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Relationship between leadership styles and adoption of technology by manufacturing companies in Kenya.

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RELATIONSHIP BETWEEN LEADERSHIP STYLES AND ADOPTION OF TECHNOLOGY BY MANUFACTURING COMPANIES IN KENYA

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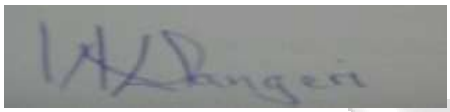
DECLARATION

I declare that this work has not been previously submitted and approved for the award of a

Degree by this or any other university. To the best of my knowledge and belief, the proposal contains no material previously published or written by another person except where due reference is made in the thesis itself.

Ms. Blanche Kangeri



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Approval

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ABSTRACT

Organizations today face accelerated technology usage with various technological advancements promising to improve business operations, enhance speed and increase efficiency. The present digital revolution as well as increased global business competition is compelling executives to adopt different technologies suitable to their organizations in order to optimize operations, improve the quality and quantity of output and ultimately drive these organizations into continued profitability and sustainability. This study examined the relationship between leadership styles and technology adoption in organizations, an important area where minimal research has been undertaken. The study examined the dominant leadership styles among the top management team in publicly listed manufacturing companies, how the dominant leadership style exhibited influences technology adoption, and how the top management team uses the adopted technological applications. The study focused on transformational, transactional and laissez faire leadership styles. Primary data was collected through a self-reported questionnaire administered to the heads of department and other senior management leaders of nine publicly listed manufacturing companies in Kenya. By using a descriptive research design to analyse the collected data, the study found that transformational leadership, transactional leadership (management by exception-passive) and traces of laissez faire leadership existed among the top leaders surveyed. The study findings demonstrate that the leaders surveyed were mostly in the early majority bracket on the technological adoption spectrum. The findings also showed a consensus among the respondents that technology integration was beneficial in supporting their management functions. Based on these findings, the study recommends that the top management teams in both the manufacturing industry as well as other organizations should drive investment, adoption and use of relevant technologies that would positively influence their organizations into optimizing their operating capacity, efficiency, profitability and ultimately contribute to long term sustainable growth.

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DEDICATION

To God almighty for His unending favour, provision and grace. To my family whose prayers, support, and patience is invaluable. To my parents and siblings for walking with me every step of the way and encouraging me on this journey. To my friends and cohorts from Strathmore for challenging me and constantly reminding me that I was up to the task. God bless you all

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

In the present age of accelerating digitization, the use of technology to gather quality information for formulating and delivering competitive services will enable innovative business models and leadership approaches which will reshape business models as automation continues to do for manufacturing. (Claudia Loebbecke, 2015). The technological boom in the 21st century has contributed to the growth of technology use and increase in innovations which have transformed modern business environment (Ombati, Magutu, Nyamwange, & Nyaoga, 2010). Studies note that developed countries in Europe and the United States have leveraged technological innovations over the last five or more decades to revolutionize their markets and stimulate organizational growth (Hayashi & Klee, 2003). Technology can be defined as applying knowledge to perform work or the theoretical and practical skills, artifacts, and knowledge that can be used to develop products, their delivery and production system (Dasgupta, Gupta, & Sahay, 2011). Sometimes, it is broadly referred to as Information Communication Technology (ICT), hence used interchangeably by researchers. Adopting technology also involves using computer hardware and software in an organization to support operations, management, and decision-making (Davis & Olson, 1985) .Technology innovation, on the other hand, involves developing new products by introducing new production processes which incorporate the latest technologies to improve company operations and spur organizational growth (White, 2000).

Information has always been critical in business performance and the effectiveness of management. ICT has transformed how information is relayed to managers to facilitate business planning and decision making. It is expected that data and technology must be integrated into an organisation′s overall management and planning system, rather than being controlled by specialist information technology professionals, and that the managers have to be responsible for people, their motivation, training, business systems, culture and environment, as well as the organisation′s data resource (Sharrat & McMurdo, 1991).

The COVID 19 pandemic has further accelerated the need for technology adoption and use in all organisations. When the pandemic struck, business organisations rushed to innovate ways of engaging their employees and clients through remote working in adherence to restrictions that countries put in place to limit in-person gatherings in an attempt to contain the pandemic. The work from home or work from anywhere policies meant that employees had to work together, albeit from different places, hence leading to widespread adoption and usage of

teleconferencing applications such as Zoom, Google Meet, Microsoft Teams among others. With the COVID 19 related restrictions gradually being relaxed due to vaccination initiatives, it can be expected that organisation would adopt hybrid working models, blending working within office premises as well as remote working. The use of technological applications will most likely remain at the heart of operations of most organizations, even if a hybrid model of work is adopted by such organizations.

Further, increased adoption of technology to support functions and processes in organizations would result from the Fourth Industrial Revolution. The Fourth Industrial Revolution is defined as intelligent networking of machines and processes in an industry with information and technology. In this era, more technology will be introduced and adopted given the growth prospects that the revolution would likely bring to businesses (Aziz , Md Rami, Razali, & Mahadi, 2020). Studies also indicate that this revolution would be particularly beneficial to manufacturing companies because of the capacity to provide automated solutions to various manufacturing challenges (Mohd, et al., 2020).

It is worth noting that since today's organizations operate in the context of the information age, technology has revolutionized organizational leaders' operating environment (Abu-Nahleh, 2013). Technology evolution affects administrative and leadership spaces (Van Wart, Roman, Wang, & Liu, 2017), and as such it presents corporate leaders with challenges and opportunities to restructure how they accomplish administrative leadership tasks and change fundamentally (Kotter J. P., 2001).

Despite the challenges that come with leading in a digital era, leaders are expected to continue being effective in driving organisations they lead forward. Leadership styles may play a critical role in the integration of technology to facilitate organizational processes. It is therefore important to understand how leadership positioning in organisations would prepare those organisations to harness emerging technologies. Leadership management is expected to influence the transition of business organisations to be technology-driven.

1.1.1 Leadership styles

Leadership is an influence process in which the leader seeks to meet the organizational objectives through the voluntary engagement of subordinates (Amoako-Asiedu, 2017). A leader has been defined as a person who delegates or influences others to act in order to carry out specified purposes (Pieters, Knippenberg, Schippers, & Stam, 2009). Organizations today require influential leaders who understand the dynamics of the changing global environment. This includes an understanding of the role of technologies in supporting business operations.

If the task is highly structured and the leader has a good relationship with the employees, effectiveness will be high on the part of the employees (Mary Uhl-Bien, 2007).

Leadership style on the other hand entails the approach taken by the leader to influence their subordinates towards achieving desired results. It is often a joint outcome of the leader's self-related cognitive information, personality traits, the underlying motives and the understanding of the operating situational variables (Toor & Ofori, 2009). The style of leadership adopted by the leaders, especially those at the top echelons of an organization ultimately affect the performance and effectiveness of that organization. A number of leadership styles have been discussed in literature. These include transformational leadership, transactional leadership, laissez-faire leadership, coaching leadership, autocratic leadership, affiliative and pace-setting styles. The styles are largely differentiated by the level of authority and decision-making power of the leaders and their subordinates (Mansaray, 2019). The performance and effectiveness of an organization are affected by the leadership style adopted by the leader. Thus, the success and failure of organizations may be attributed to the leaders' leadership style (Oladipo, Jamilah, Abduldaud, Jeffery, & Salami, 2013). This could be interpreted to mean that the buck stops with the leaders if organizations fail to tap appropriate technologies in their operations.

1.1.2 Technology adoption in organizations

Technology is one of the critical elements in ensuring organizations remain competitive in the growing global environment (Vukšić, 2013). Globalization and free trade agreements have increased pressure on businesses to embrace digitization in order to cope with increasing competition. Manufacturing companies in Kenya are similarly compelled to adopt technology to survive the international competition (Solomon Kinyanjui, 2014). Exposure to global competition has necessitated a departure from reliance on the simple conversion of raw materials into goods, to a process of continual reinvention. Globally, products are now made better, faster, and cheaper; hence manufacturing companies in Kenya have to adopt new appropriate technologies in their processes to compete favourably. Studies however indicate that the level of technology adoption in Kenya remains low (Nyori & Ogolla, 2015).

Hetu (2017) asserted that adoption of technology and innovation is a decision of full use of technology or innovation as the best alternative available. Technological innovation was defined by Diaconu (2011) as the new processes, products, and services brought about due to changes in technology

Prior studies have shown that drivers of technological innovation in organizations which include manufacturing companies are leadership practices, social factors, technological factors, and management practices. Additionally, results reveal that poor management practices and

over-reliance on existing resources, among others, are barriers to innovation. In brief, management practices and leadership practices seem to be critical factors in overcoming obstacles (Agolla & Van Lill, 2016), hence the spirit of this research.

Generally, the adoption of technological innovations is linked with positive change but concerns about the negative consequences of technology-driven industrialism and the assumptions underlying its practice are growing (Ombati, Magutu, Nyamwange, & Nyaoga, 2010). Usually, every novel development is bound to be associated with positive and negative outcomes. However, if properly incorporated and applied, the positive consequences in this context may outweigh the negative ones.

Researchers such as Onguyemi and Johnston (2012) examined the influence of leadership on technology adoption among organizations. They asserted that top management leadership's ineffectiveness was a significant constraint to the successful adoption of technology by the organization. Thus, it could be hypothesized that the leadership style and top management characteristics directly influence the degree of technology application in an organisation's operations. In this respect, numerous studies have concluded that transformational leadership catalyses change (Bass & Riggio, 2006) and innovation (Jung, Wu, & Chow, 2008). Generally, leaders define and shape work settings in which employees interact such that new knowledge and technological application can augment performance within the organization (Wang & Howell, 2012).

However, the adoption of technology in organizations has been met with challenges such as employees' reluctance to accept and use a particular technology. Arguably, most organizations in developing countries are struggling with the implementation of new technologies (Waziri, Ali, & Aliagha, 2015).

Since leaders are expected to show the direction towards achieving organizational goals, they ought to champion the incorporation of technologies in operations to streamline processes and even improve administrative procedures. Suppose a leader clearly states the benefits of using a particular technology in helping the organization achieve its predefined objectives; in that case, employees might find it helpful to work with the proposed systems (Schepers, Wetzels, & de Ruyter, 2005). In addition, authors like Hartono and Mada (2012) posited that unless the leader has the will to innovate, there is little that other employees can do to expedite technology adoption. This further informed the importance of this research on the linkage between leadership styles and technology adoption in the context of manufacturing organizations in Kenya. The research explored whether the organizations' leadership and top management participated in the adoption and use of technologies in those companies as direct users.

1.1.3 Manufacturing Companies in Kenya

Countries that are considered developed globally realized that status through industrialization (Sheehan, 2008). Industrialization involves a movement of labour and capital from agricultural production into the manufacturing sector, leading to an increase in manufacturing value-add in the Gross Domestic Product (GDP). Thus, the manufacturing industry is key to the development of a country. In Kenya, the share of the manufacturing sector to GDP has been on a declining trend from 11.8% in 2011 to 8.4% in 2017 (KAM, 2019).

