

**SERVANT LEADERSHIP, SOCIAL INNOVATION, MARKET ENTRY BARRIERS  
AND SUSTAINABILITY OF PHARMACEUTICAL DISTRIBUTORS TARGETING  
INFORMAL SETTLEMENT AREAS IN NAIROBI CITY COUNTY, KENYA**

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**Declaration**

I declare that this dissertation is my original work and has not been presented to any other University or Institution for academic credit.

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**Dedication**

To the Almighty God; to my late parents; Daniel Gichunji Wambiri and Monica Wagoci Gichunji who have gone to be with the Lord during the period of undertaking my doctoral studies, to my parents in love; Daniel Mukuria Kariuki and Hannah Wanjiru Mukuria, and to my family for their prayers and their encouragement which made me not to give up.

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## Abstract

The pharmaceutical industry faces market access challenges and its sustainability has been least studied. This study investigated the effect of four components of servant leadership on sustainability of pharmaceutical distributors serving informal settlements in Nairobi City County, Kenya. The study also tested the mediated and moderating effects of social innovation and market entry barriers respectively on this relationship. The first four objectives focused on the effect of each of the four components of servant leadership, while objective five and six focused on the mediating and moderating effects respectively. Four theories anchored the study; namely, the Servant Leadership Theory by Robert Greenleaf, Leader-Member Exchange Theory, the Three-Cycle Model and the Triple-Bottom Line Model. The study adopted a positivist research paradigm which was deployed in the field through a descriptive cross-sectional survey research design. The population of the study was drawn from all pharmaceutical distributors in Nairobi serving informal settlement areas in Nairobi County and the respondents were managers working in those pharmaceutical distributors. 30 pharmaceutical distributors were targeted and a sample of 210 respondents was purposively obtained and provided primary data through a five-point Likert-Scale structured questionnaire. The IBM SPSS AMOS software version 21 were used for analysis of both descriptive and inferential statistics. The research obtained a 80% response rate from respondents who had relevant work experience in the industry and had the minimum educational qualifications to work in the industry. The exploratory factor analysis extracted ten components for the servant leadership construct, two for social innovation and four for market entry barriers. For each of the extracted components, the reliability score satisfied the threshold of  $\alpha=0.7$  and the extent of adoption or practice reported at a level of high extent. The three components of sustainability were each attained to a level of high extent. The Confirmatory Factor Analysis (CFA) and path analysis indicated that the constructed paths fitted the data well and that Structural Equation Model (SEM) was suitable for testing the research hypotheses. Empathy and ethical servant leadership have a significant negative statistical effect on sustainability, while even though persuasive mapping and altruistic servant leadership have positive effect on sustainability, the effect is not statistically significant. Social innovation and market entry barriers significantly mediate and moderate respectively the relationship between servant leadership and sustainability. The study concluded that the manner in which servant leadership is deployed determines the extent to which it serves its catalytic role of driving the leadership process in bringing about desired outcomes and that it needs to be configured to serve the leadership process to direct followers to undertake social innovation for the purpose of addressing identified challenges resulting from market entry barriers that present entrepreneurial opportunities to which the core nature of servant leadership of serving others can be directed for exploiting so as to benefit organizations positively. The study raises implications on the need to compliment the Servant Leadership Model with other theoretical frameworks in its application. The study calls on scholars to support in enhancing understanding the nature and operation of servant leadership as well as the industry leaders to strengthen the capacity of staff through awareness programs on the nature and process of leadership. Even though the findings offer useful insights on the manner in which servant leadership can be applied to bring about positive organizational outcomes in an emerging economy context, the study calls for future research to extend the scholarship in the pharmaceutical industry by integrating other theoretical frameworks, emerging economy institutional contexts and adoption of mixed methods designs that permit use of both qualitative and quantitative data in a single study.

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## Abbreviations and Acronyms

|                |                                                            |
|----------------|------------------------------------------------------------|
| <b>CME</b>     | Continuing Medical Education                               |
| <b>CVI</b>     | Content Validity Index                                     |
| <b>EFA</b>     | Exploratory Factor Analysis                                |
| <b>GMP</b>     | Good Manufacturing Practices                               |
| <b>ICU</b>     | Intensive Care Units                                       |
| <b>KMO</b>     | Kaiser-Meyer-Olkin                                         |
| <b>KEMSA</b>   | Kenya Medical Supplies Authority                           |
| <b>KOL</b>     | Key Opinion Leaders                                        |
| <b>MDGs</b>    | Millennium Development Goals                               |
| <b>MEDS</b>    | Mission for Essential Drugs and Supplies                   |
| <b>MMR</b>     | Moderated Multiple Regression                              |
| <b>NACOSTI</b> | National Commission of Science, Technology, and Innovation |
| <b>NHDS</b>    | National Health Data System                                |
| <b>NGOs</b>    | Non-Governmental Organizations                             |
| <b>PCRs</b>    | Pharmaceutical Company Representatives                     |
| <b>PPB</b>     | Pharmacy And Poisons Board                                 |
| <b>SEM</b>     | Structural Equation Modelling                              |
| <b>SMEs</b>    | Small And Medium Size Enterprises                          |
| <b>SDGs</b>    | Sustainable Development Goals                              |
| <b>TBL</b>     | Triple Bottom Line                                         |

### Operational Definition of Terms

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Altruistic</b>           | Refers to the intentional and voluntary activities that are undertaken                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Servant</b>              | by the servant leaders with a view of enhancing the welfare of other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Leadership</b>           | persons without any anticipation of reciprocal payments (Huang <i>et al.</i> , 2018).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Empathic</b>             | This is the capacity of the servant leader to understand and share                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Servant</b>              | another person's emotional condition in a given context. These                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Leadership</b>           | leaders can empathize with their customers by understanding their concerns, needs, and challenges, which allows them to present solutions that suit their specific context (Şakir <i>et al.</i> , 2021).                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Ethical Servant</b>      | The capacity of the servant leader to do what is morally right in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Leadership</b>           | respect to diverse stakeholders by exercising fairness, honesty, and transparency (Liden <i>et al.</i> , 2008; Ullah <i>et al.</i> , 2021).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Informal settlements</b> | These are residential areas mostly in the outskirts of Nairobi City constituting about 70% of the population of Nairobi most of whom are categorised as low-income earners with income levels below the recognized poverty line. They are characterised by poor housing, a lack of basic infrastructure and facilities, overcrowding and insecure tenancy, and the absence of essential services (Simiyu <i>et al.</i> , 2019; Bawole <i>et al.</i> , 2015). In this study, the areas included were Kibera, Mathare, Korogocho, Kariobangi, Huruma, Dandora, Kawangware and Mukuru Kwa Njenga (Cordes <i>et al.</i> , 2021 |

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Market Entry Barriers</b> | Refers to the set of hindrances that the pharmaceutical distributors face in accessing and serving consumers in the informal settlement areas. The hindrances arise from obstacles that make it challenging for the pharmaceutical firms to enter and distribute pharmaceutical products in these market segments. In this study, two types of barriers were measured, namely artificial and structural barriers (Kotsiosis, 2014; Couto & Barbosa, 2020). |
| <b>Persuasion Mapping</b>    | The servant leader's capacity to examine an existing problem, map out potential solutions to the problem, and provide the followers with a direction on how to solve those challenges (Mansyah & Rojuaniah, 2021; Rashid <i>et al.</i> , 2019).                                                                                                                                                                                                            |
| <b>Servant Leadership</b>    | Servant leadership is evident when a leader demonstrates attribute of putting others first and manifests several characteristics, including altruism, empathy, ethics, listening, awareness, healing, conceptualization, persuasion, foresight, building community, stewardship, and commitment to people's growth (Spears, 2010).                                                                                                                         |
| <b>Social Innovation</b>     | This is the utilization of innovative ways to address social needs practically, improve social relations, and empower individuals and the community (Bulut, 2012; Khan <i>et al.</i> , 2020).                                                                                                                                                                                                                                                              |
| <b>Sustainability</b>        | Sustainability is an organisation's ability to last in time by evaluating its financial performance and the social and environmental assets that comprise its capital, which is based on the triple bottom line (TBL) model (Purvis <i>et al.</i> , 2018; Rout <i>et al.</i> , 2021).                                                                                                                                                                      |

## **Chapter One: Introduction**

### **Introduction**

This chapter begins with the background to the study and the problem statement, which is followed by the purpose of the study, research objectives, scope of the study, justifications, limitations as well as the delimitations of the dissertation. This chapter ends with a summary of the facets discussed in the chapter and a description of aspects presented in the consequent chapters.

### **Background to the Study**

The pharmaceutical sector is positioned in a unique way to offer society value since its invention and innovations act as foundations for prosperity and universal health. Globally, a rise in the need for pharmaceutical products has been noted, as well as a growth in the global population and an increase in new conditions and diseases (Zarei *et al.*, 2020). This causes a rise in expectations and puts emphasis on the need for strong leadership, particularly among pharmaceutical distributors. In modern times, leadership is essential to the survival of a business, and all this comes from the competition in the global market. To achieve sustainability, owners and managers should develop their leadership approach, which should be sustainable (Lee *et al.*, 2019; Askaripoor, 2019). In recent times, servant leadership has gained much attraction compared to other leadership styles (Alice & Eliana, 2021). Servant leadership represents a relationship-based style of leadership that focused on others and seeks to benefit multiple stakeholders (Kaya & Karatepe, 2020). Thus, it is critical to consider the use of servant leadership to achieve sustainability in the pharmaceutical industry.

Globally, the impact of servant leadership on sustainability of the pharmaceutical sector cannot be overlooked. In their study in Iran, Zarei *et al.* (2020) examined how decision-making influenced irregular supply of pharmaceutical products, especially the drugs

for treatment of non-communicable diseases. Further, Bragger *et al.* (2020) contends that some empirical evidence links servant leadership to organizational sustainability and innovation. Organisations have also been drawn to the use of servant leadership due to its positive implications for teams, employees, and organizations (Askaripoor, 2019). For example, Yidong and Xinxin (2013) assert that since servant leaders focus on the needs of others, they are intent on bettering the lives of others by enhancing the effectiveness of their organisations and encouraging the employees to be innovative. Similarly, Kaya and Karatepe (2020) observe that the servant leadership style that changes focus from the leader to the follower is suitable for ensuring sustainability. These servant leaders nurture relationships with their followers that go beyond financial benefits, ensuring sustainability.

Regionally and locally, several studies have explored the link between servant leadership and sustainability in the pharmaceutical sector. For example, the concern for healthcare for low-income earners in Africa has prompted the African Union leadership to create programs geared at increasing access to affordable healthcare through the African Medicines Regulatory Harmonization (AMRH) (Ndomondo-Sigonda *et al.*, 2020). Further, in South Africa, altruistic leadership motivations compel healthcare practitioners and scientists to take a strong stance supporting the mandatory vaccination of citizen (Moodley, 2022). These efforts endeavor to lower the burden of healthcare in Sub-Saharan Africa as well as regions in Mauritius, Seychelles, Madagascar, Rwanda, Kenya, Comoros, Djibouti, Eritrea, Ethiopia, and Sudan. Indeed, the altruistic motivations behind these initiatives affect access to medication by increasing distribution and lowering the cost of medication. In the Kenyan context, leaders in public offices play a vital role in influencing the pharmaceutical industry. For example, in their study, Karanja *et al.* (2021) found that the leading motivation factors for servant leaders included providing a model to followers, humility, and empathy. They found that leaders with high levels of persuasive mapping were better at conceptualizing issues and

compelling others to do things. Therefore, it is worth understanding how leaders can adopt servant leadership to create sustainability within pharmaceutical distributors.

Roy *et al.* (2021) define sustainability as the process of meeting the needs of society through the deployment of business strategies, processes, and activities that protect the resources required in the future. On the other hand, Oluoko-Odingo and Mutisya (2019) note that sustainability refers to the long-term economic prosperity of an organization and stakeholder management aspects in the organization's activities. There has been a growing focus and interest in sustainability by global bodies, regional institutions, and national governments. Thus, through research and development, a suitable plan can be developed to address the pharmaceutical industry's challenges, especially regarding sustainability.

Sustainability is a key aspect of the pharmaceutical industry's modern-day business. Halla *et al.* (2020) observe that only a few industries have completely invested in improving quality of life like the pharmaceutical sector. It has been suggested that by focusing on the triple-bottom-line approach, organizations can achieve sustainability at both organizational and societal levels (Geissdoerfer *et al.*, 2018). Chaturvedi *et al.* (2017) note that sustainability is not just limited to environmentally friendly measures; it is also about improving the financial and social impact of the business. This concern can be well addressed in the pharmaceutical industry, whose main objective is to deliver medicines and other health care products to enable members of society to live healthier, longer, and fuller lives.

Through the operations of the industry that seek to achieve this goal by producing drugs and other pharmaceutical products, the industry players can not only fulfill their business objective but also achieve those societal concerns for sustainability (Halla *et al.*, 2020). However, for certain reasons, the profit-making dimension of the triple bottom line approach has tended to overshadow the commitment of most industries to those of the people

and the planet. This raises concerns to industry operators to increase their commitments towards the three dimensions of sustainability.

Strong evidence from past studies demonstrates that sustainability in pharmaceutical companies leads to long-term benefits in terms of profitability and social impact (Calciolari *et al.* 2024) Sustainability requires that pharmaceutical organizations consider their customers by providing affordable pharmaceutical products to improve health care quality (Bin *et al.*, 2021). This concern is anchored in the Sustainable Development Goals (SDGs) initially proposed in 2015 and have since become valuable guides for industries seeking to ensure sustainability (Sazvar *et al.*, 2021).

The United Nations introduced the seventeen Sustainable Development Goals (SDGs), which were part of the 2030 Agenda for Sustainable Development indicators, targets, and goals that the global community should achieve to safeguard society and the planet (Chiesi, 2021). The specific component of the SDGs addressing the pharmaceutical industry derives from the global objectives of the Sustainable Development Goals, which include an indirect target that aims to collaborate with pharmaceutical organizations with the aim of offering access to essential affordable drugs in developing nations (Hassan *et al.*, 2021).

In addition, the World Health Organization acts as the global reference that targets, combats, and provides information on the challenges faced in healthcare, such as universal health coverage and drug quality (Chorev, 2020 ; Milanesi *et al.*, 2020). For a nation to attain the SDGs objectives, it will require worldwide collaboration and the participation of the major stakeholders, such as people, advocacy organizations, institutions, and governments.

In the global, regional and local contexts, several studies demonstrate the sustainability challenges in the pharmaceutical sector. Pharmaceutical distributors are biased and only target high income areas, limiting distribution to low income areas (Buckley *et al.*,

2013). Further, the inability to account for all legal drug distribution channels contributes to the introduction of low-priced generic drug products that flood the market (Chorev, 2020). However, the wealthy have access and afford high-quality medication, which is unfair and may influence mortality and morality, undermining sustainability (Ward, 2022).

