyalty	3.689	0.852
Information Technology Strategic Alignment has increased sales growth	3.654	0.915
Aggregate	**3.772**	**0.841**

From the results, the respondents agreed that information technology strategic alignment has improved quality of service (M=3.996, SD=0.865). In addition, the respondents agreed that information technology strategic alignment has Improved production efficiency (M=3.979, SD=0.945). The respondents also agreed that information technology strategic alignment has improved processes in the company(M=3.938, SD=0.611).The respondents agreed

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that information technology strategic alignment has led to new Product development (M=3.931, SD=0.908).

From the results, the respondents agreed that information technology strategic alignment has reduced pricing of products and Cost of operation (M=3.893, SD=0.865). In addition, the respondents agreed that information technology strategic alignment has led to product diversification (M=3.854, SD=0.945). The respondents also agreed that IT Strategic Alignment has enhanced product differentiation(M=3.795, SD=0.661). The respondents agreed that IT Strategic Alignment has introduced new markets (M=3.754, SD=0.918). The respondents agreed that IT Strategic Alignment has improved Image and client loyalty (M=3.689, SD=0.852).The respondents agreed that IT Strategic Alignment has increased sales growth(M=3.654, SD=0.915).

According to Henderson and Venkatraman (1991 & 1993), enhancing the operational effectiveness of IT in business through strategic alignment and business-driven utilization can significantly impact a firm's performance. Strategic alignment of IT leads to heightened profitability for organizations, surpassing what could be achieved solely through industry and strategy variables (Floyd and Woolridge, 1990; Powell, 1992; Chan et al., 1997; Cragg et al., 2002).

Numerous studies have highlighted the positive impacts of strategic alignment, including enhanced operational efficiencies, increased innovativeness, additional competitive advantages, and ultimately, improved overall performance (Almajali&Dahalin, 2011; Chan, Sabherwal, &Thatcher, 2006; Henderson &Venkatraman, 1993; Kalkan et al., 2011; Raymond & Bergeron, 2008; Wagner, 2014). Conversely, failure to achieve alignment may lead to detrimental outcomes such as resource wastage, diminished financial performance, and unfavorable organizational outcomes (Alaceva&Rusu, 2015; Chen et al., 2010; Ravishankar et al., 2011).

Research by Sabherwal and Chan (2001) indicates a significant correlation between alignment and perceived business performance, though this association is intricate and contingent upon the business strategy. Tallon (2003) discovered that while 70% of companies experienced cost reductions or enhancements in sales and customer service following increased strategic alignment, 30% observed no improvement or even a decline. This disparity was attributed to the inflexibility of alignment, as some companies became entrenched in alignment plans that impeded their adaptability to change. Similarly, Palmer and Markus (2000) did not detect a relationship between alignment and performance when investigating the implementation of Quick Response technology in the retail sector. It has been suggested that these negative or ambiguous findings may stem from insufficient control variables in the analyses.Chan et al. (2006) identified that factors such as industry, organizational size, and strategic type all influence the performance implications of alignment. Byrd et al. (2006) determined that strategic alignment plays a direct role in moderating the relationship between IT investment and business performance. The true value of alignment lies in leveraging the firm's IT investment to optimize performance.

B. Correlation Analysis

Table 3: Correlation Coefficients

		Organization Performance	Information Technology Skills
Organization Performance	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	116	
Information Technology Skills	Pearson Correlation	.861**	1
	Sig. (2-tailed)	.001	
	N	116	116

Further, the results revealed that there is a very strong relationship between Information Technology skills and performance of Tea Producers companies in Kenya (r = 0.861, p value =0.001). The relationship was significant since the p value 0.001 was less than 0.05 (significant level). The findings are in line with the findings of (Belete and Hagos, (2020) that there is a very strong relationship between Information Technology skills and organization performance.

➢ *Test for Hypothesis one*

The third objective of the study was to establish the role of Information Technology skills on performance of Tea Producers companies in Kenya. The corresponding hypothesis was:

- Ho_3Information Technology skills has no significant role on the performance of Tea Producers companies in Kenya.

Table 4: Model Summary for Information Technology skills

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.472[a]	.223	.225	.75632

a. Predictors: (Constant), Information Technology skills

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A univariate analysis was conducted to examine the null hypothesis. According to the model summary findings presented in Table 4, the R-squared value for the relationship between Information Technology skills and the performance of Tea Producers companies in Kenya was determined to be 0.223. This indicates that, at a 95% confidence interval, approximately 22.3% of the variance in the performance of these companies can be explained by changes in Information Technology skills. Thus, Information Technology skills have the capacity to elucidate 22.3% of the variability in the performance of Tea Producers companies in Kenya. However, it's noteworthy that the remaining 77.7% of the variance in performance suggests the existence of other factors beyond Information Technology skills that also influence the performance of these companies.

Table 5: ANOVA for Information Technology Skills

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.933	1	40.933	181.924	.000[b]
	Residual	25.602	114	0.225		
	Total	66.535	115			

a. Dependent Variable: Performance of Tea Producers companies in Kenya
b. Predictors: (Constant), information technology skills

The analysis of variance (ANOVA) was utilized to assess the adequacy of the regression model in predicting the performance of Tea Producers companies in Kenya. According to the ANOVA findings presented in Table 2, it was observed that the probability value (Prob>F1,131 = 0.000) was less than the chosen significance level of 0.05. This indicates that the model, as constructed, demonstrated a good fit for predicting the performance of these companies. Furthermore, the calculated F-value (181.294) obtained from the analysis exceeded the critical F-value (3.924) derived from the F-distribution tables. This reinforces the conclusion that information technology skills can indeed serve as predictors of the performance of Tea Producers companies in Kenya.

Table 6: Beta Coefficients for Information Technology Skills

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.208	.046		4.522	.000
	information technology skills	.469	.094	.471	4.989	.000

a. Dependent Variable: Firm Performance

From the results in table 6, the following regression model was fitted.

$Y = 0.208 + 0.469 X_3$

(X_3 is information technology skills)

The coefficient results showed that the constant had a coefficient of 0.208 suggesting that if information technology skills was held constant at zero, Performance of Tea Producers companies in Kenya would be at 0.208 units. In addition, results showed that information technology skills coefficient was 0.469 indicating that a unit increase in information technology skills would result in a 0.469 unit improvement in Performance of Tea Producers companies in Kenya. It was also noted that the P-value for information technology skills was 0.000 which is less than the set 0.05 significance level indicating that information technology skills was significant. Based on these results, the study rejected the null hypothesis and accepted the alternative that information technology skills has positive significant influence on Performance of Tea Producers companies in Kenya.

V. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

Further, the study concludes that information technology skills have a positive and statistically significant influence on performance of Tea Producers companies in Kenya. Findings revealed that cross-training, encouraging innovation and providing employment opportunities influences performance of Tea Producers companies in Kenya. This implies that a unit improvement in information technology skills would lead to improvement in performance of Tea Producers companies in Kenya.

B. Recommendations

The study also found that information technology skills have a positive and statistically significant influence on performance of Tea Producers companies in Kenya. This study therefore recommends that the management of Tea Producer companies should ensure their employees are well equipped with information technology skills to improve their productivity.

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