To reverse this trend, companies in this sector have to reimagine ways of doing business. Adopting strategies that will bolster their operations could lead to overall improved performance.

Technological capacity is one of the critical, indispensable, tactical resources utilized by organizations globally to transform and differentiate themselves and to achieve a competitive advantage, especially in the manufacturing industry (Walsh, 2012). In addition, organizations with advanced technological practices and skills appear to show higher performance levels and are perceived to be more creative and innovative (Pang & Chih, 2012).

Other studies have revealed that exposure to global competition pushes manufacturing companies worldwide to reinvent since they can no longer rely on simple conversion of raw material into goods (Nyori & Ogolla, 2015). Similarly, manufacturing companies in Kenya have to adopt technological innovations at various levels of their operations to produce goods that are globally competitive.

In Kenya, the food and beverages processing firms in the manufacturing sector are grappling with the escalation of energy utilization and the subsequent elevated cost of production due to the continued use of outdated technology (KAM, 2018). Through its Center for Energy Efficiency and Conservation, the Kenya Association of Manufacturers (KAM) has indicated that players in the manufacturing industry are still using archaic and obsolete technologies that have increased energy inefficiency and lowered the competitiveness of locally produced commodities (Jonas & Rai, 2013). KAM has continually encouraged its members to adopt efficient energy technology to cut energy costs and improve efficiencies.

1.2 Problem Statement

It has been asserted by previous researchers that leadership has a focal role in enabling technology adoption in any organization. Onguyemi and Johnston (2012) examined the influence of leadership on technology adoption among organizations, a study which established that the top management's leadership ineffectiveness is a significant constraint to the successful adoption of technology by the organization. Based on this finding, it could be hypothesized

that the leadership style and top management characteristics directly influence technology application in the organization's operations. Understanding the inter-relationship between leadership styles and technology adoption can provide insights on managerial priorities that organisations should consider as they position themselves to harness the transformational power of various technologies on business processes. This makes a study on the influence of leadership style on technology adoption increasingly important for modern day organizations.

Technology can be an important driver of efficiency and growth in manufacturing companies in Kenya. Cognizant of this fact, the Kenya National ICT Policy 2019 identifies information communication technology (ICT) as a fundamental enabler of development in Kenya for a double-digit growth of 10 % by 2030 in the economy (Ministry of ICT Kenya, 2019).Through its ability to integrate and blend a number of knowledge intensive technologies, such technology can enable the traditional manufacturing base to be competitive in a global environment. Innovative use of ICT could enhance the development of new sales channels, new product capabilities and product differentiation, reduce costs, increase productivity and improve strategic decision-making and risk management; these results should be evident in enhanced business performance according to a report by the Kenya National Bureau of Statistics (KNBS) (KNBS, 2019).

Whereas leadership is an important factor in technology adoption decisions in organizations, a few studies have analysed the relationship between leadership styles and ICT adoption in an organization globally. Such studies on leadership and ICT adoption include the study on Tehran's educational institutions (Ashfari, Bakar, Luan, Samah, & Fooi, 2009), and another conducted on service industries in the Netherlands (Schepers, Wetzels, & de Ruyter, 2005).

Limited studies have established the relationship between leadership styles and technology adoption within organizations in Kenya, with a majority prior studies concentrating only on the relationship between leadership styles and general organizational performance. It cannot be doubted that the relationship between leadership styles and technology adoption is an important area to investigate. Since the COVID 19 pandemic has accelerated the need for technological innovation within organizations by shifting the way organizations handle both their businesses and internal operations, it is increasingly important to understand whether leadership styles would affect how quickly organizations innovate in adapting to this new reality. At the core of these innovations is adopting new technologies to digitize and automate processes in this work-from-home era.

As different organizations worldwide strive to bolster their efficiency and sustainability by embracing technology as an enabler, factors that could support or inhibit the successful deployment of technologies within them are crucial areas of concern. Thus, examining how top

management's leadership style directly influences the adoption of technologies is essential as this may inform the likelihood of successful adoption of new technologies in such organizations. It is also important in informing what leadership characteristics that would yield the most beneficial results if an organization were to adopt technological innovations to streamline both core processes and management functions. This is important for organizations to align their key leadership priorities with business goals. Consequently, this study investigated the relationship between the top management team's leadership style and technology adoption and usage for management functions within manufacturing organizations in Kenya, to which technology adoption is critical for profitability, growth, and sustainability. The choice of the manufacturing sector was informed by the fact that it is a vital driver of the economy as well as a pillar in Kenya's Big 4 Agenda.

Top management support has been recognized as one of the most significant factors that enhance enhances chances of success for technological adoption, since successful adoption, implementation and use of complex systems often require adaptation and change of organizational context (Shao, Feng, & Hu, 2016). Hence, how leadership characteristics relate to the adoption of technology, which has enormous benefits to the industry, is an area of key interest.

1.3 Research Objectives

1.3.1 General objective

This study's general objective was to explore the relationship between leadership styles and technology adoption in manufacturing companies in Kenya.

1.3.2 Specific objectives

(i) To establish the relationship between transformational leadership style and technology adoption in manufacturing companies.

(ii) To establish the relationship between transactional leadership style and technology adoption in manufacturing companies.

(iii) To establish the relationship between laissez-faire leadership style and technology adoption in manufacturing companies.

(iv) To determine the relationship between manufacturing companies' dominant leadership styles and the adoption of technology.

1.4 Research Questions

1. What is the relationship between transformational leadership style and technology adoption in manufacturing companies?
2. What is the relationship between transactional leadership style and technology adoption in manufacturing companies?
3. What is the relationship between laissez-faire leadership style and technology adoption in manufacturing companies?
4. What is the relationship between the dominant leadership style in manufacturing and the adoption of technology?

1.5 Scope of the Study

This study examined the relationship between leadership styles and technology adoption, with the leaders as direct users of technology to support management functions in publicly listed manufacturing companies in Kenya. The study focused on three leadership styles: transformational leadership, transactional leadership, and laissez-faire leadership. Primary data was gathered by surveying respondents sampled from nine publicly listed manufacturing companies in Kenya through a questionnaire patterned after the Multifactor Leadership Questionnaire (MLQ). The questionnaire was modified and administered to the respondents electronically.

The publicly listed companies were selected due to their structures which necessitate the need for greater integrity, transparency and availability of information to stakeholders.

The choice of the manufacturing sector was informed by the fact that it is a vital driver of the Kenyan economy as well as a pillar in Kenya's Big 4 Agenda. In addition, the Kenyan government has in the recent past developed policies and strategies targeted at ensuring development of the manufacturing sector as the country seeks to bolster its manufacturing capabilities. Vision 2030 states that the role of the manufacturing sector is to create employment and increase contribution to the GDP by at least 10% per annum (Bigsten, 2010). Hence, how leadership characteristics relate to the adoption of technology, which has enormous benefits to the industry, is an area of key interest. The data collected was analysed using descriptive and inferential statistics to assess whether there was a relationship between leadership styles and technology adoption by top leaders in manufacturing companies in Kenya.

1.6 Significance of the Study

This study was carried out when effective leadership and the use of technology in the wake of digital transformation in Africa are perceived as critical drivers of organizational performance.

Organizational technology adoption decisions have become exceptionally important, and they must be timely (Van Wart, Roman, Wang, & Liu, 2017).

Given that manufacturing is a pivotal contributor to the Kenya's economic development through industrialization, manufacturing companies in Kenya have been endeavouring to achieve optimized processes to compete on a global scale effectively. How technology is used in such companies is crucial to how they will perform going forward. Consequently, inter-relationships between leadership characteristics of top management and adoption of technological innovations in these companies remains paramount.

This study is significant to policymakers in Kenya since it shows how leadership attributes may influence the adoption technological applications that are beneficial to business operations and ultimately growth and profitability. This could therefore inform policies on organizational governance.

Future scholars are also likely to benefit from its findings since this study provided empirical and theoretical consistency to prior studies. From the findings, scholars may advance future empirical studies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter discusses the theoretical framework, the empirical review, and the conceptual framework of the study. The theoretical framework discusses the various theories of organizational leadership and their relevance, along with the concept of leadership styles. The empirical review details prior studies on the relationship between leadership styles, organizational effectiveness, and technology adoption. Existing literature is critically reviewed, and the gaps, which form the basis of this study, are identified. The chapter ends with the conceptualization and operationalization of the study variables.

2.2 Theoretical Framework

2.2.1 Theories of organizational leadership

Organizational leaders play a central role in managing the organization's process and resources (Eisenbach, Watson, & Pillai, 1997), which emphasizes making high-quality decisions to ensure the organization thrives.

To this extent, scholars have put forward theories to explain the critical subject of leadership. These theories explain how organizations structure their operations such that decisions flow from top management to subordinates. Leadership theories initially focussed on specific characteristics and behaviours of leaders. Initially, theories such as the great man theory postulated that leaders possess some innate characteristics that are unique to them. This theory championed the concept of a great leader being 'born great.' It claimed that leaders are born, and only those who possessed heroic potentials could ever become leaders. Progressively, other theories were brought forward which begun to focus on the leaders' followers and the context in which they exercised their leadership, rather than the dogma that leaders are born and destined by nature to be in their role at a particular time (Khan, Nawaz, & Khan, 2016).

Situational and contingency leadership theories suggest that leadership is specific to the situation in which it is being exercised. This means that there may be different styles of leadership required within one organization at different levels. These theories recommend that there is there exists no single way to lead because the environment's internal and external dimensions require the leader's adaptation to that particular situation. There is no single defined way to lead as the leadership style in certain circumstances may not be effective for others (Greenleaf, 1996). This theory is becoming more relevant in modern organizational leadership.

Other leadership theories suggested by different scholars (Barrick, Day, Lord, & Alexander, 1991) include trait theory, management theory, relationship theory, process theory, behavioral theory, and participative leadership theory.

The management theory, which constitutes transformational, transactional and laissez-faire leadership theories, has been widely studied. The three theories explain how leaders stimulate their followers to perform. This study focused on the management theory of leadership by analysing transformational, transactional and laissez-faire leadership styles.

2.2.2 Leadership styles

Leadership style refers to how organizational leaders provide guidance, implement plans and motivate people. The style adopted by a leader is considered one of the primary agents that play a significant role in improving or worsening employees' attention and involvement (Obiwuru, Okwu, Akpa, & Nwankwere, 2011).

Generally, today's stiff competition among organizations has made it necessary to study leadership styles to identify those suitable for organizations to adopt (Zeb, Saeed, Ullah, & Rabi, 2015), which has led different scholars to carry out studies attempting to explain the different approaches that leaders take to steer organizations. Building on this concept of leadership styles initially framed by Burns (1978) while evaluating political leadership, Bass (1985) developed a model that defined leadership in three essential leadership forms: transformational, transactional, and laissez-faire. The difference between the various leadership styles is domiciled within their motivational procedures and level of authority exerted on the followers.