Regionally, the pharmaceutical supply chain in the Sub-Sahara has been negatively impacted by weak regulatory systems, enabling the inflow of poor quality drugs (NEPAD, 2021). In Nigeria, the high levels of corruption threaten national development by crippling the government institutions, including the healthcare delivery systems (Aigbavboa *et al.*, 2020). In Kenya, a lack of regulatory experience and competency has led to the infiltration of substandard and counterfeit products, leading to huge company losses (Gathungu, 2018; Wairimu & Ndeto, 2019). Thus, the pressure of ensuring equal distribution and accessibility to health care for global sustainability is high, and more solutions are required. A suitable leadership style is required for adoption by the managers of the pharmaceutical industry so as to design suitable business practices that respond to the emerging challenges from the regulatory system and the market based characteristics of diverse segments. The study adopted servant leadership style to investigate how its dimensions would apply in the sector to manage the pharmaceutical business in a way that would contribute towards its sustainability.

### ***Servant Leadership***

According to Eva *et al.* (2019), servant leadership affects the sustainability of organizations through multiple levels of performance because of its emphasis on knowledge-sharing among employees. This point is emphasized by Yucheng *et al.* (2019) argument that the trickle-down effect of servant leadership on sustainability outcomes in organizations has been associated with certain processes which include; customer service quality and performance, customer satisfaction, customer value co-creation, and customer-oriented pro-

social behavior. Servant leadership also includes practices that ensure that performing organizations sustain their performance, such as instituting a higher vision, purpose, and strategy, creating simplified and standardized procedures, cultivating clientele orientation, ensuring constant development, and sharing information and power and having quality employees (Batoool *et al.*, 2021; Baykal *et al.*, 2018).

Servant leadership is essential to the performance of individual departments and the overall performance of a firm. For example, Giolito *et al.* (2020) suggest that servant leadership contributes to individual stores' performance in an organization. Hashim *et al.* (2019) emphasize this point by noting that store-level servant leadership influences performance via work engagement. Servant leadership has also been highlighted as an antecedent of store performance through employee engagement as a tool (Knights & Mahon, 2020). Thus, servant leadership is considered the preparatory step in creating High-Performance Working Systems (HPWS) for sustainability (Bayram & Zoubi, 2020).

Servant leadership is concerned with the association between leaders and other people in organizations and is intent in providing equal measures of openness, humanity, rigor, and courage (Hernández-perlines *et al.*, 2020). It is a leadership philosophy that is concerned about ethical matters. In the last decade, the field of organizational studies has been drawn to research on servant leadership, with a focus on the role of a leader as a servant, putting others' needs first to then foster positive organizational results (Su & Chen, 2020). This revelation provides the relevance of servant leadership to organizations to help meet corporate objectives and sustainability. Servant leadership's focus on serving others majorly shifts the focus of leadership studies from only leading to maintaining a balance between the paradox of serving and leading simultaneously.

In the regional context, several researchers have demonstrated the role of servant leadership in enhancing sustainability. The role of servant leadership in a sustainable

enterprise is to align the strategy to integrate environmental aspects into daily business or transform the business process into an environmentally friendly nature (Harefa, 2021). The leadership style pushes investment decisions towards environmental capital, social aspects, and human resource. At the same time, a study was done on the effect of servant leadership style on retention of members of the Seventh-day Adventist church located in the Ada District, greater Accra Region (Ando-Mensah, 2021). The study aimed to identify business opportunities that could resolve the environmental problem and adopt a proactive approach toward sustainability. The study findings revealed that when servant leadership is incorporated into a church set up, it increases members' satisfaction, trust, and loyalty toward their leaders, thus enhancing their participation level.

Evidently, a major challenge that leaders encounter today is the need to develop new business models that stress on employee well-being, ethical leadership, sustainability, and social responsibility without sacrificing growth in revenues, profitability, and other financial performance indicators (Almahdali *et al.*, 2021). Servant leadership contributes to building high-performing organizations that are personal and humane. It focuses on the importance of the individual; every member feels empowered and responsible for the company's reputation (Ando-Mensah, 2021). Servant leadership also helps in the quest for the triple bottom line by avoiding the negative implications of a hostile work environment that may limit the realization of the Triple Bottom Line (TBL) Model of a sustainable enterprise (Güldenber, 2020). Thus, servant leadership may be a possible solution to achieving sustainability in the pharmaceutical industry.

Several scholars have considered the mechanism through which servant leadership benefits the organization (Bragger *et al.*, 2020; George & Katerina, 2016; Knights & Mahon, 2020). Kaya and Karatepe (2020) observes that the servant leadership style that changes its focus from the leader to the follower is suitable for creating sustainability. Kaya and Karatepe

(2020) adds that servant leadership takes a relationship approach that enables leaders to focus on the greater good of different organizational stakeholders. George and Katerina (2016) propose that one of the pathways through which servant leadership influences sustainability is through employee engagement and flourishing workers' trust and commitment. The importance of employee engagement and a positive work environment, as consequences of servant leadership and as positive influencers of turnover, safety, customer satisfaction, and productivity, performance and sustainability has been highlighted in the literature (Bavik, 2020; Mustam & Najam, 2020). Despite this, it is observed that the scholarship on servant leadership has dragged in its efforts to integrate the relevant dimensions suitable for application in diverse sectors.

Previous efforts toward this have been illustrated by Eva *et al.* (2019 ) and Ogochi *et al.*(2022). The study by Eva *et.al* provided an integrative and comprehensive review of 285 articles written on servant leadership for the past twenty years. Their review demonstrated the progression of servant leadership. The study clarified the concept of servant leadership with respect to other leadership approaches that are value based. However, they noted that their research design was restrictive, and questions still arise on the empirical and conceptual overlap between servant leadership, ethical, transformational, and authentic leadership approaches.

Further, Ogochi *et al.* (2022) study aimed to understand the servant leadership tenets that impact policy implementation through follower behavior within religious nonprofit organizations in Nairobi City County. Based on the findings, the components of service to others and holistic approach negatively affected the implementation of policies, while the tenets of uprightness and a sense of community affected policy implementation positively. While these represent progressive efforts that have enhanced comprehension of the application of servant leadership in different sectors, it is observed that they have noted the

inherent limitations regarding the specific contexts in which the studies were done and thus invited calls for extension of the scholarship into other contexts.

To build on the extant literature, the study suggests that the already identified dimensions need to be examined to establish how they blend in their respective configuration when operating in a sector that supports healthcare. Through diverse ways of conceptualizing as guided by the contextual characteristics of the health sector, an appropriate set of methodological approaches can be applied to model the operation of servant leadership in the pharmaceutical industry.

In view of the above, this study suggests that a relevant set of servant leadership dimensions needs to be identified for the pharmaceutical industry. Thus, the study proposes that the relevant dimensions need to align with the nature of the industry, especially at the level where its operations interface with the society when exchanges occur at the pharmaceutical products' acquisition and consumption. Due to the nature of the clientele and the conditions that characterize the timing of acquisition and consumption, the study observes that the needed dimensions require attributes of empathy, persuasion, ethics, and selflessness. Thus, this study proposes four constructs as suitable servant leadership dimensions: empathic servant leadership, persuasive mapping, ethical servant leadership, and altruistic servant leadership (Yuan *et al.*, 2020).

Empathic servant leadership refers to understanding and sharing another person's emotional condition in each context (Memili & Dibrell, 2018). Further, Widdison (2022) views empathy as the intentional or deliberate reaction to another person's lived experiences. The views of Widdison (2022) are consistent with those of Almasowd (2022), who asserted that empathy refers to the capacity to understand and share in the feelings of others, as well as Hossain and Rahman (2022) who refer to empathy as the ability to understand and appreciate another person's emotional condition.

Within the context of servant leadership, Sahawneh and Benuto (2018) claim that these servant leaders often show empathy in their leadership styles. Similarly, Mittal and Dorfman (2012) contend that empathy is an important measure and attribute for servant leaders to exhibit. They supported the positive elements that arose from leaders being empathetic as it motivated followers by showing them their needs were paramount. Such leaders demonstrate either affective, cognitive, or behavioural aspects (Siebens, 2020). Apart from demonstrating empathy, servant leaders should also demonstrate problem solving skills and direct their followers.

Mansyah and Rojuaniah (2021) viewed persuasive mapping as the servant leader's capacity to examine an existing problem, map out potential solutions to the problem, and provide the followers with a direction on how to solve those challenges. Memili and Dibrell (2018) further noted different aspects involved in persuasive mapping, including persuading rather than coercing members to follow a desired goal, developing two-way communication channels, and providing evidence-based logical reasoning. These aspects persuade and motivate followers to follow up on the right decisions to achieve organizational goals. Zargar and Sousan (2019) view persuasive mapping as the possession of the know-how by the leader to motivate the followers to achieve organizational goals. According to Hashim *et al.* (2019), the persuasive characteristics of servant leaders enable them to motivate employees to work willingly and enthusiastically. While providing direction to their employees, servant leaders should ensure that they provide an ethical climate and demonstrate ethical values.

Servant leaders are always seen to undertake their responsibilities ethically. Ullah *et al.* (2021) assert that ethical servant leadership treats followers with fairness, honesty, and transparency. On the other hand, Lumpkin and Achen (2018) view ethical leadership within the context of servant leaders, leading to the formulation of morally reasoned decision-making, development of value-based leadership, and the creation of an environment of

honesty, fairness, respect, and trust aspects. Servant leaders; thus, create an environment in which, according to Shim and Park (2019), followers can navigate moral dilemmas in their day-to-day functions. Dodd *et al.* (2018) assert that ethical servant leaders undertake decision-making while considering the ethical and moral consequences of their decisions while being driven by the personal moral values of honesty and integrity. Fatima and Zafar (2018) asserted that servant leaders have increased ethical sensitivity, which are characterized by a composite of behaviours such as virtuousness, ethics, values, morality, integrity, trust, virtues, and honesty. Apart from behaving ethically, servant leaders should put their needs before others and perform their duties without expecting monetary rewards.

When analysing the components of servant leadership, altruistic behaviours have been noted in diverse ways. Bao *et al.* (2018) noted that servant leaders adopt altruistic behaviours that enable their followers to replicate their behaviours with diverse stakeholders, which magnifies societal wellbeing. In this context, Bao *et al.* (2018) assert that servant leaders put the interests of the community and their followers above theirs and do not expect those receiving their services to reciprocate in kind. Prasath *et al.* (2021) posit that altruistic behaviour in servant leadership manifests itself in various ways. The actions of these leaders are majorly focused on their followers' needs, while the company's concerns and needs become peripheral (Barbuto & Wheeler, 2006; Franco & Antunes, 2020 Liden *et al.*, 2008).

Servant leaders also put their self-interests aside for the development of their workers and to promote their well-being. Van Dierendonck (2012) notes that this action is viewed as a service to others using authentic selflessness. Lee *et al.* (2018) assert that servant leadership is further associated with the altruistic calling and altruistic healing. Pte *et al.* (2019) and Ragaisis (2018) contend that altruistic calling refers to a leader's desire to bring a positive difference in other people's lives. Franco and Antunes (2020) claim that altruistic calling includes virtues, humility, spirituality, discipline, and morality. Altruistic healing on the

other hand addresses management of stress, pain and discomfort through compassionate care that improves the follower's well being.

The operation of the leadership process is determined by specific dimensions of servant leadership, where the focus is on offering direction, follower influence, and motivation. Several resultant outputs arise when servant leadership is incorporated; employees unleash creative potential to build organisational capacity for adaptation and strategic fit. In a pharmaceutical industry setting, sustainability can also be attained through innovations geared at addressing societal issues.

### ***Social Innovation***

Over the last few decades, organizational scientists have discussed workplace innovation among themselves. Innovation is generally viewed as an outcome of organizational leadership with key implications for the organization's performance (Lazaretti *et al.*, 2019). Being innovative is not about presenting a novel idea but actualizing it in real life (Zeigler, 2017). Thus, innovation is an integral social process that requires networking, the formation of groups, and interactions among people. Servant leadership creates positive emotions and values as workers feel they are important to a company. Consequently, employees are more likely to be involved in innovative behavior, which affects the organization's success and sustainability (Kuzma *et al.*, 2020). Owing to the relationship between servant leadership and sustainability, employees are expected to be capable of demonstrating innovative behavior due to a strong sense of acceptance and belonging (Heider *et al.*, 2021).

Social innovation has often thrived under the servant leadership model. The servant leadership principles of empathy and altruistic aspects impact on social innovation dynamics (Hassan *et al.*, 2021). The employees under servant leaders are expected to develop a positive self-concept, which will drive them to engage in innovative behavior. In addition, the

development of innovative capability coupled with servant leadership qualities in an organization is expected to initiate change in idea generation and product development, further improving sustainability (Kawira, 2021; Pramuki & Kusumawati, 2021). The concern for follower welfare by servant leaders enables the development of social innovation to address social challenges (Mugo & Macharia, 2021). Thus, social innovation development is encouraged within the context of a business environment led under the servant leadership model.

Social innovation is critical in the pharmaceutical distribution businesses within informal settlements. The inhabitants of the informal settlements often face diverse challenges, such as; social ills, poverty, lack of critical transport infrastructure, and security challenges (Barasa, 2018; Gitatui et al., 2019). These aspects make it challenging for business performance within the context of the informal settlements, thus, necessitating social innovation. The social innovation thus enables the pharmaceuticals operating in those environments to overcome the local business challenges (Wafula *et al.*, 2019).

Presently, numerous business sectors and individuals are experiencing many social innovations. Thus, it is critical to determine whether social innovation plays a mediating role between servant leadership and sustainability among pharmaceutical distributors in Kenya. Bulut (2012) defines social innovation as proposed new solutions or ideas to address people's needs that are yet to be met, with the overarching goal of improving their welfare and life standards. For an element to be viewed as socially innovative, it needs to be created, lead to change, and be internalized or accepted. In the extant literature, the common traits evident when it comes to social innovation are that it is regarded as an effective solution, a need, and one that can create beneficial solutions at societal, organisational, and individual levels (Bulut, 2012 ; Goldenberg, 2004; Mulgan et al., 2007 Neamtan, 2003;, Tanimoto & Doi, 2007).

Moulaert *et al.* (2005) and Adams and Hess (2008) propose a five-dimension model of social innovation. The model positions social innovation as an approach for enhancing the capacity of communities that organizations serve. The five proposed ways of addressing this capacity include; satisfying human needs, changing social relations through the process, increasing political and social capability and access to resources, building assets at a community and organisational level, and the entire community acting as a social agent. The study adopted these three indicators of social innovation: enhancing need satisfaction, improving social relations, and individual and community empowerment due to the set of challenges that characterize the low income market segments in the informal settlement areas where this study was done. The researcher was of the view that appropriate innovative strategies are required to address the capacity of the markets to satisfy health care needs by ensuring the markets are accessible as well as being sensitized to communicate their needs to the pharmaceutical products providers.

Need satisfaction reflects the degree of fulfillment or contentment on customer experience when interacting with a particular product or service. By measuring need satisfaction, companies can foster stronger relationships with customers, increase customer loyalty and achieve long-term business growth. According to Hinde and Spencer-Booth (2017), relationships are ongoing patterns of interactions between two individuals who acknowledge some connection with each other. Individuals bring into their social exchanges reasonably stable social orientations that dispose them to be more or less sociable and a repertoire of social skills for understanding the thoughts, emotions and intentions of others and for solving social dilemmas. Relationships, in turn, are influenced by past and anticipated future interactions. Empowered communities are seen to be able to engage and participate in local projects that matter to people, have strong social ties and a belonging and continually develop community skills that build capacity to act and contribute to the local democracy

(Farmer, 2017). According to Steiner and Famer (2017), the process of community empowerment starts with community engagement which enables participation and thereafter empowerment.