2.2.2.1 Transformational leadership

A transformational leader encourages his subordinates to perform beyond expectations (Burns, 1978). These leaders develop a strategic and clear vision and communicate it effectively to their subordinates (Bass, 1985). They build commitment to the organization's objectives and empower their followers to achieve those objectives (Yukl, 1998). Bass (1985) notes that transformational leaders achieve their subordinates' most excellent performance since they inspire them and develop their problem-solving skills. This notion was also advanced by other researchers such as (Turner, Barling, Epitropaki, Butcher, & Milner, 2002), (Waldman, Bass, & Yammarino, 1990) and (Judge & Piccolo, 2004), who linked the transformational leadership approach to more positive outcomes. Yammarino, Spangler and Bass (1993) discovered a correlation between transformational leadership and performance. Additionally, most studies have cited transformational leadership as an agent of change (Bass & Riggio, 2006) and

innovation (Jung, Wu, & Chow, 2008) within an organization. Thus, it can be inferred that transformational leadership influences the innovativeness of an organization.

Most researchers who have studied transformational leadership have reached a consensus that four theoretically distinct components characterize transformational leadership. First is idealized influence, where the leader creates trust, admiration, respect, and loyalty among the subordinates by displaying charismatic vision and behavior. This attribute is sometimes referred to as charisma. The second component is inspiration motivation which entails the leader inspiring the followers to new ideas and goals by articulating the future vision. Thirdly, intellectual stimulation is where the leader stimulates followers to question assumptions, reframe problems, and approach old situations in new ways. This promotes innovativeness among employees as they go about their work responsibilities. Lastly, individualized consideration involves the leader paying attention to individual needs, achievements, and growth of their followers by providing coaching and mentorship and creating learning opportunities for them to thrive their roles.

Previous studies have mostly concluded that the purpose of transformational leadership is to create a significant change for both the followers and the organization. These leaders are said to paint a vision of the future and inspire their followers to build confidence in the vision of the organization's transformation.

2.2.2.2 Transactional leadership

This leadership style focuses on maintaining the status quo and motivating people through contractual agreements (Bass B. M., 1985). It has been argued to be more emphatic on extrinsic rewards such as monetary incentives or promotion prospects to increase followers' motivation for good performance, and enforcing punishments when followers fail to meet expectations. It has also been argued that transactional leaders give their followers the things they want in exchange for the things the leaders need (Kuhnert & Lewis, 1987). The leader gets the job done while the followers receive the rewards.

This leadership style has also been described as being based on traditional bureaucratic authority and legitimacy (Bass, Avolio, & Atwater, 1996). Some scholars have argued that adopting this style within an organisation is a detriment to creativity among employees (Amabile, Conti, Coon, Lazenby, & Herron, 1996), an assertion supported by Bono and Judge (2004) in their meta-analysis comparison of transactional and transformational leadership styles. For this reason, this leadership style is argued to be best suited for stable work environments with minimal competition (Seyal, 2015) since style emphasizes on fostering compliance to organizational rules so as to keep the organization stable as opposed to promoting change.

There are research findings that indicate that both transformational leadership and transactional leadership have a positive impact on organizational change (Long & Mao, 2008), especially on technology adoption (Spencer, Dimitrios, & Miguel, 2012). Yang and Chen (2010) also analysed transactional and transformational leadership styles and their effect on project adoption by teams in a study which concluded that the managers' leadership style, teamwork, and project performance are highly correlated. The findings also indicated that collaboration may be entirely dependent on leadership style and project success.

2.2.2.3 Laissez-faire leadership

This leadership style provides little or no direction, and employees in an organization are allowed the freedom to determine goals, make decisions and resolve problems on their own (Sharma & Singh, 2013). The leader does not interfere and sometimes avoids taking responsibilities and avoids making decisions (Chaudhry & Javed, 2012). It is termed as a hands-off leadership approach (Talbert & Milbrey, 1994) as such leaders do not involve themselves in working units thereby allowing their subordinates complete freedom to make decisions (Chaudhry & Javed, 2012). Burns (1978) also observed that laissez-faire style may be marked by a general failure to take responsibility for managing employees.

This style of leadership has largely been associated with negative results such as work-related stress (Skogstad, Einarsen, Torsheim, Aasland, & Hetland, 2007). However, Ryan and Tipu (2013) suggested that there could be some positive outcomes of laissez-faire leadership in employees' innovation propensity, as it may facilitate an environment that allows for innovation to occur.

It is important to note that the three leadership styles discussed above are not mutually exclusive. Avolio (2011) emphasized the need to balance three leadership styles. These styles may be positioned in a spectrum where the least people-concerned style is laissez-faire, while transactional style focuses on rewards, promises, and benefits to promote objectives and transformational leadership is designed to help employees meet their goals through building commitment (Avolio, 2011). The current study adopted the above definitions of leadership styles and focused on transformational, transactional and laisses-faire leadership styles, as some of the determinants of effective leadership (Bass B. M., 1997).

2.2.3 Technology adoption theories and models

Adopting a particular technology to support various organizational functions is often affected by the rate of technological change and the general acceptance by the technology users. To this end, several theories and models have sought to explain the users' acceptance of new

technologies and their intentions of use. These models point out the primary factors leading individuals and organizations to adopt technologies in pragmatic terms (Muthu, Thurasamy, Alzahran, Alfarraj, & Alalwan, 2016).

Rogers (1995) proposed the theory of Diffusion of Innovations (DOI) which established the foundation of research on innovation acceptance and adoption among individuals and organizations. This theory explained that innovations and adoption happen after going through several stages, including understanding, persuasion, decision, implementation, and confirmation that results in an adoption curve of innovations wherein lie the innovators, early adopters, early majority, late majority, and laggards. The theory postulates that the process of innovation or adopting new technologies is communicated through specific channels over time to members of a social system (Rogers, 1995).

Another model is the task-technology fit model which assumes that a good fit between the task to be accomplished and the technology aims at increasing performance and effectiveness (Goodhue & Thompson, 1995). Fishbein and Ajzen also proposed a broad Theory of Reasoned Action that focused on subjective state of individuals making adoption decisions (Fishbein & Ajzen, 1975). They concluded that attitude and beliefs about technology influence the user behavior.

To increase the explanatory power of the Theory of Reasoned Action, Ajzen (1991) added perceived control of behavior as a major factor that users perceive may limit their behaviour. This resulted in an expanded theory called the Theory pf Planned Behavior.

Finally, the most widely studied model in technology acceptance is the Technology Acceptance Model (TAM) which focuses on psychological factors namely perceived usefulness to both self and the organization, and the perceived ease of use of a particular technology (Davis, Bogozzi, & Warshaw, 1989). The perceived usefulness is the potential users' subjective likelihood that using a specific system will improve their action. On the other hand, perceived ease of use is the degree to which the potential users expect the target system to be effective (Davis F. D., 1989). Notably, usefulness and ease of use are considered among the most powerful factors in adoption decisions (Venkatesh, Morris, Davis, & Davis, 2003). Decision makers need to know the issues that influence users' decisions to use particular technologies in order to consider such issues during technology development phase. However, critics of this model have pointed out that other external variables such as social influence, user training and system characteristics may also influence the user's perception of a particular technology system.

This study was primarily related to the theory of Diffusion of Innovations which establishes a theoretical foundation to discuss technology adoption. This theory explained adopter characteristics which are categorised into innovators, early adopters, early majority, late majority and laggards (Sila, 2015). These are important to analyse technology adoption at organizational level. Whereas Taherdoost (2018) critiqued this theory by pointing out that its reliance on system characteristics and organizational attributes weakened its explanatory power in practical situations, this researcher took the position that the model would suffice for this study since the study focused on organisation, the influenced of leadership styles on technology adoption was explored from the point of view of the leaders being direct users. Moreover, the DOI model characterized adopters and hence was deemed useful in differentiating the pace at which different organizations were likely to adopt technological innovations as differentiated by leadership styles of the top management. DOI focuses on adoption decisions in which organizational characteristics play a key role (Taherdoost, 2018). The author contended that adoption of technological applications in manufacturing organizations is only possible if the top management ratifies deployment of resources to acquire and implement those technological applications. Reaching such a decision is often a staged process that includes consultations, persuasion and ratification of proposals to integrate a given technology and implement it. It is likely that the leadership attributes of the top management would influence how the proposals are received and how fast these processes move

The study also borders on aspects of the Technology Acceptance Model since leader's attributes through the eyes of the employees may sway the perceived usefulness of a new technology. A leader may, for example, champion the application of such technology influencing followers' adoption and use of the technology

2.3 Empirical Review.

This section details prior studies on the subject of inter-relationship between leadership styles of top management and technology adoption both for direct and enterprise-wide use. The section also presents the existing gaps in literature that motivated this study.

2.3.1 Leadership styles and technology adoption in an organization.

In today's global economy, organizations are under constant pressure to innovate products, services, and processes (Andriopoulos & Lowe, 2000). Usually, organizations will innovate new ways of carrying out internal processes by adopting new technologies that hasten their operations' speed and efficiency. The use of technology in business processes and operations has been linked to enhanced competitiveness, improved processes, and even access to new markets since the output is of high quantities and high quality. Since the onset of the coronavirus disease 2019 (COVID 19) pandemic, most organizations, even outside of the

manufacturing industry, have been driven to adopt technology in various aspects of their operations, such as virtual interactions among employees and between employees and clients due to the 'work from home' policies. For organizations in the manufacturing industry, various technologies speed up the process and promote overall efficiency. This in turn results in quality products that can compete on a global scale. Therefore, an understanding of a leadership style's impact on the organization's adoption and implementation of technology in manufacturing companies in Kenya is needed.

The right leadership style influences employees to adopt and use new technologies rolled out within an organisation and is also crucial for managing expectations, facing failures and retaining the use of technology within the organization (Aziz , Md Rami, Razali, & Mahadi, 2020). For instance, research evidence has suggested that transformational and transactional leadership play a key role in leading effective organizational change, especially in adopting technology (Spencer, Dimitrios, & Miguel, 2012). These leadership styles are the most commonly studied for technology acceptance, but mainly based on the Technology Acceptance Model (Aziz , Md Rami, Razali, & Mahadi, 2020). Generally, top management's characteristics in their leadership styles are a vital determinant of the successful adoption and use of technology within their organizations.

Jung (2001) identified managers' leadership behavior as one of the key factors that stimulate organizational innovativeness and enable it to thrive amidst a competitive landscape. Schepers, Wetzels, and de Ruyter (2005) also carried out an empirical study on the influence of transformational and transactional leadership on technology acceptance within service organizations. Using a Dutch global high technology company, they analysed how these leadership styles affected individual acceptance of technology within the organization's customer service department. Their study was premised on the hypothesis that introducing new technologies in an organization is faced with the challenge of acceptance among employees. They tested the conceptual model on the use of software for planning and coordinating service activities on a laptop by employees. Their findings indicate that transformational leadership positively influences the perceived usefulness of a technological application within organizations along the sub-dimension of intellectual stimulation. Transactional leadership, however, did not show any significant influence. While these researchers supported their findings, they only dealt with one construct of transformational leadership. They disregarded other constructs such as idealized influence, inspiration motivation, and individualized consideration. Thus, with the majority of transformational leadership constructs left out, the soundness of their conclusion may be debated. Furthermore, they failed to address whether the perception of the usefulness of technology translated into increased adoption of different

technological applications. In addition, the strength of their results and conclusion is further limited by the fact that they focused on a single department of only one company to conclude. There is no evidence that other organizations exhibited the same pattern of perceived usefulness within and beyond the service sector. Thankfully, the researchers acknowledged this limitation.