Moulaert *et al.* (2005), Adams and Hess (2008), and Kirwan (2013) note that Social Innovation (SI) has three critical features. Firstly, SI's goal is to meet the needs of people that have yet to be fulfilled, particularly when it comes to products or services. Secondly, the goal of social innovation is to enhance social relations, and this is linked to making adjustments to social relations' aspects (Adams & Hess, 2008 ; Kirwan, 2013 ; Moulaert *et al.*, 2005). For example, individuals who were not included in certain community activities should be engaged increasingly to improve their participation.

Finally, social innovation seeks to empower the community. Mainly, that can be achieved by making it easier for individual to access the needed resources and enhancing their political and social capital. Neumeier (2012) concurs with these components of SI. The researcher notes that social innovation is a new way of civic contribution and democracy that allows marginalized groups to vocalize their needs. What this implies is that social innovation is concerned about including every person and ensuring that each can access justice. Despite society's institutions striving to fulfil their community's needs through SI, certain market entry barriers may impede this process.

### ***Market Entry Barriers***

The informal settlements in urban centres have distinct characteristics from those of the middle and high-income areas, such as infrastructure, social, economic status, lifestyles, and social cultural norms and behaviours. This may create barriers for businesses seeking to serve customers within those geographical segments. Thus, the existence of the barriers may serve to constrain business operations (Nakov & Islami, 2019). The pharmaceutical sector will likely face several barriers to entry into these segments. Joe S. Bain, an American

Economist, defined barriers to entry as the advantage established players in a sector have compared to potential entrants (Corporate Finance Institute (CFI), 2021). Due to the costly investments that early entrants into an industry incur, as part of their strategy to recoup the returns for their investments, they would enact a variety of barriers that make it difficult for new organizations to enter into the industry and in the event they do enact a sufficient measure of difficulties for them to survive in the industry.

The established players can persistently increase their prices without fear that new entrants may gain a substantial share of the market. These market entry barriers are divided into natural or structural and artificial or strategic. Structural barriers range from ownership of raw materials or major resources, high economies of scale and high start-up costs, to the high cost of research and development (CFI, 2021). On the other hand, artificial barriers include; limiting pricing, advertising costs, licenses, patents, and contracts, strong brands, switching costs, and loyalty schemes.

Pharmaceutical distributors require critical business entry strategies to make it possible to enter those markets (Mailu & Ntale, 2018). This may involve using the mass market business model to cater for the business requirements of low-income areas by meeting their price points and the quantity of drugs sold to them (Bataineh *et al.*, 2018). These strategies enable the firms to enter the designated markets easily and help mitigate those barriers that would have limited the market entry aspects (Ndung'u, 2020). Thus, understanding the entry and exit barriers in the pharmaceutical industry is critical so that distributors can know when to enter specific markets and when to exit.

Understanding the relevant set of Market entry barriers in a particular market segment and addressing them through appropriate strategies may impact the pharmaceutical industry's success, particularly in low-infrastructure regions. The issues associated with entry barriers in the pharmaceutical sector vary across global, regional, and local spheres and perspectives.

However, some aspects of market entry seem to prevail across all markets, with one of the key issues being cost (Godman *et al.*, 2018; Maini & Pammolli 2020). The Indian pharmaceutical market, however, is the exception to this rule as the low cost of medical production gives the country a competitive edge in pharmaceuticals (Chitra & Kumar, 2020).

Dembah (2010) asserts that pharmaceutical businesses can use innovative solutions to create barriers to entry; thus, eliminating the competitive environment. Creating entry barriers keeps similar products from entering the market. As such, one can say that large pharmaceutical firms are mainly responsible for creating some of the entry barriers. However, Chitra and Kumar (2020) contend that competitiveness lowers entry barriers across the pharmaceutical industry and permits new entrants. This enhances medicine distribution in the marketplace and, consequently, the variety of prescription medicines. The operation of servant leadership dimensions can be done in a way that considers the set of barriers faced by pharmaceutical distributors as opportunities not only for business, but also to serve others. Relying on the distinguishing feature of servant leadership of service to others first, servant leaders in this industry would be adequately prepared to respond to the challenges as they identify opportunities within the challenges for them to serve as well as initiate interventions at organizational level for community service.

### ***Sustainability***

Sustainability aspects are critical in any distribution chain. In the business context, sustainability is the process of considering social, economic, and environmental pillars while managing an organization (Mahajan & Bose, 2018). It may also be regarded as the triple-bottom-line approach. Given the importance of sustainability, pharmaceutical companies need to provide better outcomes for their customers and the environment in which they operate. Davis (2021) gives an example of the Bayer Pharmaceutical Company, which is guided by the motto of "science for a better life" to provide innovations that enhance

sustainability. Davis (2021) further underlines that pharmaceutical companies worldwide have the moral duty to operate ethically, transparently, and responsibly. They also need to remain ethical and transparent when developing their products, which are essential in achieving sustainability.

Peña *et al.* (2021) also noted that pharmaceutical companies in European countries such as the UK and Germany had doubled their efforts to source their services and products from emerging economies and are forming partnerships with suppliers. The researchers point out that cases involving irresponsible suppliers have been reported and have touched on social and environmental issues (González Peña *et al.*, 2021). Therefore, suppliers' skills and capabilities to handle sustainability challenges play an essential role in the performance of European pharmaceutical companies.

Kondo (2019) also gives an example of sustainability at Novo Nordisk, a Danish pharmaceutical company that pursues sustainability through responsible economic, social, and environmental activities. Novo Nordisk's approach is based on its core principles (the Novo Nordisk Way) and guides the company in considering different stakeholders. Kondo (2019) explains that this is because the company trusts that it would benefit from being sustainable for Novo Nordisk, society, and the environment based on previous experiences. Besides the present movement, such as UN sustainable development goals, pharmaceutical companies in Japan and other countries are also needed to create long-term sustainable goals and values.

While companies can experience challenges in maintaining sustainability, several factors can contribute to their success (Köksal & Strähle, 2021). Concerning the concept of entrepreneurial success, various indicators have been used to measure sustainability, such as employee turnover and growth, return on investment, sales growth, profitability, and economic survival (Klaus *et al.*, 2018). Miceli *et al.* (2021) broadly defined success factors

for sustainability as capital acquisition-related, environment-related, owner-related, and task-related. Mabonga (2020) also concluded that servant leadership is critical in organizational sustainability because it changes employee attitudes, facilitates engagement, and reduces turnover intentions. Servant leadership is also one of the driving forces behind sustainability in enterprises through the TBL model (Kaya & Karatepe, 2020). Through the operation of servant leadership, leaders align the organizational strategy towards sustainable development, which is harmonious with a business's social, economic, and environmental role.

Leadership drives the shift towards a sustainable approach for businesses as captured by the TBL model. Elkington's (2018) study restated that “the triple bottom line is a framework of sustainability that assesses a company’s economic, social, and environmental impact” (Kraaijenbrink, 2019). TBL is often considered synonymous with sustainability, and in most cases, sustainability is defined through the same three elements as the TBL (Bin *et al.*, 2021). A corporation’s traditional financial ‘bottom line’ demonstrates strong parallels with three pillars, which are complemented by bottom lines for environmental and social performance (Purvis *et al.*, 2018). They are referred to as ‘planet, people, and profit’ (Purvis *et al.*, 2018; Rout *et al.*, 2021). The pillars encourage organizations to consider longer-term viewpoints in their decision-making, resulting in a sustainable business.

Kraaijenbrink (2019) states that the people component focuses on a company's negative and positive impact on its critical stakeholders, including suppliers, employees, communities, and customers. The people component refers to the firm having the right staff to do business with the proper credentials and attitudes, enabling them to achieve business effectiveness (Rout *et al.*, 2021). Further, Swarnakar *et al.* (2022) liken the people pillar to human capital or social equity, which pertains to advantageous and fair business practices directed towards workers and the community, and the area an organization carries out its

business operations. People aspects enable firms to function productively within their specific operations (Mulyungi, 2018).

Profit is another component of the 3Ps. The profit or financial bottom line handles the economic value that the organization creates after removing the cost of all inputs, including the expenses of the capital tied up (Swarnakar *et al.*, 2022). Kraaijenbrink (2019) notes that the profit dimension focuses on the negative and positive effects of an organization's global, national, and local economy, including payment of taxes, innovation and employment generation, creation of wealth, and any other economic activity that impacts the organization. Business processes allow firms to develop products at reasonable prices, enhancing business sustainability (Mwiyavengi, 2020).

Swarnakar *et al.* (2022) consider natural capital or the environmental bottom line synonymous with the planet component, which refers to sustainable environmental activities. The planet focuses on the negative and positive impact that an organization's activities have on its natural surroundings, including toxic materials, use of natural resources, minimizing its carbon footprint, reforestation, addressing natural harm to the environment, and actively removing waste, reforestation, and restoration (Kraaijenbrink, 2019). A company employing the TBL model should strive to engage in activities that enrich the natural order or at least practices that do not harm the environment. The planet component allows the company to achieve its business objectives despite the challenging business environment. Gbejewoh *et al* (2021) contend that although making profits or excellent economic performance may prove advantageous for an organisation in the short term, considerations of the planet and people dimensions are critical for the firm's long-term survival. The above conceptualization of the TBL approach was used in this study to provide a framework for operationalizing the dependent variable of sustainability.

### ***Pharmaceutical Distributors in Kenya***

The pharmaceutical industry in Kenya is regulated by the Pharmaceutical Society of Kenya (PSK), a representative organization established to pave the way for pharmacists to perform their professional duties (Pharmaceutical Society of Kenya (PSK), 2022). The body was formed in 1964 and had its origins in the Pharmaceutical Society of East Africa. Its objectives include; advancing the pharmacy practice, creating and maintaining a standard for the code of ethics and professional conduct, facilitating the role played by pharmacists as health practitioners, and exercising quality control measures (PSK, 2022). The organization was established to promote quality in the sector and update members regarding changes in the practice. PSK adopts an all-inclusive approach in pursuing its goals by emphasizing the code of ethics and professionalism. It also advocates for the establishment and review of appropriate pharmaceutical policies (PSK, 2022). The organization applies its code of ethics that guides its members to comply with professional and ethical standards, enhancing compliance.

Another critical body that regulates the sector is the Pharmacy and Poisons Board (PPB), which governs the retail and distribution of pharmaceutical products in Kenya (Ngugi & Gitonga, 2021). It registers distributors, pharmacists, and retail pharmacies, whose applications meet the standards required to do business in the value chain of the pharmaceutical sector. The PPB is expected to certify all retail pharmacies and distributors to operate (Olow *et al.*, 2020). Overall, Kenya's retail and distribution markets are not well regulated and are highly fragmented.

The Kenya Association of Pharmaceutical Industry (KAPI) is a membership organization that was established in the late 1960s to facilitate an innovative, responsible, and ethical healthcare industry. The membership is based on Research and Development Companies and local representatives to meet the needs of the dynamic population (Kenya Association of Pharmaceutical Industry (KAPI), 2022). The organization comprises R&D

companies in various departments, such as Diagnostics and Veterinary Healthcare Companies, Medical Device Companies, and Vaccines and Healthcare. The core values are; integrity, ethics, relationships, and integrity, and the vision is to spearhead the provision of world-class and innovative services, products, and solutions. KAPI is affiliated with the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA), World Self-Medication Industry (WSMI), East African Business Council (EABC), Kenya Private Sector Alliance (KEPSA), and Kenya Healthcare Federation (KHF) (KAPI, 2022).

The pharmaceutical industry comprises four players: manufacturers, distributors, retailers, and the consumer market. These players act as the intermediaries between the drug supply; that is, the manufacturer and the final consumer, the patient. They all play a pivotal role in the country's health sector which has over five thousand facilities (Africa Business Pages, 2022). When addressing pressures surrounding sustainability, these players in the pharmaceutical sector are strongly working towards implementing measures that improve their sustainability efforts, for example, by enhancing effectiveness in their operations.

Chaturvedi *et al.* (2017) noted that a safe, efficient, and sustainable distribution of temperature-sensitive biopharmaceutical products is possible and more cost-effective. For example, with the correct supply chain partner (distributor), a pharmaceutical company distributing 1 billion vaccine doses can save 340 million gallons of water, reduce landfill, and reduce carbon dioxide emissions by 120 million Kg (Chaturvedi *et al.*, 2017). Thus, ethics and guidelines in the pharmaceutical industry's organization and structure are needed to meet sustainability objectives.

The pharmaceutical distribution chain is complex and may vary globally and locally, as well as in developed and developing countries (Buckley *et al.*, 2013). The modern pharmaceutical supply chain allows for the sourcing and outsourcing of different drug ingredients from various countries, which are then exported upon their formulation and can

be repackaged, packaged, and sold (Buckley *et al.*, 2013). In developed countries, such as the United States, the advanced level of technological and social innovations allows for easy access to drug distribution channels with more stricter regulations regarding handling pharmaceuticals allowing accountability (Buckley *et al.*, 2013).

In the US, a few large firms such as McKesson and Cardinal Health control the national wholesale market, distributing about 90 percent of the drugs, and the majority of the pharmaceuticals are bought in retail pharmacies, with half being food stores or national chains (Buckley *et al.*, 2013). In developing countries, many firms control tiny wholesale market shares, with complicated and fragmented distribution chains, leading to more intermediaries connecting the manufacturer with the patient (Buckley *et al.*, 2013).

During Covid-19, the pharmaceutical industry's supply chain was interrupted by the lockdown and limited transportation, mainly affecting low- and middle-income countries. According to Guerin *et al.* (2020), Indian firms have stepped up the need for pharmaceutical supplies by meeting generic demand. Statistically, about \$19 billion of pharmaceuticals were exported to over 200 countries between 2018 and 2019, ranging from highly regulated markets in Europe to lowly regulated regions (Guerin *et al.*, 2020). India also outsources over 70 percent of its wholesale drugs from China, which they repackage and sell externally to international organizations, governments, and locally. Thus, the need for generic brands within the market is high and made relevant. As such, the pharmaceutical industry strives to meet the demands of the diverse market. East Africa supplies all drugs ranging from poor quality to high-end quality medication, with low to high prices respectively, influenced by different pharmaceuticals (Chorev, 2020). Multinational pharmaceuticals invest in developing countries like Kenya due to their market potential.

Over the years, the Kenyan pharmaceutical industry has grown rapidly, creating business opportunities for manufacturers and distributors. The companies involved in

distributing and manufacturing pharmaceutical products have increased exponentially owing to the government's efforts to develop the industry. Records indicate that registered pharmaceutical technologists and pharmacists lead over 1300 dealers and 700 registered wholesalers (Africa Business Pages, 2022). Given the high number of companies handling pharmaceutical products, the need for good leadership to put regulatory measures in place is critical to enhancing distribution to informal settlements areas in Nairobi County.

Multinational corporations dominate the pharmaceutical market in Kenya, with only three local organizations in the top 15 players. However, local players in the sector have an equivalent market share when it concerns volume. Notably, some of the lists of distributors, wholesalers, and manufacturers in the informal settlement communities are as follows. The active and registered Kenyan manufacturers are 33 (See Appendix II).

Despite the need for dependence on external investment and finance, Kenya manages to sustain a steady pharmaceutical supply chain. Presently, Kenya is the largest producer and distributor of pharmaceutical products in the COMESA (Common Market for Eastern and Southern Africa) region (Africa Business Pages, 2022). It satisfies 50 percent of the market demand in the area. The prescription market is estimated to be worth more than \$500 million and is anticipated to grow at a compound annual growth rate (CAGR) of 11.8% from 2014 to 2019 (Africa Business Pages, 2022). While prescription drugs account for approximately 78% of the market, the over-the-counter segment is expected to grow exponentially in the future. The top five pharmaceutical companies export 40 to 85% of their production, mostly to other East African countries (Olow *et al.*, 2020). Notably, several issues have arisen that negatively impact the pharmaceutical sector. They are broadly classified as internal company issues, market challenges, and regulatory challenges. Servant leadership dimensions promise to enhance this industry's sustainability if integrated into the leadership system that guide its operation (Eva *et al.*, 2019).

### Statement of Problem

Even though the pharmaceutical industry has been perceived to perform well, there are indications that not every aspect of this sector has performed to the required standards ( Kiplagat & Odollo, 2021 ). The sector has been reported to experience challenges associated with the market and the regulatory system (Onyango, 2020). The market-related challenges have been associated with characteristics of the low-income areas, mostly in urban areas, arising from poor purchasing power due to low income and, thus, being unable to create a sustainable demand level for drugs even though the population remains largely high (Machoka *et al.*, 2021; Ngugi & Gitonga, 2021; Tenambergen & Oluoch, 2020).

On the other hand, the regulatory challenges have resulted from the inability of the industry regulatory body, the Pharmacy and Poisons Board (PPB), to enforce the required standards by the industry players regulating ethical considerations in the distribution of pharmaceutical products; thus, leading to some of the distributors operating at a loss (Gathungu, 2018; Kiplagat & Odollo, 2021). To survive, the operators have had to charge products at a higher price based on market rates, which makes it difficult for most consumers to afford (Ngugi & Gitonga, 2021). Thus, this raises serious concerns for the survival of the distribution system, which is considered vital for ensuring the sustainability of the industry and the health of the population in those segments.

The need to adopt servant leadership in the pharmaceutical industry is based on the prevailing situation that calls for leadership attention (Lee *et al.*, 2019; Omondi, 2018). A lack of an effective leadership style in the industry has led to the employment of unskilled as well as unqualified members of staff, especially in low-income areas. Nte *et al.* (2020) assert that the pharmaceutical distributors in Kenya experience leadership challenges that have primarily contributed to the collapse of many businesses. Further, managers and owners should adopt a leadership approach that is sustainable (Askaripoor, 2019 ; Lee *et al.*, 2019).

As these pharmacies fail to observe regulations and use unskilled staff, they can endanger the customers that they serve.

According to Eva *et al.* (2019), even though servant leadership scholarship has entered its third phase of scholarly development, such development has raised methodological implications for advancing servant leadership knowledge to its next level. Further, Eva *et al.* (2019) noted that the scholarship in servant leadership needs to expand the conceptual, contextual, and methodological scopes of consideration. In fact, Van Dierendonck (2010) and Ragnarsson *et al.* (2018), and Ardiyasa (2020) note that most leadership scales focus on people aspects, such as service to others, with the leadership aspect being overlooked. The ideal situation would be that of the servant leader applying attributes of service to influence followers towards attainment of business goals (Ragnarsson *et al.* 2018). Therefore, servant leadership knowledge will be enhanced by ensuring the dimensions of servant leadership are investigated in new contexts using more robust methodological approaches that enhance the generalisability of findings.

This study notes that previous research, as noted by Eva *et al.* (2019) has relied on relatively low statistical rigor where the most advanced statistical technique so far applied has been that of ordinary least squares regression analysis. Due to these calls raised by Eva *et al.*, 2019 coupled with the limitations in the previous research by Van Dierendonck (2010) and Ragnarsson *et al.* (2018), and Ardiyasa (2020), the current study suggests the need to investigate the role of servant leadership dimensions in the pharmaceutical industry which is considered much more suitable to the nature of the servant leadership construct due to its contribution to human health. Alongside the contextual scope, the study proposes the adoption of structural equation modelling (SEM) approach for statistical analysis. SEM offers the capability to first extract the relevant components of servant leadership suitable for the pharmaceutical sector and subsequently construct a path analysis showing the causal effects

of servant leadership dimensions on the construct of sustainability (Orcan 2018; Syafiq *et al.*, 2022).

It is further noted that besides the methodological limitations of the previous studies, there are notable conceptual and contextual issues that scholarship indicates need attention. A majority of the research, such as (Alssageer & Kowalski 2021, Franco & Antunes, 2020; Goupil *et al.*, 2019 ; Koiri, 2018; Steele *et al.*, 2020) were exploratory, thus, not able to show the effects of the constructs that comprise the construct of servant leadership on organizational outcomes. Some studies attempted to measure the effects of servant leadership dimensions on policy implementation (Ogochi, 2022; Ogochi *et al.*, 2022); servant leadership among vulnerable groups in hospitals (Hattab & Kornelius, 2021 ; Jafari *et al.*, 2018; Nadeak, 2019) and servant leadership within the context of the Covid 19 pandemic (Ayati *et al.*, 2020; Huamán-Romaní *et al.*, 2021; Ruiz-Palomino *et al.*, 2022).

Servant leadership dimensions promise to enhance the sustainability of this industry if allowed to contribute towards its operation. However, due to the growing interest in the role of the construct of sustainability, there is need to expand the conceptual scope by relating servant leadership dimensions with sustainability of organizations. The contexts studied have also been limited in that few reflect African settings and the healthcare sector. Therefore, there is a need to continue research in African settings and focus attention to the healthcare industry, which has a relatively strong appeal for the characteristics of servant leadership (Ogochi *et al.*, 2022).

Thus, the current study proposes to expand the conceptual, contextual and methodological scopes by determining the mediating and moderating roles of social innovation and market entry barriers respectively on the effect of servant leadership on sustainability of pharmaceutical distributors. The focus of this study therefore was to determine the effects of market entry barriers and social innovation on the relationship

between servant leadership and sustainability of pharmaceutical distributors targeting the informal settlement areas in Nairobi City County, Kenya.

### **Purpose of the Study**

This study sought to investigate the effect of market entry barriers and social innovation on the relationship between servant leadership and sustainability among pharmaceutical distributors in the informal settlement areas in Nairobi City County. The expected outcomes of the study were to expand the existing knowledge on servant leadership, particularly how its adoption can influence the sustainability of pharmaceutical distributors in Nairobi City County.

### **General Objective**

The general objective was to investigate the effect of social innovation and market entry barriers on the relationship between servant leadership and sustainability of pharmaceutical distributors targeting the informal settlement areas in Nairobi City County, Kenya.

### **The Specific Objectives**

This study was based on the following specific objectives:

- (i) To establish the effect of empathic servant leadership on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi City County, Kenya.
- (ii) To determine the effect of ethical servant leadership on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi City County, Kenya.
- (iii) To examine the effect of servant leadership by persuasive mapping on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi City County, Kenya.

- (iv) To investigate the effect of Altruistic Servant Leadership on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi City County, Kenya.
- (v) To examine the mediating effect of social innovation on the relationship between Servant Leadership and sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi City County, Kenya.
- (vi) To examine the moderating effect of market entry barriers on the relationship between servant leadership and sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi City County, Kenya.

### **Research Hypotheses**

- (i) **H<sub>01</sub>**: There is no statistically significant effect of Empathic Servant Leadership on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi City County, Kenya.
- (ii) **H<sub>02</sub>**: There is no statistically significant effect of ethical servant leadership on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi City County, Kenya.
- (iii) **H<sub>03</sub>**: There is no statistically significant effect of servant leadership by persuasive mapping on the sustainability of pharmaceutical distributors the informal settlement areas in Nairobi City County, Kenya.
- (iv) **H<sub>04</sub>**: There is no statistically significant effect of altruistic servant leadership on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi City County, Kenya.
- (v) **H<sub>05</sub>**: There is no statistically significant mediating effect of social innovation on the relationship between servant leadership and the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi City County, Kenya.

- (vi) **H<sub>06</sub>**: There is no statistically significant moderating effect of market entry barriers on the relationship between servant leadership and the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi City County, Kenya.

### **Assumptions of the Study**

The study was undertaken based on the following assumptions. Firstly, the pharmaceutical distributors have a well-organized structured governance structures through which leadership is exercised. Within the leadership structure, the various leadership positions are occupied by competent leaders. Another assumption was that pharmaceutical distributors have existed for a reasonable duration to facilitate the leadership system to form in the various levels of the organizations' hierarchy of management. Further, the study assumed that the respondents had acquired sufficient industry and work related experience that would enable them to respond to the concerns of the study from an informed point of view. Finally, the data collection within these areas would be possible despite security concerns, and the data collection would proceed on time.

### **Justification of the Study**

The subject of servant leadership and its outcomes on employee, team, and organizational outcomes has recently been the focus of various scholars (Eva *et al.*, 2019; Kaya & Karatepe, 2020; Saleem *et al.*, 2020; Yucheng *et al.*, 2019). From the studies conducted in Indonesia (Amelia *et al.*, 2020); France *et al.* (2020); and the United States (Beck *et al.*, 2020); Ethiopia (Yimenu *et al.*, 2021 & Hailu *et al.*, 2021); and Uganda (Nanteza, 2018) covering different sectors, including the health, political, and financial sectors, the influence of servant leadership on various organizational outcomes has been documented. However, this knowledge did not adequately address business sustainability.

The state of the scholarly literature on servant leadership indicates that even though major milestones have been achieved in its conceptualization, there still remains more ground to be covered on a number of fronts that call for additional scholarship to strengthen the conceptual, theoretical and methodological rigor. Towards this end, the current study responded by addressing the concerns raised on conceptualization and methodology so as to pave way for integration of more theoretical frameworks that enrich the current understanding of the operation of servant leadership construct. In addition, the contexts of investigation have been suggested as possible areas for consideration in expanding the scope of the current scholarship. The study responded to this call by carrying out investigation in the pharmaceutical industry in an emerging economy context. Servant leadership was investigated to explain how it would predict sustainability of the industry using the three pillars of people, planet and profit. To enhance relevance of the application of the construct of servant leadership in the sector, the study considered the variety of challenges facing pharmaceutical distributors and included two constructs; social innovation and market entry barriers so as to offer explanations on the contingent factors that need to be integrated into the operation of servant leadership in the pharmaceutical industry. The findings based on this conceptualization add to the existing stock of knowledge not only on the constructs adopted in the study, but also on the contextual scope that has been pointed to by previous scholarly works.

### **Significance of the Study**

The current study undertaken in the pharmaceutical industry is significant. The study on servant leadership in connection to sustainability, is considered vital in knowledge development on the two constructs as they comprise constructs of great concern among scholars and practitioners. There is a growing concern for organizations to undertake business operations with an aim to ensure sustainability along the pillars of people, environment and

profitability. An appropriate leadership style is required in enabling scholarship and organizations to attain growing concern. It is against the background of this, that this study identified four areas of significance where the study findings offered useful benefits.

Undertaking this study on servant leadership and sustainability provides an opportunity to describe the nature, characteristics and operations of the pharmaceutical industry so as to identify how the nature of the industry would be integrated with the nature of servant leadership. By investigating servant leadership, the study helps in identifying the appropriate set of servant leadership dimensions that are suited for deployment in the pharmaceutical industry. Further, the findings of the study generated using a robust structural equation modelling technique have extracted the specific set of dimensions so as to explain how servant leadership is currently situated in the pharmaceutical industry and the manner in which it is contributing to the concerns for sustainability using the three indicators of people, planet and profit.

Secondly, the findings of the study have a good measure of practical significance. The study adopted servant leadership based on the theoretical framework by Greenleaf whose main theme is service to others. Given that the sector studied is one that has an emphasis on humanitarian service, servant leadership has a lot to offer in the operations of the industry. Even though the industry has that humanitarian concern, it operates on the basis of profit making. The study finds that the results reported are significant in enabling industry operators, managers and other connected stakeholders be in a position to understand how the dimensions of servant leadership premised on the core tenet of service to others would be operated to serve the industry's profit driven concerns. In this regard, the study indicated that the theoretical postulates of the Greenleaf Model need to be integrated with the reasoning obtained from complementary theoretical frameworks of Mouton and Blake and other

behavioural science theories in order to design work programs for applying servant leadership to influence, motivate and direct followers towards attainment of desired organizational goals.

By making the above contribution, the study expanded the scope of the current conceptual and theoretical understanding of the servant leadership style. Previous scholarly attempts (Dierendonck, 2010; Eva *et.al*, 2019) had cited limitation with current understanding of servant leadership in terms of the scope, context, conceptualization and theoretical rigour relied upon in advancing servant leadership for its practical applications. The conceptualization for the current study considered the unique characteristics of the industry so as to obtain relevant dimensions from extant literature. The study went further and considered the implications of deployment of servant leadership in an industry likely to face market related challenges. The study integrated concepts drawn from entrepreneurial and strategic studies to relate servant leadership with social innovation and market entry barriers. The reported findings on the mediated and moderated hypotheses provide useful insights on the circumstances under which servant leadership delivers positive outcomes to organizations. Thus, the findings offer useful insights on how servant leadership premised on the core attribute of service to others can be conceptualized and operated to bring about outcomes of strategic importance to organizations.

Lastly, the findings reported in the study are based on a robust statistical approach which was adopted in response to calls found in extant literature for scholars to enhance the methodological rigour in advancing scholarship on servant leadership. In view of this, the study tested for both direct and mediated and moderated effects using structural equation modelling technique which has superior functional and statistical power in comparison with the ordinary regression model analysis. Through the SEM confirmatory factor analysis was able to produce outputs with path diagrams that better explain the causal effects not only of

the composite variables but also on the respective components that comprise variables . The study therefore, offers insights based on rigorous statistical analysis in a way that better explains how the current situation of the operation of servant leadership makes a contribution towards sustainability in the context of challenges arising from market entry barriers and how that triggers social innovation in bringing about positive outcomes to organizations. By adopting this robust statistical technique, the study is considered significant in providing the required statistical justification for the adoption of servant leadership as a useful style for directing followers towards organizational goals in organizations.

### **Scope of the Study**

The study's scope focused on conceptual literature on servant leadership and sustainability. It was undertaken from 2020 to 2023. Mainly, the research focused on four dimensions of servant leadership and their effect on sustainability's financial, social, and environmental performance measures. Nairobi City has 55 areas designated as low income areas (Nairobi City County, 2018). However, the study was only limited to the 6 major informal settlement areas in the County that host over 80% of the informal settlement population. The unit of analysis for the study was the pharmaceutical distributors that serve Kibera, Mathare, Korogocho, Mukuru kwa Njenga, Kangemi, and Kawangware low income areas. Specifically, the researcher focused on thirty distributors that serve these areas. Further, the study selected managers from seven departments, including administration, sales and marketing, human resources, finance and logistics, and supply chain departments, as the unit of observation. It employed a quantitative research design and structured questionnaires to collect data from 168 respondents.

### **Limitations of the Study**

The main limitation of the study concerned the data collection circumstances. Although the researcher opted for online questionnaires where possible, this came with its set

of challenges. Online questionnaires may lead to a low response rate that may affect the study's external validity. To address this, the researcher extended the period of data collection. However, this was not possible beyond a certain time due to financial and time constraints.