Bakar, Samah, Afshari, Luan, & Fooi (2008) investigated the relationship between leadership styles and ICT use among educational institutions in Tehran. Their correlation analysis established that a strong positive correlation existed between transformational leadership and computer use in schools. Similarly, Seyal (2015) analyzed the relationship between the transformational leadership style of principals and technology adoption among Bruneian technical and vocational establishments. He used a survey approach to carry out the study, whose findings indicate that most technical and vocational institutions' leadership style was related to various uses of ICT in those institutions. Their correlational analysis showed a significant positive relationship between transformational leadership and technology both in its development and operation phases. From the findings, the researcher concluded that transformational leadership among top management is key during technology development and operational phases.

Waziri et al. (2015) found a strong positive and direct relationship between transformational leadership and ICT adoption among Nigerian construction companies. This study recommended that organizational leaders exhibit innovative and change-adaptive behaviors to succeed in the global arena.

Two other researchers, (Afzaal & Mohd, 2014), analysed the leadership styles of Chief Executive Officers (CEOs) in the adoption and implementation of e-business technologies with a focus on small and medium enterprises (SMEs). By investigating sixty CEOs' leadership styles towards implementing Enterprise Resource Planning (ERP) systems among Bruneian SMEs, they reported a significant effect of transformational leadership towards implementing ERP systems among those organizations. Further support to these findings is found in (Chen, Lin, Lin, & McDonough, 2012), who analysed the relationship between transformational leadership and technological innovations among small businesses in Taiwan. From their study, they concluded that transformational leadership behaviors promoted the implementation of technological innovations among small business units. Studies of this nature have formulated the leadership style as the independent variable, and the parameter whose link to leadership style is being investigated fashioned as the dependent variable. Benchmarking on this, the researcher in the present study formulated adoption of technology in the organization as the dependent variable.

Generally empirical literature remains scanty on the link between leadership styles and technology adoption within organizations since only a few researchers did studies about leadership style and technology change (Aziz , Md Rami, Razali, & Mahadi, 2020). To this researcher's best knowledge at the point this study was carried out, no prior study had documented a link between laissez-faire leadership and technology adoption.

2.4 Research gap

While most prior studies focused on how leadership styles augment organizational performance, literature linking the leadership styles to the adoption of technology in manufacturing organizations is scanty.

Some scholars such as Bakar et al. (2008) and Afzaal and Mohd (2014) attempted to study the influence of leadership styles on adopting technology in educational institutions and small businesses respectively. These organizations are different from other types of large organizations in terms of complexity in leadership and decision-making. Additionally, there is little evidence showing the effect of top management leadership styles on adopting technology in large manufacturing organisations, which can benefit a great deal from the adoption of different technologies to support different processes and functions. In most of the studies mentioned above, the researchers focussed more on the technological competence of the individual leaders. Other studies such as that by Schepers et al. (2005) only relied on a single company thus limiting the consistency of results. As a result, there exists a gap in the literature about how leadership styles influence the adoption of technological applications in manufacturing organisations which critically need technologies to optimise their operation capacity, promote efficiency, effectiveness, and competitiveness. Moreover, there was a geographical gap since the studies on leadership and technology adoption were mainly conducted in places other than Kenya. A similar study in Kenyan companies was therefore needed in order to fill this existing gap in literature.

This study filled this gap by examining influence of leadership styles on how manufacturing companies adopt and integrate technology to support operations, management, and decision making.

2.5 Conceptual framework

Conceptual framework refers to the schematic representation of the relationship between the dependent and the independent variables (Kothari, 2011). This study was premised on the hypothesis that dominant leadership styles exhibited by the top management team in manufacturing companies in Kenya influence the adoption of technology for operations, management, and decision-making in those organizations.

By focusing on transformational, transactional, and laissez-faire leadership factors, the study examined how these styles affected technological applications' operationalization in these companies. Seven leadership factors, four from transformational leadership, two from transactional leadership, and one from laissez-faire, were analysed to explain the dominant leadership styles in these organizations. The adoption of technology as influenced by the leadership style was operationalized on the basis of adopter characteristics as expounded by Rogers (1995) in his diffusion of innovations theory and furthered by (Katumbi, 2019). These characteristics are innovators, early adopters, early majority, late majority, and laggards, as shown below. The operationalisation was don on this basis as this would enable the researcher to differentiate how fast or lack thereof manufacturing companies would adopt and implement new relevant technologies on the basis of which styles of leadership the top managers in those organisations adopted.

Independent Variables **Dependent Variable**

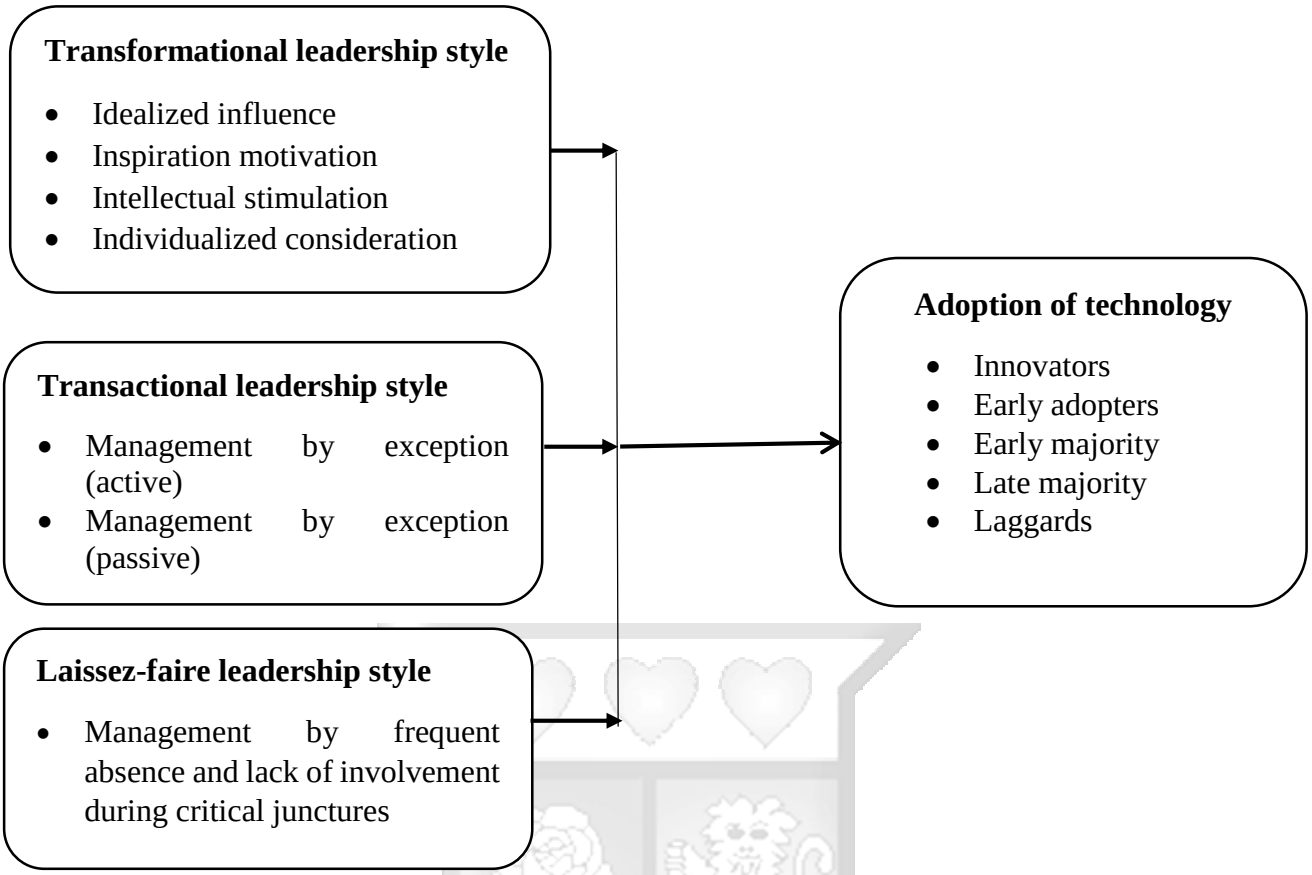

Table 2. 1 Operationalization of variables

Variable	Indicator	Analysis	Testing
Transformational leadership	• Idealized influence • Inspiration motivation • Intellectual stimulation • Individualized consideration	Descriptive statistics	
Transactional leadership	• Management by exception (active) • Management by exception(passive)	Descriptive statistics	
Laissez-faire leadership	• Management by frequent absence	Descriptive statistics	
Adoption of technology	• Innovators • Early adopters • Early majority • Late adopters • Laggards	Descriptive and inferential statistics	If p-value will be less than 0.05, then leadership style will have an influence on technology adoption.

2.6 Chapter Summary

This chapter has discussed the theoretical literature underpinning the link between leadership styles and technology adoption in organizations. Various theories of technology adoption were also reviewed. Lastly, the empirical framework of the current study has been discussed, research gaps identified and the variables of this study operationalized.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the details of the research procedures followed in carrying out this study. The chapter includes the research design, the population and sample of the study, the data collection method and instruments, and the techniques used to analyze the gathered data.

3.2 Research Design

The research design refers to the set of decisions that make up the master plan for specifying the methods of collection and analysis of the needed information (Mathoko , Mathoko, & Mathoko, 2007). This study was exploratory in nature, adopting a descriptive research design to allow for the incorporation of both quantitative and qualitative approaches. Descriptive research is also thought to portray an accurate profile of persons, events, or situations (Saunders, Lewis, & Thornhill, 2003). This method is appropriate since it can describe the population's characteristics such as opinions, attitudes, and knowledge of a certain phenomenon (Cooper & Schindler, 2008). Therefore, the main aim of the descriptive research design is to provide an accurate and valid representation of factors or variables relevant to the research questions to investigate both leadership styles and the adoption of technology. The research was exploratory in nature since it entailed exploring the linkages between leadership styles of top managers in manufacturing companies in Kenya and adoption of appropriate technologies in the management and operations of those companies.

3.3 Target Population

The population is the complete set of items about which information is required (Kothari, 2011). Therefore, a target population is a well-defined set of people, elements, events, groups of things, or households that are being studied for generalization of results (Kerlinger & Lee, 2007). The population of this study was the top management leaders of the publicly listed manufacturing companies in Kenya. The Top Management Team for the purposes of this study included senior managers and department heads who held top positions in these companies and were responsible for influencing company strategy.

Table 3. 1 Target Population

PLC in Manufacturing sub-sector	**Number of Members in Top Management**
Mumias Sugar	4
UNGA Group	15
Flame Tree	9
East African Breweries	18
CARBACID CO2	12
BOC	11
KENYA ORHARDS	9
British African Tobacco	18
Eveready Limited	4
TOTAL SAMPLE SIZE	**100**

Source: Primary Data

3.4 Sampling Design and Sample Size

A sample is a set of respondents obtained from a targeted population with the aim of establishing the features of the population (Asgodom, 2019). Sampling design is the technical plan laid down so that the picking of a subset of the population for the purposes of collecting data is done procedurally (Creswell, 2013). The sampling design for this study includes the plan for determining the sample frame, sampling technique, and sample size.

A sample frame is a list of population elements from which the sample is drawn to represent the target population (Saunders, Lewis, & Thornbill, 2016). On the other hand, a sample size is the proportion of the subjects of study used to represent the whole population (Cooper & Schindler, 2008). According to Kerlinger and Lee (2007), the sample should be large enough to detect a significant effect. It is worth noting that a sample size determination is affected by several factors, including confidence interval (margin of error), confidence level, and the proportion that will choose a given answer for a survey question (Aarons, et al., 2012). A margin error of roughly 1% to 5% is considered reasonable for sample size determination since it serves well for generalization purposes (Saunders, Lewis, & Thornbill, 2016).

Sampling technique refers to the specific process used to select study participants or respondents (Saunders, Lewis, & Thornbill, 2016). There are two types of sampling techniques: probability and non-probability.

The probability sampling technique is where all the elements are equally likely to be selected, while non-probability sampling does not have this equal likelihood. A non-probability sampling includes purposive and convenience sampling.

Given that this study focused on publicly listed manufacturing companies in Kenya which are few in number, this study adopted a total population sampling technique. This is a type of purposive sampling that involves examining the entire population with a particular set of characteristics, experiences, knowledge, skills and exposures. This approach was consistent with the study by Moore and McCabe (2005). In a different study, Sharon (2009) identified two aspects of examples when the total population sampling technique would be appropriate: (1) when the population is small and (2) when the population shares an uncommon characteristic. This was therefore the most appropriate sampling technique for this study given the small size of the population.

3.5 Data Collection Method

This study used a structured self-completing questionnaire to collect information from target respondents. The questionnaire was a modified version of the Multifactor Leadership Questionnaire (MLQ) that was initially developed and validated by (Avolio & Bass, 2004). This is the most commonly used leadership scale by researchers for studying transformational and transactional leadership. The questions in the MLQ are used to evaluate leadership style. The MLQ version 5X has mainly been used since it has proved to be more reliable and parsimonious (Lowe, Kroeck, & Sivasubramaniam, 1996). This approach is based on the theory of transformational leadership and analyses the styles by factors.

The questions in the questionnaire were devised on five-point Likert-type statements by Bass and Avolio (2004) with the following descriptions: 1– not at all, 2 – rarely, 3 – sometimes, 4– often, 5 – always. These measured the degree to which the leaders surveyed believed they had engaged in specific behaviors towards their subordinates. The original MLQ comprises of 36 statements for measuring nine leadership behaviours of leadership style. The modified version, however, was based on nine items used to measure the components of style. Five measured transformational leadership attributes, two factors measured the active transactional leadership attributes, and two factors measured the passive transactional leadership attributes. This approach was borrowed in this study to maintain consistency of the five-scale measurements and allow for standardized information to be collected, which could be expressed numerically for correlation analysis. Further modification of the questionnaire in the present study was that the introduction of laissez-faire leadership which was measured by a single factor statement. Technology adoption assessment was conducted using eleven items on a 5-point Likert. The eleven items were subdivided along two constructs: six items measuring the technology

adoption level while five items assessed the use of technology in management functions. The questionnaire was administered electronically through google forms to allowed for collection of data from respondents from geographically dispersed locations.

To facilitate this data collection, permission was sought from Strathmore Business School in an introduction letter before approaching the respondents.

3.5 Data Analysis

Data analysis refers to processing data to translate it into useful information that makes meaning (Saunders, Lewis, & Thornbill, 2016). This study used a self-completing questionnaire to collect data. The self-completing questionnaire was preferred for two reasons. First, it was less costly to administer, and secondly, the respondents would have a reasonable degree of assurance of anonymity and therefore more likely to provide more truthful responses. After two weeks, the questionnaire responses were checked for completeness, thereafter paving way for data analysis.

The final data was then transferred to Statistical Package for Social Sciences (SPSS) for analysis. Initially, an exploratory analysis was carried out using descriptive statistics such as means, standard deviation, and percentages. Descriptive statistics is useful in giving a general summary data in the form of simple quantitative measures such as percentages or means or in the form of visual summaries (Kaliyadan & Kulkarni, 2019). A Kolmogorov-Smirnov test for normality was then performed, so that the test results could inform whether to perform further analysis of the data using parametric or non-parametric methods. Parametric methods such as linear regression would normally be used if the variables follow a normal distribution, otherwise non-parametric methods would be preferred.

Inferential statistics was then used to assess the effect of transformational, transactional and laissez-faire leadership styles on technology adoption in the manufacturing companies. A correlational analysis was done to determine these effects.

3.6 Research Quality

3.6.1 Reliability

This is the extent to which a research instrument can assess a characteristic of interest consistently (Meeker & Escobar, 2014). In testing reliability, a researcher seeks to ensure as minimal variation as possible in the results from the research instrument and the study methodology (Kotter J. , 2012).

Computing Cronbach's alpha coefficients is used to assess the survey's reliability for all items in the questionnaire, and the overall assessment given (Sekaran & Bougie, 2013). The

Cronbach's Alpha coefficient usually ranges between 0 and 1, with a higher alpha coefficient value implying more reliability. Table 3.2 below summarises the interpretation of Cronbach's Alpha coefficients as advanced by Kotter (2012).

Table 3. 2 Cronbach's reliability coefficients

Coefficient range	Description
>0.9	Excellent
>0.8	Good
>0.7	Acceptable
>0.6	Questionable
>0.5	Poor
<0.5	Unacceptable

In this study, the acceptable value of 0.7 was taken as the cut–off of reliability and the results are presented in table 3.3 below.

Table 3. 3 Reliability Statistics

Variables	**Cronbach's Alpha**	**N of Items**
Transformational leadership style	0.829	11
Transactional leadership style	0.719	2
Adoption of technology	0.772	13

3.6.2 Instrument Validity

In research, validity measures the appropriateness of the tools, processes, and data used (Lawrence, 2015). Usually, content and construct validity are used in evaluating the meaningfulness of the research findings (Greene, 2012). Content validity sought to establish the degree to which items on the questionnaire represented attributes of transformational, transactional and laissez-faire leadership styles, which were being studied, and adoption and use of technology. On the other hand, construct validity sought to establish the extent to which the research instrument could be interpreted as meaningful to some characteristics. To address these two aspects of validity, the research instrument used in this study was adapted from widely used and acknowledged tools. In addition, such adaptation was further validated by seeking the research supervisor's expert opinion which was provided.

3.7 Ethical Considerations

Punch (2013) posited that empirical research presents ethical questions such as confidentiality, anonymity, and voluntary participation by respondents, which ought to be addressed by the researcher.

In this study, these ethical concerns were addressed in several ways. First, this research required permission at various levels to be carried out. This permission was sought from Strathmore Business School and NACOSTI to allow this research. Informed consent was also sought from the survey participants before they took part in filling the questionnaire. Also, the anonymity of the participants was upheld. The participants were not required to write their names on the consent forms, the questionnaires or give any personal identifying information.

Secondly, all the respondents' information was used in strict confidence and only for academic purposes furthered by this research. The respondents were given this assurance beforehand. Similarly, participation in the survey was voluntary. Although the prospective respondents were encouraged to fill the questionnaires, they were informed about their right to refuse to participate in the survey. Moreover, no monetary or other rewards were given to the participants for filling the questionnaire.

Lastly, all information quoted from various sources has been duly acknowledged as far as possible to avoid plagiarism.

CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter presents the results obtained from analysis of the primary data collected using the structured questionnaire. The chapter is organized into the following sections: the response rate, the respondents' profile, results from descriptive statistics, normality tests and results from relationship analysis using the correlation matrix.

4.2 Response Rate

This study targeted 100 Top Management Team which included senior managers and department heads who held these positions in these companies and were responsible for influencing company strategy. The researcher targeted a total of 100 participants drawn from large publicly listed manufacturing companies. Therefore, one hundred (100) questionnaires were issued. The participants who completed and returned the questionnaires were 80 which was a response rate of 80% as shown in table 4.1. The response rate was considerably good and was deemed sufficient to yield accurate and useful findings representative of the target population compared to other studies.

Table 4. 1 Response rate

Number of questionnaires issued	100
Completed questionnaires	80
Percentage Response Rate	80%

Source: Primary Data

4.3 Respondents Profile

Section A of the questionnaire sought to establish the demographic profile of the respondents. The questions were framed to collect data on gender, age, level of education, company, number of years in the company and position in the company of the respondents. These demographic elements were assessed because of their potential control effects on the study.

Table 4. 2 Demographic profile

Gender

	Frequency	Percent
Male	41	51.3
Female	39	48.8
Total	80	100.0

Age

	Frequency	Percent
Less than 35 years	18	22.5
35 -44 years	29	36.3
45 - 54 years	27	33.8
55 years & above	6	7.5
Total	80	100.0

Education level

	Frequency	Percent
Diploma	4	5.0
Bachelor's Degree	43	53.8
Masters	25	31.3
PhD	8	10.0
Total	80	100.0

Company

	Frequency	Percent
B.O.C Kenya Ltd	8	10.0
British American Tobacco Kenya LTD	14	17.5
Carbacid Ltd	9	11.3
East Africa Breweries Limited	14	17.5
Eveready East Africa Ltd	3	3.8
Flame Tree Group Ltd	9	11.3
Kenya Orchards Ltd	9	11.3
Mumias Sugar Company Limited	3	3.8

Unga Holdings Ltd	11	13.8
Total	80	100.0

Number of years in the company

	Frequency	Percent
Less than 5 years	20	25.0
6 - 10 years	33	41.3
11 - 15 years	16	20.0
More than 15 years	11	13.8
Total	80	100.0

Position in the company

	Frequency	Percent
Admin & Finance	30	37.5
Marketing	12	15.0
Research & Development	2	2.5
Sales & Customer service	30	37.5
Technical	6	7.5
Total	80	100.0

Source: Primary Data

The results in Table 4.2 revealed that majority of the respondents were male comprising of 51.8% of the total respondents. Generally, most of the respondents were in the 35-54 years age bracket and had a bachelor's degree as the highest education qualification. In addition, a bulk of the respondents had a tenure of 6-10 years in their current organizations at the time of filling the questionnaire.