Another limitation of the study was that managers run most pharmaceutical distributors on behalf of owners. Getting the owners to approve their employees' participation in the study took time as it involved frequent visits or even talking to them over phone. This slowed down the data collection, affecting the response rate and external validity. The findings in this study were mainly limited to the informal settlement areas in Nairobi County; hence, not generalizable to other informal settlements in Kenya. To address this, the study findings and recommendations applied only to Nairobi City County.

### **Chapter Summary**

This chapter commenced by looking at the background to the study, purpose and objectives of the study which gave a contextual understanding drawn from prior research that called for the current study. This set the stage for the study purpose that provided the basis for the study's objectives. The chapter has addressed the assumptions that underpinned the research and the justification for the study emphasizing on the relevance and potential impact of the study. The chapter has also outlined the significance of the study highlighting its contributions to theory, policy and practice. It delineates the scope and limitation of the study establishing boundaries within which the research operated and acknowledged the constraints that the researcher faced.

## **Chapter Two: Literature Review**

### **Introduction**

This chapter presents a review of the related literature to support the conceptualization of the study. The chapter also presents literature on the relevant theories that underpin the study variables. Four theories are reviewed and discussed to help in understanding the authorship, postulates and contribution to the study variables. The empirical literature has been reviewed for each of the four types of study variables. Previous researches have been identified and a summary of each presented to provide an understanding of the state of the art of research on the phenomenon involving servant leadership in the context of the pharmaceutical industry. The study critically analyzed each so as to identify knowledge gaps that justify undertaking of the current research and proposed a conceptual framework that provided the basis for the research hypotheses tested in the study. The chapter ends with a presentation of the adopted conceptual framework that the researcher used to address the identified knowledge gaps. The chapter summary is also provided at the end of the chapter.

### **Conceptual and Empirical Literature**

Empirical literature reviewed is presented in this section. Arvind (2010) argues that empirical literature enables a better understanding of a research phenomenon by aiding in research problem conceptualization. The researcher reviewed the study's variables with a view to identifying the relationship among the variables as undertaken in other studies. Gray and Grove (2020) assert that empirical literature comprises knowledge derived from research. According to Aveyard *et al.* (2021), empirical literature serves to connect a current study with previous studies that have been undertaken on the variables that build the study.

### ***Concept of Sustainability***

In the last 20 years, there has been a surge in publications on sustainability leading to a distinct branch known as Sustainability Science being introduced (Kajikawa *et al.*, 2014 ; Komiyama & Takeuchi, 2006; Schoolman *et al.*, 2012). Despite this, sustainability as a concept is still open to different interpretations due to its unique nature of being context-sensitive in its understanding (Purvis *et al.*, 2018). Based on a prevalent description of sustainability, it employs three interconnected dimensions, pillars, stool legs, aspects, perspectives (Boyer *et al.*, 2016; Mori & Christodoulou, 2012), and ‘components’ (Arushanyan *et al.*, 2017 ; Tanguay *et al.*, 2010; Zijp *et al.*, 2015), which encompass environmental (or ecological), social, and economic factors. These competing terms are applied interchangeably, with the preference being arbitrary. Usually, if not often, the multilateral description presents three intersecting circles of economy, environment, and society with an intersection where sustainability is placed. The three-circle attempts to explain the discussion around sustainability but may not offer a more thorough apprehension of sustainability (Purvis *et al.*, 2018).

The first existence of the term sustainability was in the institutional debates of the Rio Summit and institutionalized as an internal strategy for calming social protest and ambiguity (Pérez & Llorente, 2006). After that, the concept gained relevance, especially after ‘Our Common Future’ publication, and has since emerged to elaborate connections between nature and humans as an interdisciplinary science (Mittler, 2007). The Brundtland (2016) report provided a platform for the need for sustainability. It placed a condition on sustainability by recognizing the environmental changes that result from the interaction between resource management and humans in the environment to analyze the threat to the continued existence of life support systems dependent on them (Shahadu, 2016). Thus, because of the report, sustainability as a field of practice and research was developed.

Currently, local and global attention has been drawn to the discussion on sustainable development, which is increasingly viewed as a multidimensional occurrence with the need to understand its involvement in different aspects of people (Boarini *et al.*, 2014 ). In most instances in literature, the lack of standardized definitions has influenced the use of sustainable development, sustainable science, and sustainability interchangeably, placing importance on setting apparent differences. The Brundtland Report defines sustainable development as “one that meets the present generation’s needs without interfering with the future generations’ capacity to satisfy their own goals and interests” (Pérez & Llorente, 2006).

Similarly, Shahudu (2016) defines sustainability as: " a problem-inspired, disciplinary science of systematic inquiry into the interconnections and relations between the past, present, and future of life and its support systems, to keep the productive capacity of life support systems in harmony with the demands placed on them, at all times.” Recently, researchers have used this to mean the convergence between economic, environmental and social aspects of sustainability, which is evidenced by 68 percent of 250 firms that generated sustainability reports covering these aspects (Shahudu, 2016). Despite the advanced research on sustainability, much of the work remains theoretical, with limited guidance on implementation, sustenance, and delivery of the outcomes (Moore *et al.*, 2017).

Thus, two foundational challenges in conceptualizing sustainability arise. The challenges include the variety of synonyms that can be used and the lack of a standard definition that limits researchers to how they can measure and operationalize sustainability (Moore *et al.*, 2017). The lack of specificity in terminologies used to discuss sustainability is a hindrance that challenges growth in research as it presents researchers with a problem of duplication, a concept unbecoming. Researchers such as Proctor *et al.* (2015) have attempted to develop a refined agenda on sustainability, including providing clarity on terminologies

and core concepts of sustainability. The alternative terms include institutionalization, durability, maintenance, routinization, and continuation.

The challenges of the definition of sustainability have become more profound as different disciplines, such as child welfare, education, medicine, and prevention science, are tackling similar issues (Moore, 2017). Thus, the need for further research to definitively address these issues regarding the conceptualization of sustainability continues to exist. For this study's purpose, the researcher will measure sustainability using the TBL approach of people, planets, and profits, regarded as the social, environmental, and economic aspects that impact the sustainability of pharmaceutical distributors in Nairobi County.

### ***Sustainability in the Pharmaceutical Industry***

The pharmaceutical industry faces diverse challenges that undermine the sustainability levels of the distribution of pharmaceutical products. The challenges undermining the sustainability of pharmaceuticals include inefficient logistics and supply chain systems (Buckley *et al.*, 2013); distribution of counterfeit drugs (Fernando *et al.*, 2020; Haq & Muselemu, 2018; Sylim *et al.*, 2018), substandard drugs (Sylim *et al.*, 2018), challenges in occupational safety and management aspects (Yang & Maresova, 2020); and unethical practices in pharmaceutical promotion and related marketing activities (Bélisle-Pipon, 2021; Cote, 2021; Khazzaka, 2019). Sylim *et al.* (2018) study aimed to develop a pharmacy surveillance block chain system and test its functions in a simulated network. The study determined that stakeholders, such as the Federal Drug Administration (FDA), need to play a supervisory role. Though the study identified the importance of the supervisory role yet it failed to mention how it must be applied.

The current study investigated leadership aspects based on servant leadership and the effect on pharmaceutical distribution in Kenya. On the other hand, Bélisle-Pipon (2021) study reviewed the ethical aspects and implications of acceptable pharmaceutical practices. The

study noted that ethical imperatives impact how pharmaceutical professionals need to operate. The study only mentioned the ethical implications in the pharmaceutical industry; but failed to delve into how leadership can address the ethical issues that arise in the sector, an aspect that this research sought to address.

One of the challenges noted in the sustainability of pharmaceutical distributorships is the context of inefficient logistics and supply chain systems. In a developed nation like the United States, a few national organizations control the primary wholesalers. Buckley *et al.* (2013) reviewed the drug distribution chain with the objective of evaluating the differences between developed and developing nations. They reported using the example of AmerisourceBergen, McKesson, and Cardinal Health that they supply 90% of drugs sold in the U.S, while five prominent organizations sell to 90 percent of Japan's and Western Europe's markets (Buckley *et al.*, 2013). In Organisation for Economic Co-operation and Development (OECD) nations, such as Belgium, Canada, and Austria among others, most of the pharmaceuticals are shipped by private organizations (Buckley *et al.*, 2013). Usually, regulatory bodies need some chain of custody documents.

On the other hand, middle- and low-income nations have vastly more complex supply chains. Hundreds of companies will have a minimal share of the pharmaceutical supply chain in developing nations like Kenya (Buckley *et al.*, 2013). At times, they will have multiple distribution systems that run in parallel and with different efficiency rates. Usually, the government is responsible for transporting drugs. For example, the transportation and distribution of drugs are the sole responsibility of the government in sub-Saharan Africa. Furthermore, transporting drugs through poor roads and rough terrains is extremely expensive (Buckley *et al.* 2013). In the case of India, since most of the population stays in rural regions, they lack access to the necessary amenities, such as electricity and supplies (Buckley *et al.* 2013).

Since supply chain management is highly inefficient, this results in stockouts and increased costs in developing countries. The review provides evaluative information on how the pharmaceutical industry operates internationally but falls short of identifying the specific factors that affect distribution. Thus, this study seeks to address specific contextual gaps, such as the inadequate identification of factors such as leadership and evaluation of the business environment, which offers the current study an evaluative research niche to evaluate the leadership effects and business environment relationship in the distribution of pharmaceutical products in Kenya.

Zarei *et al.* (2020) undertook a study that sought to examine the influence of decision-making in influencing pharmaceutical shortage within the context of the Iran pharmaceutical system. The study collected data from published resources and reviewed them for the study. The researchers then used demand forecasting, Delphi, Analytic Network Process (ANP) model development, and questionnaires to identify dominant clusters and their relationships. The sample size for the study was 14 respondents, and the researchers analyzed the results using the Super Decisions Software. The study reported that the sector suffers from an irregular supply of pharmaceutical products, especially drugs for the treatment of non-communicable diseases. Due to this, the study raised the need to improve the pharmaceutical drug supply chain to enhance its reliability within Iran's context.

Although the researchers used an interesting technique, fuzzy ANP, to analyze data, the complexity of the quantitative analysis makes it difficult to use it to make practical decisions. Thus, the study sought to fill in the methodological gap by using a Structural Equation Modeling (SEM) approach to analyze the relationship between servant leadership and sustainability among pharmaceutical distributors in Nairobi City County, which allowed the researcher to draw meaningful conclusions. In as much as the researchers talked about sustainability issues in the context of shortages in the pharmaceutical sector, they did not

provide practical solutions for addressing them. Thus, this study sought to address the gap by demonstrating how servant leadership can address sustainability issues in the sector.

In France, Pourrat *et al.* (2020) undertook a study to examine factors leading to drug shortage within the context of Intensive Care Units (ICU). The study noted a lack of sustainability in the supply of pharmaceutical products due to the increase in population demands and concentration of the manufacture of the active ingredients of the drugs outside the European Union. The recommendation was to establish a collaborative group of professional and scientific associates to provide suggestions on optimizing health products during the COVID-19 pandemic. However, the study did not provide information on sustainability in the distribution modalities of health products in resource-poor areas, such as informal settlements regions. Thus, this opens up an avenue for the current study to analyze how servant leaders can enable the sustainability of pharmaceutical distribution in the informal settlement areas.

In Bangladesh, Islam *et al.* (2019) undertook a study that examined the performance of the pharmaceutical manufacturing sector in the country. Data was collected using structured questionnaires, direct observations, and interviews. In particular, the study sought to examine the contributory factors of drug shortage within the pharmaceutical sector in the country. Amongst the factors impacting the unsustainability of the pharmaceutical sector in Bangladesh were shortage of raw materials, short production lifecycle, poor product quality, and the seasonality of the demands of various products. The study clearly outlined the root causes of shortage in raw materials in the pharmaceutical industry but failed to pinpoint human resource factors contributing to shortages and the consequences. The current study offered to address this gap by investigating how moderating factors of market entry barriers can improve sustainability in pharmaceutical distribution.

The unsustainability of pharmaceutical drug distribution in the United States was examined in a study by Beck *et al.* (2020). The study was undertaken with respect to the distribution of drugs within the public sectors in the United States. The study data was retrieved from public government domains such as the Federal Drug Administration, listing the drug shortages identified from the 12<sup>th</sup> to 13<sup>th</sup> July 2017. The researchers noted a shortage of 215 drugs within the period, including essential and non-essential pharmaceuticals. The study's conclusion within the context of the public health sector noted that the drug shortage presented the drug unavailability aspects without knowledge of when the restocking would happen and the consequences of the utilization of the alternative drugs that could be available.

The pharmaceutical distribution challenges are grouped into three broad categories, including economic and regulatory aspects, business reasons, and supply chain challenges. The business challenges are of particular interest in the current study. Beck *et al.* (2020) found that the business reasons challenging the pharmaceutical business include an increase in volatility of the prices, margin reduction aspects, and diverse medical-legal issues. However, this study did not address how the business can maintain a sustainable distribution chain using mitigation strategies. The current study sought to fill this gap by evaluating how leadership can address the complexities arising from distribution to ensure the systematic distribution of pharmaceutical products, even in the informal settlement areas.

The pandemic, such as Covid-19, can potentially influence the global supply chain thus impacting the sustainability of pharmaceutical distribution performance. In this context, Ayati *et al.* (2020) examined the impact of the Covid 19 Pandemic on the pharmaceutical sector in relationship to its pharmaceutical distribution aspects within the context of Switzerland. The study found that the pandemic had impacted the sustainability of pharmaceutical distribution through its influence on the global supply chain network. This led

to challenges in the shortage in the drug availability aspects within the pharmaceutical sector; thus, destabilizing the supply chain efficiency. The study's main contribution was understanding distribution disruption during the pandemic. However, it failed to justify how impending factors such as leadership would address the impending crisis. Therefore, the current study investigated diverse servant leadership attributes' effects on sustainability including; persuasive mapping, ethical, altruistic and empathic leadership in pharmaceutical distribution to determine supply chain efficiency.

The impact of Covid 19 Pandemic with respect to pharmaceutical distribution was further examined by Yimenu *et al.* (2021) in a study based in Ethiopia. Data was collected from 101 community pharmacies, and structured questionnaires utilized for the data collection process, but only 80 contributed to the survey. Descriptive statistics and chi-square tests were used with a 95% confidence interval. The data results showed that 78.8% of the participants had pharmaceutical shortages, including shortages in personal protective equipment. The study found that the Covid-19 pandemic challenges undermined the sustainability of pharmaceutical distribution through demand fluctuations, supply shortages, and panic stocking of drugs.

The shortage of pharmaceutical products during the period further led to cost implication challenges in respect to the drug pricing aspects. The limiting factor of the study is that it did not consider how the business environment impacted the pharmaceutical distribution channel, which the current research addressed by examining how the presence of environmental issues represented through market entry barriers conceptualized as moderating variable affects sustainability in pharmaceutical distribution, even in informal settlement areas.

Reddy and Naude (2019) study aimed to identify internal and external factors in the supply chain that impact Green Supply Chain Management (GSCM) initiatives at a

prominent pharmaceutical manufacturing company in South Africa's Durban. The researchers also aimed to discuss the measures that Big Pharma has put in place to enhance the integration of GSCM in its logistics, procurement, and planning departments. The study employed a qualitative research design where nine participants were presented with semi-structured interviews. The researchers used a non-probability sampling approach of purposive sampling technique, to select the subjects from the three departments mentioned.