4.4 Descriptive Statistics

4.4.1 Transformational leadership style

The study used a 5-point scale: **1- Not at All**, **2- Rarely**, **3- Sometimes**, **4-Often,** and **5-Always to** describes leadership style attributes. Eleven items that explain the dominant transformational leadership styles in these organizations were used in this study as shown in Table 4.3. The findings revealed that the overall mean as far as the transformational leadership style is concerned was 4.35, standard deviation of 0.71 and the coefficient of variation of 16%. This illustrated that the respondents frequently exhibited transformational leadership style

attributes. The statement that "I express confidence that goals will be met" had the highest mean (Mean = 4.65, SD = 0.607 and CV = 13%) implying that most managers always had confidence that goals of the company would be met which is a key component for transformational leadership style. However, the statement that "I treat one as an individual rather than just a member of the group" had the lowest mean, though above average (Mean = 4.00, SD = 0.884 and CV = 22%). This statement also had the highest varied statements among the sampled managers as evidenced by the highest coefficient of variation of 22%. This shows that individualized consideration was the least portrayed attribute of transformational leadership among the respondents due to the wider variation. Transformational leadership was broadly categorised into four factors: idealized influence, inspiration motivation, intellectual stimulation and individualized consideration. These four factor attributes were measured on a five-point Likert scale from 'Not at all' to 'Always to'. The respondents were required to indicate how much they agreed with the statements that were listed. Table 4.3 below summarises the results.

Table 4. 3 Descriptive Statistics: Transformational leadership style

Descriptive Statistics				
Transformational leadership	N	Mean	Std. Deviation	CV (%)
I portray the importance of having a strong sense of purpose	80	4.40	0.686	16%
I act in a way that builds my respect	80	4.65	0.677	15%
I display a sense of power and confidence	80	4.36	0.601	14%
Inspiration motivation				
I talk enthusiastically about the tasks that need to be completed.	80	4.63	0.624	13%
I express confidence that goals will be met	80	4.63	0.624	13%
I help my staff find meaning in their work.	80	4.30	0.802	19%
Intellectual stimulation				
I suggest new ways of completing work duties	80	4.09	0.766	19%
I encourage creativity among staff in solving work-related problems	80	4.55	0.761	17%
Individualized consideration				
I help my staff members to develop their strengths and competence at work	80	4.28	0.656	15%

I treat one as an individual rather than just a member of the group.	80	3.98	0.871	22%
I spare time to teach and coach my staff members.	80	4.01	0.755	19%
Valid N (listwise)	80	**4.35**	**0.71**	**16%**

4.4.2 Transactional leadership style

This leadership style focuses on maintaining the status quo and motivating people through contractual agreements. The respondents were presented with four statements to which they were asked to indicate the extent to which they agreed with the statements along a scale of 1-5. A score of **1- Not at All**, **2- Rarely**, **3- Sometimes**, **4-Often,** and **5- Always to**. The findings showed that the highest average score for transactional leadership style was 4.76 and the lowest mean score was 3.61. The overall mean score transactional leadership style was 4.19 with a standard deviation of 0.78. This implied that most respondents often agreed to the statements regarding to the transactional leadership style. The passive transactional leadership style measures also had a lower coefficient of variation of 20% as compared to the management by exception (active) attributes which had an average coefficient of variation was 35% which means management by exception (passive) was favorably ranked by the respondents. The construct passive was therefore used for inferential statistics while management by exception (active) was not considered for further analysis. The table below shows the summary statistics of the elements.

Table 4. 4 Descriptive Statistics: Transactional leadership style

Descriptive Statistics				
Transactional leadership	N	Mean	Std. Deviation	CV (%)
Management by exception (passive))				
I focus attention on irregularities, mistakes, and deviations from standards.	80	4.76	0.509	11%
I direct my attention towards failure to meet standards.	80	3.61	1.049	29%
Valid N (listwise)	80	4.19	0.78	20%
Management by exception (active)				
I provide one with assistance in exchange for his/her efforts.	80	3.21	1.052	33%
I express satisfaction when targets are met.	80	3.13	1.151	37%

Valid N (listwise)	80	3.17	1.10	35%

4.4.3 Laissez-faire leadership style

In this study, only one item was used to describe this leadership style. The respondents were asked to rate this statement using a score of 1 to 5 where a score of 1- Not at All, 2- Rarely, 3- Sometimes, 4-Often, and 5- Always. The findings show that most respondents gave an average score of 1 which means they did not at all attribute themselves as laissez-faire styled leaders. This measure also had a very high average variation which implies the responses were not consistent.

Table 4. 5 Descriptive Statistics: Laissez – faire leadership style

Laissez- faire leadership	N	Mean	Std. Deviation	CV (%)
I exhibit frequent absence and lack of involvement during critical junctures.	80	1.54	1.078	70%
Valid N (listwise)	80			

4.4.4 Adoption of technology

Adoption of technology was used as the dependent variable for this study. Thirteen statements were presented to the respondents to which they were asked to indicate the extent to which they agreed with the statements along a scale of 1-5. A score of 1 indicated strong disagreement while a score of 5 indicated strong agreement with the statements. The findings indicate that the respondents agreed that their firms adopted technology as shown by a mean score of 4.26 and standard deviation of 0.77 as seen in Table 4.6. However, the results show that respondents were neutral that their departments tried new technological applications after others have tried them as shown by a mean score of 3.03 and standard deviation of 1.113. The findings also indicate that the respondents strongly agreed that internal operations in their organization were smooth because of technology.

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Table 4. 6 Descriptive Statistics: Adoption of technology

Adoption of technology	N	Mean	Std. Deviation	CV (%)
My department is always the first to incorporate technology supporting internal operations.	80	3.79	0.964	25%
Technology is necessary for the management of teams within my department.	80	4.49	0.616	14%
My department ensures new technology succeeds after adoption.	80	4.55	0.614	13%
My department believes that resistance to new technologies is entirely irrational.	80	4.41	0.867	20%
My department tries new technological applications after others have tried them.	80	3.03	1.113	37%
My department prefers existing tried and tested technological applications.	80	3.79	1.052	28%
I champion the adoption of new technological applications in my department.	80	4.60	0.587	13%
Decision-making is relatively faster in my organization because of technology.	80	4.43	0.742	17%
I use technology to automate management, i.e., using data collected and analytics to make decisions.	80	4.35	0.713	16%
I use technology to augment leadership (I put human needs at the center of my approach and regard technology as an enabler rather than a replacement for human achievement).	80	4.34	0.728	17%
I use technology to manage my tasks.	80	4.44	0.613	14%
I use technology to assign and monitor tasks within my department	80	4.23	0.842	20%
Internal operations in my organization are smooth because of technology.	80	4.65	0.530	11%
Valid N (listwise)	**80**	**4.24**	**0.77**	**19%**

4.5 Normality tests

To perform inferential statistics, it is important to understand the distribution of all elements in the research questionnaire to determine whether to perform parametric or non-parametric tests. If the items are normally distributed, parametric approaches are used for further analysis. Otherwise, non-parametric methods are chosen.

A Kolmogorov-Smirnov test performed on the primary data gathered indicated that all the constructs did not follow a normal distribution, $since\ the\ p\ value\ < 0.05$ as shown in Table 4.7. Since all our variables of interest did not follow a normal distribution, a non-parametric method of analysis was therefore used for inferential statistics.

Table 4. 7 One-Sample Kolmogorov-Smirnov Test

	N	Mean	Std. Deviation	Skewness	Kurtosis	KS	Asymp. Sig. (2-tailed)
Adoption of technology	80	4.24	0.77	-0.312	0.592	0.119	.004[c]
Transformational	80	4.35	0.71	-1.101	2.955	0.173	.000[c]
Transactional	80	4.19	0.78	-0.132	-0.102	0.384	.000[c]
Laissez-faire	80	1.54	1.08	2.119	3.534	0.131	.001[c]
Valid N (listwise)	80						

4.6 Correlation analysis

The purpose of this study was to determine the relationship between leadership styles and technology adoption by manufacturing companies in Kenya. A correlation analysis of the various components identified as measuring the variables effectively was carried out using the Spearman rank correlation coefficient (r). Correlation analysis is a measure of association or relationship between two variables. A correlation of 1 implies a perfect positive linear relationship between the variables in question which means the variables move in the same direction such that a change in one variable results in the same degree change in the other variable in the same direction. On the other hand, a correlation of -1 indicates a perfect negative linear relationship meaning that the two variables move in opposite directions to the same degree. The degree of the association between the variable is determined by the value of the correlation coefficient. The higher the absolute value of this coefficient the higher the degree of association and vice versa. A correlation coefficient of zero however implies that there is no

association between the variable, and thus movements in one variable do not impact movements in the other variable.

4.6.1 Relationship between transformational leadership style and technology adoption in manufacturing companies

Spearman Rank correlation analysis was used to determine the relationship between transformational leadership style and technology adoption in manufacturing companies.

The null hypothesis was that **t**here is no relationship between transformational leadership style and technology adoption in manufacturing companies. The findings of the correlation analysis are presented in Table 4.8 below.

Table 4. 8 Correlation between transformational leadership and adoption of technology

Spearman's rho Correlations			
		Adoption of technology	Transformational leadership
Adoption of technology	Correlation Coefficient	1.000	.361**
	Sig. (2-tailed)		0.001
	N	80	80
Transformational leadership	Correlation Coefficient	.361**	1.000
	Sig. (2-tailed)	0.001	
	N	80	80
**. Correlation is significant at the 0.01 level (2-tailed).			

It can be seen in Table 4.8 above that there was a weak positive correlation (*r=0.361*) between between transformational leadership style and technology adoption in manufacturing companies. This meant the more the top management team in manufacturing companies exhibited transformational leadership attributes, the more likely they were to adopt different technologies to support their functions. The null hypothesis that there is no relationship between transformational leadership attributes of top management and technology adoption to support their functions in manufacturing companies was thus rejected at 99% confidence level where $R(80) = 0.361, p\ value < 0.01$ at 1% level of significance. This means the

correlation between transformational leadership style and technology adoption in manufacturing companies was statistically significant.

4.6.2 Relationship between transactional leadership style and technology adoption in manufacturing companies

The second objective of this study was to understand the relationship between transactional leadership style and technology adoption in manufacturing companies. The null hypothesis was that there is no relationship between transactional leadership style and technology adoption among top management in manufacturing companies. The findings presented in Table 4.9 below show that there was a weak positive correlation (r=0.246) between between transactional leadership style (management by exception- passive) and technology adoption in the manufacturing companies. This implies that as the top management leaders tended to portray management by exception –passive construct of transactional leadership style, there was an increasing tendency that their actions would favour adoption of technology to support their functions. The null hypothesis was rejected at 95% confidence level where $R(80) = 0.246, p\ value < 0.05$ at 5% level of significance. This means that the positive correlation between transactional leadership style and technology adoption among the top management in manufacturing companies was statistically significant.

Table 4. 9 Correlation between transactional leadership and adoption of technology

Spearman's rho Correlations			
		Adoption of technology	Transactional leadership (management by exception- passive)
Adoption of technology	Correlation Coefficient	1.000	.246*
	Sig. (2-tailed)		0.028
	N	80	80
Transactional leadership (management by exception- passive)	Correlation Coefficient	.246*	1.000
	Sig. (2-tailed)	0.028	
	N	80	80
* Correlation is significant at the 0.05 level (2-tailed).			

4.6.3 Relationship between laissez-faire leadership style and technology adoption in manufacturing companies

Another objective of this study was to determine the relationship between laissez-faire leadership style and technology adoption among top management in manufacturing companies. The null hypothesis was that there was no relationship between laissez-faire leadership style and technology adoption by top managers in manufacturing companies.