Reddy and Naude (2019) found evidence of high pressure to minimize selling prices, a lack of support from the government, and high costs affected the supply chain. Although the study was critical in identifying factors affecting the adoption of green supply chain initiatives, these aspects were only applicable to the Durban Pharmaceutical Company. Furthermore, it only covered aspects affecting the adoption of environmental measures and not social or economic aspects. Thus, this study sought to fill these gaps by focusing on the 3 Ps of sustainability in the context of informal settlement areas in Nairobi City.

Further, Mackintosh *et al.* (2018) study focused on the benefits of producing pharmaceuticals locally in Africa to ensure access to medicines by locals and improved treatment. The researchers noted that health systems specialists on a global scale were sceptical that the manufacturers of these medical products in sub-Saharan Africa (SSA) could result in the reliability of supply, quality medicine, and competitive pricing. They used a qualitative research design where interviews were conducted in 2017 and between 2013 and 2015 in East Africa. They found out that actors involved in the healthcare sector regard investments in the production of pharmaceuticals locally as an excellent avenue to enhance access to supplies and medicines. The study is critical in providing solutions to shortages in pharmaceuticals in developing African nations. However, the study focused on the entire SSA region; hence, the findings could not be generalised to the Kenyan context. Therefore,

this research sought to fill this gap by investigating approaches that can be employed to address issues of sustainability among pharmaceutical distributors in Nairobi City County.

Steele *et al.* (2020) study sought to discuss the need for local pharmaceutical firms in Africa to scale up in light of the recent pandemic and consider manufacturing their pharmaceutical products locally. The researchers relied on literature reviews from practice and academic sources. They also collected qualitative data through webinars and online surveys. They targeted five major stakeholder parties using the International Association of Public Health Logisticians (IAHPL) platform, and 26 respondents filled in the survey. The researchers concluded that counterfeits from global markets and generic imports in Nigeria and Kenya need to be controlled using regulatory bodies. They also noted that manufacturing pharmaceuticals locally would continue to be problematic and have difficulty adhering to global standards. Although Steele *et al.* (2020) touched on regulatory issues making it difficult for African nations to manufacture their pharmaceuticals, they did not provide practical solutions to addressing these problems.

Similarly, Abbot *et al.* (2021) studied the extent to which gaps in economic stability present hindrances for African nations to produce pharmaceutical products locally. The methodology entailed desk research, preparing an initiation report, using focus groups, interviewing stakeholders, and questionnaires. The researchers found that gaps in financing make it difficult for African pharmaceutical companies to produce pharmaceuticals locally. Mainly, these issues are linked to investors perceiving investing in Africa as risky, market environmental factors, and weak infrastructure. Although the report comprehensively analysed the financial aspects that make it difficult for African nations to manufacture their pharmaceuticals, it did not provide practical solutions. Thus, this study sought to fill these gaps by proposing the need for servant leadership to address sustainability issues among Kenya's pharmaceutical distributors.

Waleng and Nomngongo (2022) study on pharmaceuticals' effects on the environment has stirred global and societal concerns. Their research focused on the existence of pharmaceutical products in developing nations in Asia and Africa, particularly their inland waters. Waleng and Nomngongo used mixed methods research, where quantitative and qualitative data were collected within six years, 2011-2017. The target countries were Kenya, Tanzania, and Uganda, where 160, 52, and 23 qualitative interviews were conducted for phases I, II, and III, respectively. Quantitative data was collected based on availability, and Stata II software was used to analyse quantitative data. Waleng and Nomngongo (2022) investigated the mechanisms of distribution and sources of these effluents. They found that non-steroidal anti-inflammatory drugs (NSAIDs) and antibiotics were the most common in African waters. They also associated these effluents as likely to cause health risks. Though the study was critical as it focused on how pharmaceutical products pollute waters, it did not provide solutions for this major concern, a gap this study sought to fill.

Weru (2018) study aimed to examine the factors that impact Kenya's pharmaceutical manufacturing companies' sustainable development. He used a cross-sectional research design, where 32 local firms that the Pharmacy Poisons Board had registered as of 2016 were targeted. The researcher used questionnaires to collect data, which was analysed using regression analysis. Weru (2018) found that government regulations, the cost of production, competition, and international regulations affected the sustainable growth of these firms. The study highlighted the factors affecting the sustainability of pharmaceutical outlets in Kenya. However, it did not consider the critical role of servant leadership in addressing sustainability.

Kiriinya (2020) study aimed to examine how supply chain relationship management practices impacted the performance of Kenya's pharmaceutical firms. The researcher used a descriptive research design and census sampling approach. Notably, 171 pharmaceutical

firms were targeted. Kiriinya (2020) concluded that proper relationship management could enhance the performance of pharmaceutical companies through a rise in market share, stable supply chains, higher financial returns, enhanced customer relations, and minimal lead times. Indeed, the study was relevant as it highlighted how supply chain problems could negatively impact pharmaceutical companies' performance. However, it did not consider the use of servant leadership to address issues with the supply chain, which causes sustainability challenges. The current study filled this gap by demonstrating how servant leadership can address sustainability challenges faced by pharmaceutical distributors in Kenya.

A few gaps were evident after analyzing studies focusing on sustainability issues in the pharmaceutical industry. Although the findings revealed that the supervisory role was critical in addressing sustainability challenges, they failed to indicate how it could be applied. The findings only mention the ethical implications that arise in the pharmaceutical industry, but did not delve into how leadership can address these ethical issues. Further, although the findings provide information on how the pharmaceutical industry operates from an international level, they fall short in identifying the specific factors that affect distribution and leadership's role in addressing environmental factors. In addition, the findings failed to demonstrate how servant leadership can address sustainability issues in the pharmaceutical sector, particularly in low-income regions. They also failed to consider how market barriers are affecting the sustainability in the pharmaceutical sector. Thus, the current study sought to fill this gap by evaluating how leadership can address the complexities of the market environment to ensure the systematic distribution of pharmaceutical products, even in low-income areas. In particular, the current study investigated how servant leaders can enable the sustainability of pharmaceutical distribution in the informal settlement regions.

### ***The Concept of Leadership***

Leadership construct is a critical component in organizational management and performance. Several scholars have noted the importance of leadership in organizational performance of pharmaceutical businesses (Amelia *et al.*, 2020; Machoka *et al.*, 2021; Siriattakul & Jermstittiparsert, 2019; Yuan & Lo, 2018). According to Mamun *et al.* (2018), leadership has been linked to the sustainability aspects by scholars such as (Akpoviroro & Amos, 2018; Abdullah Al Mamun *et al.*, 2018, and Kowo & Akinbola, 2019). Leadership refers to the process of providing direction, motivating, and influencing the followers (Ardiyasa, 2020). On the other hand, Aziz *et al.* (2021) viewed leadership as the process through which a leader influences their followers' attitude, behavior, and thought process to achieve organizational objectives. The way a leader influences their followers is known as the leadership style. Accordingly, there are diverse leadership styles, including transactional, transformational, strategic, and servant leadership. Mainly, this study focused on servant leadership and its role in the sustainability of pharmaceutical distribution within the context of the informal settlement areas in Nairobi City County.

The servant leadership construct is a critical component in organizational management and performance. The leadership style is defined as a set of behaviors, traits, and qualities that servant leaders utilize in interaction with their subordinates. Notably, this study focused on servant leadership and its role in the sustainability of pharmaceutical distribution within the context of the informal settlement areas in Nairobi County, which is the context of this research.

### ***Concept of Servant Leadership***

Defining servant leadership is critical in determining the key characteristics that demonstrate a servant leader and how they impact sustainability. Servant leadership first originated in an essay by Robert K. Greenleaf (1904-1990) in 1970, which he later published

in the book, *The servant as leader* in 1977 (Greenleaf, 2002). The servant leader is naturally drawn to serve, which leads to the aspiration to lead. The paper emphasized testing whether the decision encouraged individual growth by asking if one became more autonomous, wiser, freer, and healthier. The paper questioned what benefit would come of it and what impact would be on the less privileged in society (Frick, 2004).

According to Spears (2010), Greenleaf discusses the need for a more suitable approach to leadership that prioritizes serving others, such as customers and employees. Leaders who adopt the servant leadership theory have emerged due to the demand for more people-centered and ethical managers. They are expected to prioritize the wellbeing of their employees; hence, the need for leadership that engages in caring and ethical behaviors.

In servant leadership, the approach highlighted the need for more service to others that creates a power share in making decisions and may promote togetherness (Spears, 2010). According to Greenleaf's belief, some people were predisposed more to be servant-leaders than others and yet, there was also a belief that it could be learned. Developing servant leadership requires effective methods, including; emulating the best way to live as a servant-leader; encouraging others in service provision; accepting others as they are; sharing knowledge on tools in servant leadership, and encouraging people to emulate the examples of servant leadership that applies to their lives (Spears, 2010). Essentially, the practicality of the leadership style depended on the ability to be relatable.

Spears (2010) then developed a list of servant-leader characteristics that might speak more directly to many others as their initial introduction to servant leadership. He considered these traits as another possible way to define servant leadership, particularly for people who were focused more on its application or personal development and modeling.

Spears viewed the characteristics as complementary to Greenleaf's more conceptual assessment of servant leadership (2010). Thus, the following characteristics are central to the

development of servant-leaders: empathy, listening, healing, persuasion, awareness, conceptualization, building community, foresight, stewardship, and commitment to people's growth (Greenleaf, 2002; Spears, 2010). Spears (2010) also noted that servant leadership applied to a wide range of institutions, profit or non-profit among others, board of trustees, service learning and community leadership programs, personal transformation, and leadership education.

Following Spears' list, Russell and Stone (2002) further identified twenty unique servant leadership characteristics. The authors classified the characteristics as functional attributes because they appear repeated in literature with specific functions. At the same time, some were termed accompanying features for their supplementary role to the functional attributes (Russell & Stone, 2002). According to Minnis and Callahan (2010), the functional and accompanying attributes include encouragement, credibility, trust, integrity, communication, listening, persuasion, stewardship, vision, influence, service modeling, delegation, honesty, pioneering, competence, visibility, and teaching.

Ehrhart (2004) further notes that servant leadership benefits the organization beyond financial gain and encourages recognition of a leader's duty to subordinate development as well as the customers and community. Continuously, emphasis is placed on the need for servant leaders as they create and serve different stakeholders, including external and internal, by giving them value (Canavesi, 2021). Overall, the servant leader should exhibit behaviors fundamental to good leadership, such as empowering, helping subordinate growth, emotional healing, ethics, community value, and conceptual skills. Clearly, a great overlap of these behaviours is noted, as authors strive to identify what makes a servant leader. However, what is not in question is that the core concepts of morals and values are critical for a person to be regarded as an effective servant leader.

In Dierendonck's (2011) "Conceptual Model of Servant Leadership," the model presented focuses on the serving and leading servant leadership elements. Van Dierendonck (2010) noted that most scales of servant leadership concentrated on 'people' aspects, such as serving, helping, being honorable, empathic, authentic, healing, behaving ethically, and accepting. Although all these aspects are critical, considering the leader aspect of servant leadership is paramount, which is lacking in most models of servant leadership. The model divides servant leadership characteristics into six: stewardship, developing and empowering people, interpersonal acceptance (forgiveness), authenticity, providing direction, and humility (Van Dierendonck, 2010). The emphasis on serving and leading means that a leader must do both (Ragnarsson *et al.*, 2018). What this implies is that a leader could only be a servant leader if they serve and lead.

Servant leadership is currently in the third phase of research. In the development of this model, sophisticated research designs are used to transcend simple associations with outcomes to mediating mechanisms and a comprehension of the boundary conditions and antecedents of servant leadership (Eva *et al.*, 2019). According to Eva *et al.* (2019), servant leadership is a different-oriented style of leadership, which is demonstrated by prioritization of follower interests and needs one-on-one; and reorienting their self-concern toward others in the larger community and the organization.

A servant leader engages in power sharing, helps individual development by putting their needs first, is willing to learn, and hardly focuses on personal rewards and advancement. Servant leaders present a vision, and their team comprehends their desired results and expectations (Eva *et al.*, 2019). They concentrate on performance planning, daily coaching, and assisting people to achieve their objectives. According to Ardiyasa (2020), servant leadership is characterized by the leader focusing on the followers' needs and concerns. The servant leadership traits of healing, empathy, listening, awareness, conceptualization,

persuasion, building community, stewardship commitment, and foresight influence people's growth associated often with vulnerable groups.

Servant leadership is an emergent paradigm that can transform organizations and develop positive organizations that capitalize on the triple bottom line (Knights & Mahon, 2020). The Servant Leadership Theory emanated from an intrinsic motivation theory that incorporates vision, faith, and altruistic love (Amah & Oyetuunde, 2020). They noted that servant leadership resulted in minimal employee turnover and improved career growth. However, this study does not directly analyze the pharmaceutical industry, which is the context of the current research.

Servant leadership taps into the fundamental needs of followers and leaders for spiritual well-being through (i) a calling, which implies that a person's life has purpose, a meaning and aims to make a difference (Franco & Antunes, 2020) and (ii) membership or a sense that one is appreciated, understood, and accepted unreservedly (Lazaretti *et al.*, 2019). The purpose of servant leadership is to ensure congruence in their vision and value at the individual, community, team, and organisational levels. Ultimately, this results in higher levels of organizational productivity and commitment, whereby corporate social responsibility, human well-being, and sustainability of organizations (the triple bottom line) can coexist and be maximized (Ardiyasa, 2020).

Franco and Antunes (2020) conducted thematic exploratory research to identify and deliberate on the concepts of servant leadership in six Portuguese companies and noted nine dimensions; including, empowering, helping and putting subordinates first, ethical behavior, vision or wisdom, altruistic calling, identification with the leader, and family atmosphere. The only limitation of the study was that of not addressing how all these aspects of servant leadership impact the organizational outcomes. On the other hand, Lazaretti *et al.* (2019) conducted a systematic review of the literature study on innovation and sustainability in

organizations in articles published between 2009 and 2018. The study noted that mobilization, network action, relevant stakeholders, an overhaul of the business model, redefining numerous values, and sustainable strategic scope are pivotal to promoting innovation. However, the research was not directed to the pharmaceutical industry and failed to address servant leadership dimensions. Thus, the current study utilized the factors mentioned to analyze how innovation and sustainability can be achieved in the pharmaceutical distribution channels in informal settlement areas in Kenya through the lens of servant leadership.

In this context, servant leadership has been examined with respect to the leadership of vulnerable groups in hospitals (Hattab & Kornelius, 2021; Jafari *et al.*, 2018; Nadeak, 2019) and servant leadership within the context of the Covid-19 Pandemic (Huamán-Romaní *et al.*, 2021; Ruiz-Palomino *et al.*, 2022). To influence business sustainability, servant leadership has been noted as sufficient, which is a factor that led to its focus in this study. The researchers that have linked servant leadership to sustainability aspects include (Batool *et al.*, 2021) ; Shi, 2019 ; Shi & Chen, 2019) among others. Other studies on servant leadership have focused on non-governmental organizations (Ogochi *et al.*, 2022 ; Singh, 2014). Singh (2014) study aimed to investigate the most dominant leadership style used in Non-Governmental Organizations (NGOs) and found that servant leadership was the most dominant.

Further, Ogochi (2022) study aimed to understand the tenets of servant leadership that influence the implementation of policy through follower behavior within religious nonprofit organizations in Nairobi County. The study found that service to others and holistic approach affected the implementation of policies negatively, while uprightness and sense of community affected policy implementation positively. In spite of these findings, there is still

lack of understanding on how servant leadership dimensions would influence organizational outcomes in the pharmaceutical industry.

Due to the overlap in the characteristics of servant leadership as advanced by Greenleaf (1997), Spears (2010), Russell and Stone (2002), Ehrhart (2004), Minnis and Callahan (2010), the current study considered that it would be critical to determine the specific dimensions of servant leadership that would apply in the context of the current study. The current research drew its conceptualization from Spears (2010) ten characteristics of servant leaders and narrowed them down to four of these traits: empathy, ethics, altruism, and persuasive mapping. Empathy is synonymous with emotional healing, interpersonal acceptance, listening, and forgiveness (Ardiyasa, 2020 ; Dierendonck, 2010; Page & Wong, 2000).

The available literature also viewed altruism as acts of service or being a servant (voluntary subordination), which was likened to stewardship and community building (Page & Wong, 2000; Sendajaya *et al.*, 2017). Ethical servant leadership was regarded as behaving ethically or responsible morality (Liden *et al.*, 2008 ; Page & Wong, 2000); Sendajaya *et al.*, 2017). Since some of the characteristics could fall into the primary constructs proposed for this study; thus, the researcher opted to include the four dimensions of servant leadership, including altruism, ethics, persuasive mapping, and empathy.

### ***Empathic Servant Leadership and Sustainability***

Empathic servant leadership helps sustain business distribution in diverse ways. Empathic servant leaders can empathize with their customers, thus understanding their needs, concerns, and challenges, which enable them to tailor their business offering to suit their specific context. This is critical in enhancing the sustainability of the business practices such as distribution aspects. According to Hossain and Rahman (2022), empathy refers to the ability to understand and appreciate another person's emotional condition. According to

Mittal and Dorfman (2012), empathy is an important measure and attribute for servant leaders to exhibit. The research they conducted supported the positive elements that arose from leaders being empathetic as it motivated followers by showing them their needs were important. Thus, this study borrowed from questions generated in the Empathy Components Questionnaire (ECQ) derived from Page and Wong (2000), Lawrence *et al.* (2004) and Batchelder *et al.* (2017) studies. Empathic servant leadership is based on the affective, cognitive, and behavioural aspects.

According to Siebens (2020), there are three major types of empathy in servant leadership: affective (emotional) empathy, cognitive empathy, and behavioural aspects. Affective or emotive empathy has been noted to be the traditional meaning of empathy and entails an individual's ability to share another person's intrinsic feelings (Hung, 2020). In this context, affective empathy is associated with sharing the emotional responses provided by social cues (Şakir *et al.*, 2021). The ability to be sensitive to other persons' opinions, views, experiences, and feelings has been perceived as the conceptualization of affective empathy (Heym *et al.*, 2019). Morosan *et al.* (2020) view affective empathy as the ability to share other people's emotions, while Zhang *et al.* (2021) conceptualized affective empathy as the degree to which a person feels or experiences the feelings of another person.

Bayram and Holmes (2020) contrast affective and cognitive empathy while indicating that the former matters. In this context, they note that affective empathy deals with feeling, which is critical compared to cognitive empathy, which deals with just knowing and understanding the feeling of others. Within the context of the underprivileged, Bayram and Holmes (2020) posit that affective empathy leads to the helping of deserving under privileged persons. Queirós *et al.* (2018) note that affective empathy is further composed of emotion contagion, proximal responsivity, and peripheral responsivity. According to Volonte *et al.* (2021) and Steinert (2021), emotional contagion is related to the individual's ability and

capacity to mimic the emotions, behaviours and feelings of others. This view is consistent with that of Şakir *et al.* (2021) and Cui and Xu (2021). On the other hand, Queirós *et al.* (2018) view proximal responsivity as the perception of an individual's feelings and experiences within a close social set up, while peripheral proximity is the perception of those feelings for persons not within a close social setup.

Cognitive empathy is another critical component of empathy. Cognitive empathy refers to the intellectual competence to objectively evaluate someone's else perspectives, backgrounds, experiences, opinions, and feelings (Siebens, 2020). Chen *et al.* (2021) assert that cognitive empathy can be viewed in terms of perspective-taking and online simulation aspects. Perspective taking refers to an individual's capacity to view aspects, emotions, and feelings from the other person's perspective. On the other hand, Queirós *et al.* (2018) asserted that the online simulation aspects of cognitive empathy relate to the ability to put one in another person's position imagining their feelings and experiences.

Siebens (2020) further states that the behavioural aspect of empathy refers to the communication of the ability to share the feelings of the other person. This communication enables the person to demonstrate their caring, compassion, and altruistic behaviours. Empathy can be displayed in servant leadership through communication, as noted by Wu *et al.* (2020), and practicing compassionate love (Mayer & Oosthuizen, 2020). Empathy leads to the development of trust between the leaders and the served (Mareus, 2018; Martin, 2019). Empathic servant leadership is critical in working with members of disadvantaged societies.

Diverse studies have examined several components of emphatic leadership on distribution within the pharmaceutical sector and in other contexts. Amelia *et al.* (2020) undertook a study that examined the influence of servant leadership, amongst other types of leadership, on the market performance within the Indonesian pharmaceutical industry. The study was undertaken through a survey design in which structured questionnaires were used

to extract data from 180 sales managers within the Indonesian pharmaceutical industry. The hypothesis of whether servant leadership influences market performance within the Indonesian pharmaceutical industry was examined using the Partial Least Square (PLS) method. The study found that servant leadership had a positive and statistically significant influence on the market performance aspects of the Indonesian pharmaceutical industry.

Diverse aspects of emphatic servant leadership were found to influence the market performance, including leaders positioning themselves as friends to the staff members. This friendliness leads to the creation of trust aspects and information sharing between staff, leading to increased organizational efficiency. The study broadly evaluated leadership and its impact on the pharmaceutical industry but failed to analyse specific types of empathic servant leadership and their effect on pharmaceutical industry processes such as distribution, which the current study will endeavour to investigate.

In their study, Ienna *et al.* (2021) examined whether high levels of empathy and knowledge about the environment resulted in enhanced pro-environmental behaviour levels in Australia. Their study utilized a quantitative cross-sectional design, where 878 participants filled in the questionnaire, but only 610 responses were in the final survey. The study aimed to determine whether psychological attributes, such as affective and cognitive empathy, drive people to demonstrate pro-environmental behaviours. At the same time, they aimed to advance the ongoing discussion on the relative significance of encouraging empathy. Ienna *et al.* (2021) analysed the data using linear regression to find the correlation between the variables under study. The findings revealed that verifiable objective knowledge strongly predicted pro-environmental behaviours and attitudes. Moreover, they found a positive correlation between empathy and environmental behaviours and attitudes, but noted a disconnect with respect to empathy's affective and cognitive aspects.

Based on the multivariate analyses, knowledge had a stronger correlation with pro-environmental behaviour and attitudes after the study controlled for individual variations in affective and cognitive empathy. Such findings show that fostering empathy may not be the primary way of addressing the present crisis in environmental conservation matters. Indeed, this study is relevant to the current study as it measures the cognitive and affective forms of empathy and whether high levels of empathy could enhance environmental sustainability. Although this study addressed the role of empathy in enhancing environmental sustainability, it was not within the context of the pharmaceutical sector and it targeted an Australian population.

Regarding the pharmaceutical transport and logistics operations, Knop (2019) undertook a study examining the role of empathy within the context of Poland. The study was based on structured questionnaires and analysed through quantitative data analysis techniques. The study found that empathy was critical to the performance of the pharmaceutical transport and logistics operations using descriptive statistics. The empathy aspects that impacted the performance of pharmaceutical transport and logistics included treatment of the customers as individuals, provision of services that are convenient for each client, payment of full attention to the client, and recognition of customer needs (Knop, 2019). The study only focused on the role of empathy in Poland's pharmaceutical industry and service quality but failed to address the distribution channel. The current study will address the latter based in the informal settlement areas in Nairobi.

The role of empathy on the pharmaceutical distributors was further examined in a study in Ethiopia. In this context, Worku (2020) examined customer satisfaction levels within the pharmaceutical import and distribution aspects. The study deployed the explanatory research design and collected data using structured questionnaires. The study found that empathy in terms of access, communication, and customer understanding positively impacted

pharmaceutical import and distribution in Ethiopia. The study only focused on Ethiopia. The current study's objective is to understand how the pharmaceutical distribution channel in Nairobi is affected.

When examining the influence of service quality on the pharmaceutical wholesalers, Barnard (2019) investigated the impact of empathy on service quality. The survey-based study collected data through structured questionnaires for pharmaceutical wholesalers in South Africa. Several emphatic characteristics influenced the service industry within the pharmaceutical wholesalers in South Africa. Amongst the empathy metrics impacting the service quality within the pharmaceutical wholesalers include fulfilment of specific business requirements, ease of reaching customer care, interest in solving product-related problems, and genuine interest in solving customer problems. The survey study only analysed the business process management aspects and not human resource-based factors, which the current study investigated to understand how they impact the pharmaceutical distribution supply chain. Although the study focused on some empathy metrics, it did not specify which form of empathy they were, a gap this study sought to fill.

Within the context of the pharmaceutical retail businesses within Nairobi City County, Gathungu (2018) examined the role of quality of service delivery and performance of the pharmaceutical retail businesses. Some of the empathic servant leadership qualities were examined within the performance of the pharmaceutical retail companies in the city county. The study used a cross-sectional descriptive research design and collected data from 45 pharmacies operating in Nairobi. The study found that various emphatic characteristics influenced the performance of pharmaceutical retail businesses. They include dedication to customers, individual attention, tailor-made solutions, and focused attention to customers. The study found that empathy had a statistically significant influence on the performance of pharmaceutical retail businesses. The study focused on the entire Nairobi region and the

service delivery system but failed to identify specific regions, such as low-income areas, which the current study investigates.

Some gaps in the literature are evident in the studies that focused on empathic servant leadership, particularly in the conceptualisation of empathy and the context these studies were placed. For example, Amelia *et al.* (2020) failed to analyse specific empathic servant leadership forms and their effect on pharmaceutical industry processes. Further, Barnard (2019)'s survey study only focused on business process management aspects, not human resource-based factors. Other studies, such as Chen *et al.* (2020), Worku (2020), and Knop (2019), only focused on the role of empathy in the sustainability of the pharmaceutical sector in their respective countries. Furthermore, all these studies, except Ienna *et al.*'s (2021) study conceptualised empathy in the context of service delivery. The researchers were not concerned with whether the form of empathy displayed could impact the delivery of quality services. They also did not address how the distribution channel is affected. Although Ienna *et al.* (2021) study was the only one that went further to measure two forms of empathy empirically, it was not in the context of the pharmaceutical sector, and the research was based in Australia. Therefore, the current study's objective was to understand how the sustainability of the pharmaceutical distribution channel in Nairobi City County is affected by empathy as an attribute of servant leadership. It investigated how empathic servant leadership could help in addressing challenges arising among pharmaceutical distributors in Nairobi County.

### ***Ethical Servant Leadership and Sustainability***

Ethical servant leadership is critical to the sustainability of pharmaceutical distributors (Ullah *et al.*, 2021). Liden *et al.* (2008) generated nine dimensions which include; stewardship, emotional healing, and empowerment, that acted as constructs to evaluate and understand servant leadership effectively. From the study, being ethical is one of the dimensions of servant leadership that observes leaders as being honest and trustworthy.

Further studies supported the dimensions generated, and they increased to include Ehrhart's (2004), Liden *et al.*, (2015), and van Dierendonck and Nuijten (2011). Thus, the studies supported the need to select and focus further research on ethical servant leadership as one of the possible parameters for achieving sustainability.

Additionally, the ethical servant leadership enables the leader to conduct their businesses ethically, leading to low conflict with regulatory authorities and higher stakeholder management aspects (Zargar & Sousan, 2019). This helps in the sustainability of the business operational aspects, such as distribution over a lengthy period. The role of ethics in the servant leadership has been noted by diverse scholars, including Shetty *et al.* (2021), and Hoch *et al.* (2018), amongst others. According to Shetty *et al.* (2021), ethical servant leadership relates to how the servant leader will incorporate an ethical climate in the workplace.

For this study's purpose, ethical servant leadership was conceptualised using Liden *et al.* (2008), Ullah *et al.* (2021), and Dodd *et al.* (2018) views. Liden *et al.* (2008) view ethical servant leaders as leaders who behave ethically. Ullah *et al.* (2021) add that ethical servant leadership treats followers with fairness, honesty, and transparency. Koodamara *et al.* (2021) and Ullah *et al.* (2021) emphasise the need for organisations to create an ethical climate for their businesses. Further, Dodd *et al.* (2018) consider ethical leadership within the context of servant leaders, leading to the formulation of morally reasoned decision-making, development of value-based leadership, and the creation of an environment of honesty, fairness, respect, and trust aspects. They also noted that ethical leaders demonstrate stewardship, which is the readiness to be responsible for the larger organisation and demonstrate service to others instead of displaying self-interest or exercising self-control (Dodd *et al.*, 2018). Thus, the current study measured the construct using the indicators of ethical values, stewardship, and ethical climate.

The ethical climate refers to the way individuals within an organization are able to navigate through diverse morally challenging situations and make morally right decisions. According to Ullah *et al.* (2021), ethical climate refers to the creation of an organization that meets the legal requirement in the organization and has high compliance levels with ethical issues. On the other hand, Koodamara *et al.* (2021) assert that ethical climate refers to the presence of shared perceptions amongst the employees on the practices, procedures, and behaviours that get rewarded, encouraged and supported within a particular setting. In this context, Koodamara *et al.* (2021) view the ethical climate to constitute three components: instrumentalist attitude, principled attitude, and caring attitude.

There are also varied definitions of ethical climate. In this context, Yasin (2020) views ethical climate to refer to shared perceptions over what is ethnically acceptable behaviours amongst a set of people. Avcin *et al.* (2021) further noted that ethical climate refers to the shared understanding of the people within a work environment regarding the organizational procedures, policies, and practices that have some moral consequences. Scholars who have linked servant leadership with the fostering of an ethical climate include Shetty *et al.* (2021), Haq *et al.* (2021), and Ullah *et al.* (2021).

The issue of ethics is vital to the pharmaceutical industry globally. The ethics required in servant leadership and their influences on the role of the promotion of drugs on pharmaceutical sustainability have been raised even in developed countries. In this context, Goupil *et al.* (2019) examined the role of gifting practices amongst French pharmaceuticals and their negative influence on the prescription aspects that affect the sustainability aspects of the pharmaceutical distributions. The study was undertaken within France. The study used a retrospective approach with the data retrieved from the National Health Data System (NHDS) database. The respondents included 41, 257 GPs with a minimum of five registered patients and exclusively worked in the private sector.

The role of gifts was examined in the drugs prescription of the medical doctors and the ethical concerns it drew. In this context, the study noted that the medical practitioners who received the pharmaceutical gifts were costlier and had poor drug efficiency indicators. The study noted that gifts could be extended to the medical practitioners by the pharmaceutical sector through sponsored continuing medical education, sponsored courses with key influencers, and sample delivery that overall work to change the prescribing patterns of pharmaceutical products. The change in the prescribing pattern occurs due to the drug firm getting a favourable image and being given priority over competing pharmaceutical service providers.