As shown in Table 4.10 below, the results indicate the presence of a very weak positive correlation (r=0.10) between between laissez-faire leadership style and technology adoption in manufacturing companies. This implies that when the top managers in manufacturing companies portrayed laissez-faire leadership style attributes, there was increased tendency to adopt various technologies to support their functions in those companies. In this case however, the null hypothesis, stated as: there is no relationship between laissez-faire leadership style and technology adoption among top management in manufacturing companies was not rejected at 95% confidence level where $R(80) = 0.100, p\ value > 0.05$.

It was therefore concluded that the correlation between laissez-faire leadership style and technology adoption in manufacturing companies was not statistically significant on the basis of the collected data.

Table 4. 10 Correlation between laissez-faire leadership and adoption of technology

Spearman's rho Correlations			
		Adoption of technology	Laissez-faire leadership style
Adoption of technology	Correlation Coefficient	1.000	0.100
	Sig. (2-tailed)		0.379
	N	80	80
Laissez-faire leadership style	Correlation Coefficient	0.100	1.000
	Sig. (2-tailed)	0.379	
	N	80	80
* Correlation is significant at the 0.05 level (2-tailed).			

CHAPTER 5: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter summarises the discussion of the findings, conclusions and recommendations of this study on areas of improvement or further research about the topic. These are done based on the research questions that motivated this study and the findings from the data analysis.

5.2 Summary of the study

The purpose of this study was to explore the presence of three leadership styles; transformational, transactional and laissez-faire styles among top management team members of manufacturing companies in Kenya and the influence of these styles had on the adoption of technology by those leaders for their direct use and for the organisations as a whole. The direct use of different technologies by the leaders was important because leaders who are poor at personally adopting technologies are considered less effective and poor role models (Van Wart, Roman, Wang, & Liu, 2017).

The study sought to answer the following questions: What is the relationship between transformational leadership style and technology adoption? What is the relationship between transactional leadership style and technology adoption? What is the relationship between laissez-faire leadership style and technology adoption? What is the relationship between the dominant leadership style in manufacturing companies and technology adoption among top level management team? The fourth questions implies that the study would determine whether there is a leadership style that dominates the others among top management team in manufacturing companies.

The study adopted a descriptive research design which allowed both qualitative and quantitative analyses. The total population of the study was the top management team of publicly listed manufacturing companies in Kenya. Given that there are only a few publicly listed manufacturing companies which qualified for the scope of this study, a total population sampling approach was used, targeting 100 top management team selected from the companies to participate in the study. A structured self-completing questionnaire was used to collect responses. Due to the COVID 19 induced logistical obstacles, the questionnaire was transferred to a google survey and administered online to aid timely data collection.

The responses were analysed for both descriptive and inferential statistics. Descriptive statistics included frequency distribution, mean and standard deviation of the data while inferential

statistics entailed correlation tests between leadership styles and adoption of technology by top management teams in manufacturing companies.

5.3 Discussion

This study sought to address the existing gaps in empirical literature on the influence of leadership styles on the adoption of technology among the top management in manufacturing companies to support their operations. The importance of technology in supporting both management functions and business processes cannot be gainsaid. As a result, this study presented notable findings that are discussed below in line with the research objectives. Firstly, the study established that attributes of the three leadership styles in focus were present among the top managers of manufacturing companies to varying degrees. From the study findings, different aspects of leadership style were shown to influence the adoption of technology by the top management in manufacturing companies.

5.3.1 Transformational leadership and technology adoption

One of the research objectives sought to establish whether the top management leaders in manufacturing companies in Kenya exhibited transformational leadership style attributes, and how these influenced the adoption of technology. The results of the data analysis showed that transformational leadership attributes were indeed portrayed by the top managers in these companies. Overall, the survey respondents ranked transformational leadership highly, with an overall mean of 4.35 with a standard deviation of 0.71 which indicated they mostly agreed to exhibit those attributes. Further analysis also established a positive correlation ($r=0.036$) between transformational leadership and technology adoption which was statistically significant. This provided evidence that transformational leadership attributes among top management in manufacturing companies in Kenya positively influenced the adoption and use of technology in those companies. The null hypothesis that transformational leadership attributes of the top management do not influence adoption of technology in their organizations was rejected.

Previous research had indicated that transformational leadership attributes tend to promote the implementation of technological innovations in organizations. For instance, transformational leadership is believed to foster technology acceptance as pointed out in a study of Enterprise Resource Planning (ERP) system efficiency (Elkhani, Sheida, & Mohammad, 2014). When top managers in an organization proactively embrace use of technological applications to support their work, the same may motivate their subordinates to also embrace innovations to support them in performing their tasks. Employees find it more useful to use a technology if a leader directly or implicitly states the benefits of using such technologies (Schepers, Wetzels, & de Ruyter, 2005). This can be done by the leaders setting the strategic direction of the organization

towards technology-driven processes which lead to organizations adopting emerging technologies to streamline their business processes, enhance speed and promote efficiency and quality of output.

5.3.2 Transactional leadership and adoption of technology

Past empirical literature has mainly shown that transactional leadership is mostly geared towards maintaining the status quo and keeping organizations stable by enforcing contractual agreements with employees through rewards for good performance and punishment for unsatisfactory output by staff. However, literature linking this style of leadership to adoption of technology to support business operations remains limited.

This study attempted to establish whether transactional leadership influences the adoption of technologies among top leaders using data from manufacturing companies in Kenya. The results established that transactional leadership attributes were exhibited by the survey respondents as indicated by a high average score of 4.19. The results further showed that a weak positive correlation (r=0.246) exists between transactional leadership style (passive) and management adoption of technology. This correlation was statistically significant at 95% confidence level, hence the null hypothesis that transactional leadership style in top management does not influence adoption of technological applications in organizations was rejected.

5.3.3 Laissez-faire leadership and adoption of technology

Theoretical literature has defined laissez-faire leadership as avoidant. This means that the leader portraying this leadership style does not directly participate in how their subordinates perform their tasks. From this definition, the researcher in this study posited that a laissez-faire leader may not take a keen interest in championing the embracing of technologies by their subordinates.

Whereas the data analysis established a positive correlation between laissez-faire leadership and technology adoption (r=0.379), this result was not statistically significant. Thus, the study did not show any evidence that laissez-faire leadership style influences adoption of technological applications by top managers in manufacturing organizations. Given the definition of this style as avoidant, this outcome would be expected. However, this is contradicted by the fact that leaders in top management are responsible for driving organisational decisions and strategy such as adoption of technology, and therefore it may make little sense to imagine that top management leaders who show laissez-faire leadership attributes would fail to participate is technology adoption initiatives. To the knowledge of this researcher, there were no prior studies on the relationship between this style of leadership and

technology adoption making it difficult for the researcher to compare these findings with previous literature. This therefore leaves room for further research which could improve on these findings.

5.3.4 Technology adoption and use

From the results summarised in Table 4.6, the respondents generally agreed that use of technology has made internal operations in their organizations smooth. This statement had the overall highest mean score (4.65) lowest standard deviation (0.53) among the factors that assessed the adoption and usage of the various technological applications. This means that the respondents ranked this statement highly and did not give widely varied responses. This was in line with expectations as set out by previous studies which have established a consensus that the appropriate technological applications are beneficial to organizations in many ways, one of which is smoothening of internal operations. It is also evident from the findings that the respondents used technological applications to manage their own tasks, hence augmenting their management functions.

Another important implicit inference from the results concerns the rate at which leaders integrated new technologies into their work functions. The study findings generally suggested that a majority of the respondents fall into the category of early majority on the spectrum of technology adoption curve and adopter characteristics as furthered by Rogers (1995). In most responses, the respondents highly ranked themselves as champions of adoption of new technologies in their departments. However, being the first to incorporate new technologies was not highly ranked, as evidenced by a relatively lower overall mean score (3.79). This indicates that the respondents were neither technology innovators nor early adopters of new technologies. The researcher reckons that this could be the case due to the huge expenditures that may sometimes be associated with initial acquisition and implementation of new technologies in organizations especially in manufacturing companies that may need complex systems. Leaders would seek to ensure that the resources at their disposal are appropriately expended even as they seek to invest in new technologies and thus only invest resources after assessing the viability of the technologies to the needs of the organization. It is important that leaders know when and how to adopt new technologies that are appropriate to the organisations to avoid potential failures that could lead to heavy cost implications to the organisations.

The data also showed little indication of late majority and laggards among the respondents in technology adoption, as evidenced by relatively low averages and high standard deviations among the responses on statement that measured the tendencies of being late majority and laggards. In particular, the statement “My department tries new technological applications after others have tried them” had the lowest average (3.03) and the highest coefficient of variation

(CV =37%), closely followed by the statement "My department prefers existing tried and tested technological applications (mean = 3.79, CV =28%)."

As noted earlier in this study, the global business landscape has become increasingly more competitive and top management leaders in manufacturing companies would want to take initiatives that could give them a competitive edge and sustainability. Key among such initiatives is the incorporation of technologies in different areas of business operations to boost efficiency and quality of output. It is therefore valid that leaders do not want to lag behind when it comes to adoption of beneficial technologies in their organizations.

5.4 Conclusion

Whereas the results of the data analysis of this study indicated a statistically significant positive association between both transformational and transactional leadership styles and adoption of technologies by top managers in manufacturing organizations in Kenya, it is clear that the correlation was weaker for transactional leadership (r=0.246) as compared to transformational leadership (r=0.361). Laissez-faire leadership style on the other hand did not show a statistically significant relationship with adoption of technology among those leaders. These results generally support the findings by previous scholars who noted that transformational leadership attributes are likely to encourage innovation within an organization (Kanter, 1983). A contribution of this study to the aforementioned finding of prior studies is that the present study considered the direct involvement of leaders in using technological innovations to support their work in the context of manufacturing companies which is considered as the leaders being role models in new technology adoption initiatives in their organisations. Transformational leadership attributes, for example, create an appropriate environment for innovative teams, hence influencing the overall organizational innovativeness (Tushman & Nadler, 1986).

This researcher concludes that transformational leadership attributes tend to dominate the influence of how senior managers in manufacturing companies in Kenya embrace use of technologies due to a higher overall means score compared to the other leadership styles assessed.

The study findings also agreed with the persuasion that laissez-faire leadership is a hands-off approach as recorded in past literature. However, correlation does not mean causality. Therefore, the absence of statistically significant correlation between laissez-faire leadership approach and technology adoption cannot be necessarily taken as evidence that leaders who embrace technologies in their organizations lack laissez-faire attributes. Similarly, the presence of a positive correlation between transformational and transactional leadership (management

by exception-passive) styles does not provide evidence that it is the leadership styles that cause the top-level managers to embrace technologies in their functions because correlation does not mean causality. Nonetheless, the findings addressed the research questions explored in this study.

5.5 Recommendations

This study findings established that transformational leadership attributes tend to dominate in senior management of manufacturing organizations, and these were positively correlated to adoption of technologies. These findings also confirmed that technology adoption tends to bolster the ease and efficiency of internal operations in these organizations.

The researcher recommends top leaders in manufacturing companies to be at the forefront of championing integration of new technologies that are beneficial to their operations. Modelling expected behaviour will influence the culture of such organizations towards technological innovativeness, which in the end pose beneficial outcomes to the organizations.

Moreover, leaders should promote investment in technologies early enough so that their organization can reap the benefits associated. In doing so, however, the leaders should strive to incorporate technologies which are appropriate to the needs of the organizations so that the resources of the organization are properly expended.

5.6 Limitations and suggestions for further study

In spite of its contribution to existing literature, this study was not without limitations. One such limitation was that the study adopted a self-reported questionnaire to assess leadership behavior. The leaders ranked themselves to the extent that they believed they exhibited certain leadership attributes. While this helped foster anonymity of the responses and therefore addressed potential ethical concerns, it is likely to have caused bias in the data collected as the leaders would most likely rate themselves highly in most instances. Future studies should assess leadership styles by using questionnaires that allow employees to report the leadership attributes of their seniors in order to get a more objective assessment of the perception of top leadership.

Secondly, this was an exploratory study applied to a few large manufacturing organizations in the public sector. Due to differences in governance matrix and associated leadership complexities, the findings may not be easily generalizable and transferrable to other organizations of different sizes, at different phases of growth or across different industries. Therefore, future studies should aim to use data from multiple organizations across different industry mixes for generalizability of findings.

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VT OMNES
VNVM SINT

Appendix A: Letter of Introduction

Dear Respondent,

I am the undersigned, currently undertaking a Master's degree in Business Administration at Strathmore Business School. I am conducting a study that involves collecting data for writing and compiling the final thesis as a partial requirement for the degree's award. The research entails a study on the Relationship between Leadership Styles and the Adoption of Technology in Manufacturing Organizations.

The information collected will be used solely for academic purposes and will be handled with the utmost confidentiality.

Please direct any inquiries to Blanche Kangeri through the email **mbithe82@gmail.com**.

Appendix B: Informed Consent Form

Study title: Relationship between Leadership Styles and the Adoption of Technology in Manufacturing Companies in Kenya.

Researcher's Institution Contact

Blanche Kangeri, Strathmore University +254 736392514

Introduction

My name is Blanche Kangeri an MBA student at Strathmore University. I am the principal researcher in the study on Examining the Relationship between Leadership Styles and the Adoption of Technology in an Organization

You are being asked to participate in this study because you are eligible. The survey will last approximately 20 minutes only. You can ask any questions you have at any time.

This consent form gives you information about the purpose, procedure, risks, benefits, confidentiality/privacy, and expected process during the study. If you agree to take part, please sign your name at the bottom of this form.

Purpose of the study

The study aims to Examine the Relationship between Leadership Styles and the Adoption of Technology in an Organization.

Procedure of Study

If you decide to join the study, you will be asked questions regarding dominant leadership styles, the use of technology, and the relationship between the dominant leadership styles and the adoption of technology.

Voluntariness

Study participation will be voluntary. Partial participation is allowed; if you wish not to respond to all/any questions kindly inform the researcher.

Risks of study participation

Although we shall write your details on paper, every effort will be made to protect your privacy and confidentiality while participating in the study. The information that you will provide cannot be identified as belonging to you. The survey will be conducted online and you will not be required to provide any personally identifying information.

Information that will need to be assessed by other persons will be coded to ensure confidentiality.

Benefits of participating in the study

The information you provide will help advise organizations on the relationship between leadership styles and technology adoption in organizations.

Study Costs

There are no financial costs to you for participating in this study.

Research Related Injury

It is unlikely that any form of injury could happen to you due to your participation in the study. It is crucial that you inform the researcher if you feel uncomfortable taking part in the study.

Confidentiality

Every effort will be made to keep the information you provide confidential. The information in the questionnaire cannot be identified as belonging to you. You will not be personally identified in any publication about this study.

Contacts and questions

This research will be approved and reviewed by the Strathmore Ethical Review Committee.

This committee will review this study to help protect participants. If you have any questions about your right as a research participant, you may contact the researcher Blanche Kangeri on her email address: mbithe82@gmail.com and the Strathmore Ethical Review Committee P. O. Box 59857, 00200, Nairobi; email ethicsreview@strathmore.edu, Tel: +254 703 034 375.

Your statement of consent and signature:

I have read and understood the above information. I consent voluntarily to participate in this study.

....

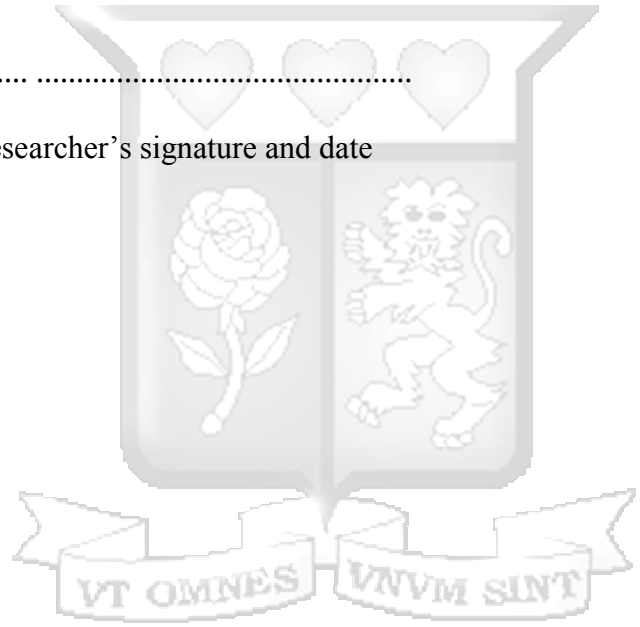
Participant's initials Signature and Date

....

Interviewer's name Interviewers' signature and date

....

Researcher's name Researcher's signature and date



Appendix C: Research Questionnaire

This questionnaire aims to collect information regarding the influence of the top management team's transformational and transactional leadership attributes on the adoption of technology in manufacturing companies within the Nairobi Metropolitan area.

Confidentiality clause

The responses you provided in this questionnaire will be used in strict confidence and solely for academic purposes advanced by this research.

SECTION A:

1. Gender: Male [ ] Female [ ]
2. What is your age?
   Under 20 years [ ] 21-30 years [ ] 31-40 years [ ] 41-50 years [ ]
   51 years and above [ ]
3. For how long have you been with the company?
   Less than 1 year [ ] Between 1 and 3 years [ ] Over 3 years [ ]
4. Level of education
   Certificate/Diploma [ ] Degree [ ] Masters [ ] PhD [ ]
5. Position in the company_____
6. Number of years in the position _____

SECTION B:

This section describes leadership style attributes using a 5-point scale: **0- Not at All**, **1- Rarely**, **2- Sometimes**, **3-Often,** and **4- Always**. Please tick in the box that best represents your opinion of the following statements.

NO		**0**	**1**	**2**	**3**	**4**
		Not at all	**Rarely**	**Sometimes**	**Often**	**Always**
i)	I portray the importance of having a strong sense of purpose.					
ii)	I act in a way that builds my respect.					
iii)	I display a sense of power and confidence.					
iv)	I talk enthusiastically about the tasks that need to be accomplished.					
v)	I express confidence that goals will be met.					
vi)	I help my staff find meaning in their work.					
vii)	I suggest new ways of completing work duties.					
viii)	I encourage creativity among staff in solving work-related problems.					
ix)	I help my staff members to develop their strengths and competence at work.					
x)	I treat one as an individual rather than just a member of the group.					
xi)	I spare time to teach and coach my staff members.					

SECTION C:

This section describes leadership style attributes using a 5-point scale: **0- Not at All**, **1- Rarely**, **2- Sometimes**, **3-Often**, and **4- Always**. Please tick in the box that best represents your opinion of the following statements.

NO		0	1	2	3	4
		Not at all	Rarely	Sometimes	Often	Always
i)	I provide one with assistance in exchange for his/her efforts.					
ii)	I express satisfaction when targets are met.					
iii)	I focus attention on irregularities, mistakes, and deviations from standards.					
iv)	I direct my attention towards failure to meet standards.					

SECTION D:

This section describes leadership style attributes using a 5-point scale: **0- Not at All**, **1- Rarely**, **2- Sometimes**, **3-Often**, and **4- Always**. Please tick in the box that best represents your opinion of the following statements.

NO		0	1	2	3	4
		Not at all	Rarely	Sometimes	Often	Always
i)	I exhibit frequent absence and lack of involvement during critical junctures.					

SECTION E:

This section provides the adoption of technology rating by your department using a 5-point scale: **1- Strongly Disagree**, **2- Disagree**, **3- Neutral**, **4-Agree**, and **5- Strongly Agree**. Please tick in the box that best represents your opinion of the following statements.

	1	**2**	**3**	**4**	**5**
	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
My department is always the first to incorporate technology supporting internal operations.					
Technology is necessary for the Management of Teams.					
My department ensures new technology succeeds after adoption.					
My department believes that resistance to new technologies is entirely irrational.					
My department tries new technological applications after others have tried them.					
My department prefers existing tried and tested technological applications.					

SECTION E:

This section provides the adoption of technology rating by your organization using a 5-point scale: **1- Strongly Disagree**, **2- Disagree**, **3- Neutral**, **4-Agree**, and **5- Strongly Agree**. Please tick in the box that best represents your opinion of the following statements.

	1	**2**	**3**	**4**	**5**
	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
I champion the adoption of new technological applications in my department.					
Decision-making is relatively faster in my organization because of technology.					
I use technology to automate management, i.e., using data collected and analytics to make decisions.					
I use technology to augment leadership (I put human needs at the center of my approach and regard technology as an enabler rather than a replacement for human achievement)					
Internal operations in my organization are smooth because of technology.					

Appendix D: Proposed Work Plan

FACULTY: SCHOOL OF BUSINESS STUDIES

Title of Dissertation: Examining the Relationship between Leadership Styles and the Adoption of Technology in Manufacturing Organizations

WORK PLAN

Progress Stage 1	Research Problem clarification, Research objectives, Purpose, and Significance	November-December 2020
Progress Stage 2	Literature Review	January-February 2021
Progress Stage 3	Proposed Research Methodology	January-February 2021
Progress Stage 4	Proposal Presentation	March 2021
Progress Stage 4	Data Collection	March-April 2021
Progress Stage 5	Data Analysis and Interpretation	April 2021
Progress Stage 6	Dissertation Report writing – first draft	May 2021
Progress Stage 7	A final draft of the research report	May 2021
Progress Stage 8	Submission of dissertation for examination	June 2021
Progress Stage 9	Oral defense of the dissertation	June
Progress Stage 10	Correction of dissertation	July

Appendix E: Proposed Budget

RESEARCH ASSISTANT	15,000
PRINTING OF QUESTIONNAIRES	600
PRINTING OF REPORT	1500
PHOTOCOPYING	300
BINDING	500
ANALYSTS/SOFTWARE	35,000
MISCELLANEOUS	5000
TOTAL	**57,900**

Appendix F: Ethical Approval – 1077

1077 Ms Kangeri 1.pdf

Appendix G: Research_Permit_NACOSTI-P-21-11360

Research_Permit_N
ACOSTI-P-21-11360.