The ethical challenges requiring ethical servant leadership within the pharmaceutical sector were further explored by Koiri (2018) with respect to the Indian context. The study looked at the practices of personal selling as a means of pharmaceutical distribution. The study relied on secondary data, and the researcher used the literature review method to collect data, and analysis was through content analysis. The study found possible conflict of interest between the pharmaceutical distributors and prescribing medical staff when promotional materials are provided to the medical staff. The study found that the provision of promotional pharmaceutical gifts to the medical staff may create a conflict of interest with respect to the consequent influence of such promotional gifts, to the prescription behaviours of the medical staff.

The need for ethical considerations with respect to the pharmaceutical distributors was further examined in a study by Alssageer and Kowalski (2021), who used qualitative analysis, particularly content analysis from reviewed literature, to examine the persuasive techniques used by the pharmaceutical distributors within the Australian context. The study examined the promotional behaviours associated with Pharmaceutical Company Representatives (PCRs). The study found that pharmaceutical promotional activities can be

used to alter the prescribing behaviour of medical practitioners, thus impacting the pharmaceutical distributorship sustainability aspects.

The study found that the gifts such as educational and non-educational gifts, free sponsored education conferences, and free drug samples could be used unethically to influence the medical practitioners prescribing behaviours and practices. The main methodological gaps in these studies were that they relied on secondary data to make their conclusions. Furthermore, the discussion on gifting was based on the international context in the pharmaceutical sector. The current study sought to fill these gaps using a quantitative research design, focusing on Nairobi City County's pharmaceutical distributors.

The ethical concerns of some of the marketing procedures of the pharmaceutical companies and their impact on pharmaceutical distribution were further explored by Khazzaka (2019) in a study based in Lebanon. The study was cross-sectional, and the researcher collected data using self-administered questionnaires. The researcher used a non-probability sampling method. The study targeted 364 practicing doctors working in Lebanon, but only 282 responded. The researcher analysed the data statistically using IBM SPSS statistics. He used Cramer's  $v$  and Chi-square tests to find a correlation and the Spearman test to measure the direction and strength of the association between variables (Khazzaka, 2019).

The study found that the medics responding to the data instrument considered accepting gifts as a non-ethical practice. The study found that pharmaceutical promotion activities in distribution influenced pharmaceutical products' utilization. The study raised ethical concerns with the physician-targeted promotions such as free samples, journal advertisements, printed literature and diverse gifts impacting the acceptability of the diverse pharmaceutical products supplied to the practitioners. Although the study focused on ethical concerns arising from the strategies physicians use to prescribe medication, it did not address

them in the context of pharmaceutical distributors in Kenya, which is a gap this study sought to fill.

At the regional level, ethical issues in the pharmaceutical industry are widely evident. The ethical considerations in the promotional gifts in the sustainability of the pharmaceutical distributorship were examined in a study by Ergete (2018) that looked at the role of promotional practice on the sales performance of pharmaceutical importers in Addis Ababa. Data was collected using structured questionnaires and various aspects of ethical concerns of promotional materials raised. The researcher employed qualitative and quantitative research design methods. Sampling was done using systematic random sampling. The respondents were 60 private importers of pharmaceuticals, and they were set up in Addis.

The researcher then analyzed the data using SPSS where descriptive and inferential statistics were generated (Ergete, 2018). In this context, amongst the aspects that were noted should be exercised ethically included the provision of drug samples for promotional aspects, provision of promotional giveaways, sponsorship of continuous medical education, use of influential Key Opinion Leaders (KOL), provision of personal gifts to the physicians, and provision of the patient care gifts. The roles of these various promotional materials and their influence on the prescription aspects of pharmaceutical products need to be managed ethically by pharmaceutical leaders to ensure their sustainability. Though the researcher used an appropriate methodology for the study, the research was based in Addis. To address this contextual gap, this study focused on the impact of ethical servant leadership on sustainability in Kenya.

In Kenya, ethics and malpractice by doctors and pharmaceuticals are rampant. In a qualitative study by Onyango *et al.* (2018), the issue of drug access is strongly linked to the lack of ethical consideration among doctors in public hospitals. The researchers interviewed 84 patients using a household survey who needed to have suffered from Non-Communicable

Diseases (NCDs). The research found that many doctors in public hospitals also operated their own private practices and thus preferred to refer patients to their private practice rather than provide them access to medication in the public hospitals.

Doctors would often prescribe medication they knew was not readily available at the public hospitals and refer them to the hospitals they owned for those drugs. Similarly, some pharmacists would fail to request medication in public hospitals so that they could direct the patients to their pharmacies and sell the medicines at a premium price. Failures in the system linked to poor leadership and limited concern for conflict of interest also contribute to the drug shortage issue in public hospitals. The issue of monetary value over human life has also been a topic of debate in Kenya owing to the several cases of health worker strikes.

In their study, Adam *et al.* (2018) highlighted concerns about lack of medical access due to prolonged strikes by health workers. Their study referenced the breakdown of the medical sector in Kenya owing to a strike between 2016 and 2017 by not only the doctors but the pharmaceutical sector in the country. The Kenya Medical Practitioners Pharmacists and Dental Union made an official statement warning Kenyans to brace for tough times ahead and not to expect emergency services. The strike led to high mortality across the country. According to Machoka *et al.*, 2021, the practices of strategic leadership were most related to ethical practices in the Kenyan pharmaceutical industry. However, failure on the leader's part can also influence the ethical practices in pharmaceutical manufacturing and distribution. All these studies did not address the impact of leadership on sustainability among pharmaceutical distributors, a gap this study seeks to fill.

The issue of ethics in the pharmaceutical industry greatly affects patients across the globe and limits access to life-saving medication. The role of ethics on pharmaceutical sales representatives was examined in various studies across literature in the international, regional, and local context. Similarly, leaders play a major role in determining ethical

practices in the healthcare sector and, in turn, patient access to drugs. However, one area lacking across all of these studies is the role of servant leadership in influencing ethical practices in the sector. Accordingly, some methodological and contextual gaps in the literature are evident in the studies that focused on ethical servant leadership.

Studies by Goupil *et al.* (2019), Koiri (2018), and Alsageer and Kowalski (2021) relied only on secondary data to make their conclusions. Furthermore, their findings on gifting were based on the international context in the pharmaceutical sector. Although Khazzaka (2019) and Ergete (2018) focused on ethical concerns arising from the strategies used in the pharmaceutical sector, they did not address these issues in the context of pharmaceutical distributors in Kenya. Further, Onyango *et al.* (2018) and Adam *et al.* (2018) failed to address the impact of ethical servant leadership on sustainability among pharmaceutical distributors. Thus, the study sought to fill these gaps by using quantitative methodology. The study focused on the effect of ethical servant leadership on the Kenyan pharmaceutical sector.

### ***Persuasive Mapping and Sustainability***

Servant leadership by persuasive mapping is important in achieving sustainable business. The persuasiveness of servant leadership leads to these leaders being able to persuade their customers in respect to diverse characteristics, including prices, quality, and means of delivery aspects. According to Woo (2018), persuasive mapping refers to the capacity of the servant leader to use sound reasoning through the mapping of shared ideas and concept visualization of common goals to influence other individuals to act towards a common goal. On the other hand, Bell and Hewitt (2021) view persuasive mapping as a leader's capacity to make compelling arguments that motivate their followers to undertake specific tasks. Persuasive mapping thus enables the leaders' followers to buy into the reasons provided by the leader and leads to them being willing to engage in the leaders' decisions.

Rashid *et al.* (2019) posit that persuasive mapping composes various components including use of sound logic in articulating ideas and use of articulation of ideas in persuading the followers to accomplish given tasks. In this context, persuasive mapping enables the mapping of issues together with their larger opportunities for the entire organization; thus, providing compelling reasons for the followers to engage in the delegated tasks by the leader. In this context, Rashid *et al.* (2019) note that in persuasive mapping, leaders can envision the future and successfully champion the task-oriented behaviours amongst their followers. For this study's purpose, persuasive mapping was conceptualised as a leader's ability to use persuasion skills, sound reasoning to analyse a problem, and provide followers with a direction on how to solve those challenges (Page & Wong, 2000; Barbuto & Wheeler, 2006; Rashid *et al.* 2019; Mansyah & Rojuaniah, 2021).

Persuasive mapping is evident throughout the pharmaceutical industry in the international context. Elements associated with persuasive mapping were also explored with respect to the pharmaceutical sector sustainability in various parts of the world. In this context, Altawalbeh *et al.* (2020) undertook a study that examined the role of pharmaceutical promotions within the Jordanian context. The persuasive mapping was examined in this regard in Jordan. The study adopted a cross-sectional research design with the population of the study being physicians prescribing the drugs and hence maintaining the sustainability of the pharmaceutical distributorships. The study found various persuasive mapping metrics being critical in the sustainability of pharmaceutical distributorships within the context of Jordan. These aspects included the trustworthiness of drug information provided by the medical representatives about their drug, helpfulness of the talks undertaken by drug companies, and the talks provided by the drug companies as great ways of learning new product information.

The role of continuing medical education as the persuasive mapping was further explored in a study by Kabir *et al.* (2021), who examined the attitude of patients and physicians with respect to the pharmaceutical promotion components as means of pharmaceutical distributor sustainability aspects. The study was undertaken in Malaysia. The study undertook judgemental sampling process to get a sample of six medical professionals who were used as the sample members. The study found that continuing medical education was a great way of enhancing professional knowledge through receiving product information and new drug information.

Diverse scholars have also examined the role of persuasive mapping components in the pharmaceutical industry at the regional level. In this context, Nanteza (2018) undertook a study examining the promotional strategies and performance of pharmaceutical distributors in Uganda. The study deployed a cross-sectional survey design and used a target population from 175 pharmacies in Kampala, Uganda. Data was collected using structured questionnaires. Nanteza (2018) found that persuasive mapping techniques led to the performance of pharmaceutical distributors in various ways. In this context, the study found that the persuasive mapping items that drove the performance of the pharmaceutical distributors in Uganda included the information given by medical representatives being useful, the information provided by the pharmaceutical sales representative influencing the decision to buy, and the usefulness of the information provided by the continuing medical education. The results by Nanteza (2018) with respect to the role of persuasive mapping on the performance of the pharmaceutical sector were similar to those by (Hailu *et al.*, 2021).

Hailu *et al.* (2021) undertook a study in Ethiopia in which the pharmaceutical marketing mix was examined with respect to the prescription behaviours of physicians. Amongst the dynamics that were examined were components of persuasive mapping. The study deployed mixed methods sequential explanatory design and collected data from 136

physicians working in both public and private hospitals. Quantitative data analysis was undertaken. Various components of persuasive mapping like those of Nanteza (2018) exposed in the Ugandan context were also found in the Ethiopian context. In this regard, Hailu *et al.* (2021) indicated that participation in company sponsored continual medical education, acquisition of information from medical representative, and the provided information played a part in the sustainability of the product distribution in terms of the continuous prescription of the pharmaceutical products.

In Ethiopia, Yohannes (2017) undertook a study examining pharmaceutical promotions concerning sales promotional activities. Persuasive mapping was undertaken in the study. The study used the descriptive research design and a target population of 61 importers. Regarding persuasive mapping, the study found that drug representativeness is the source of drug information. On the other hand, the study noted that the promotional aspects have persuasiveness aspects through improving information flow to the service provided on the drug aspects. The study found that Continuing Medical Education (CME) is positively correlated with the sales of pharmaceutical products. This was attributed to the CMEs positively influencing the target audience into the consumption of pharmaceutical products by highlighting the company offerings.

Still in Ethiopia, Sintayehu (2017) examined elements of persuasiveness mapping on the pharmaceutical promotional effects by pharmaceutical companies. The study adopted a quantitative data analysis procedure and used a target population of 400 respondents. There are various ways in which pharmaceutical sales representatives lead to pharmaceutical distributorship sustainability. This includes providing accurate and useful drug information, provision of continuing medical information in the organization, and utilization of drug sample to demonstrate the potential benefits of the drugs to the potential users.

In Kenya, the reviewed literature indicated that there is limited research on the role of persuasive mapping in the pharmaceutical industry and that the issue of persuasiveness and sustainability in the pharmaceutical industry is a novel area of study in Kenya. Karanja *et al.* (2021) in their study on servant leadership using 400 respondents utilized explanatory and descriptive research designs whereby some aspects of persuasive mapping were measured. The researchers collected data using questionnaires that were analyzed using SPSS Version 26. They analyzed the data using descriptive statistics, regression analysis, and Pearson's correlations. They found that leaders with high levels of persuasive mapping were better at conceptualizing issues and compelling others to do things.

In a research synthesis by Kennedy *et al.* (2022), the role of pharmaceutical companies in creating access to Pre-Exposure Prophylaxis (PrEP) medication was overlooked in Kenya. Similarly, the willingness to pay for the product was also low in the country at USD 5 per month, making it difficult to meet the financial sustainability requirements for a PrEP pharmacy model (Kennedy *et al.*, 2022). Manji *et al.* (2020) identified leadership issues related to management, personnel, and supervision as contributing factors to the challenge of access to cardiovascular medication. They highlighted the leadership role within the Ministry of Health in Kenya and AMPATH as negatively impacting the supply chain in the region. As such, leaders in the region ought to increase distribution efforts through persuasiveness to increase access to medication in Kenya. In this respect, persuasive mapping would play a critical role in increasing awareness of PrEP and cardiovascular medication and its easy access to the pharmaceutical industry in Kenya.

Across the various studies reviewed on the role of persuasive mapping on sustainability, it is clear that the construct as an attribute of servant leadership has potential to explain organizational outcomes such as sustainability and therefore relevant to the operation of the industry. What is however noted from the studies as a weakness among the studies

stems from the manner in which it has been conceptualized and measured in empirical work. Much attention has been given to operationalizing the construct as part of business strategy to drive business performance as opposed to conceptualizing it at a behavioral level to adopt it as a tool for application by leaders in influencing follower behaviours. In addition, in the context targeted for the current study, few attempts have been made towards conceptualizing this construct as a standalone dimension for servant leadership in explaining how it stands to predict organizational outcomes when operating in a leadership context.

### ***Altruistic Servant Leadership and Sustainability***

Servant leaders are often selfless, prioritizing the greater good above their own needs and requirements. This is considered good for the sustainability of the businesses in the context that the servant leader will be able to sacrifice their needs in return for those of the businesses. Altruistic behaviours are characteristics of servant leadership (Darvishmotevali & Altinay, 2022; Pressentin, 2022; Tantri *et al.*, 2022). According to Huang *et al.* (2018), altruistic behaviours refer to those behaviours that are intentional and voluntary, which are undertaken with a view of enhancing the welfare of other persons without any anticipation for reciprocal payments.

Yang *et al.* (2020) further viewed altruistic behaviours as the process of sacrificing one's resources for the benefit of other people without any expectation for rewards. Yang *et al.* (2021) assert that altruistic behaviours relate to the optimization of society's wellbeing without any expectation for external benefits. Li *et al.* (2019) assert that altruistic behaviours are defined by good intentions to help others, lack of expectations for material rewards, and voluntariness of the actions. Tomaszek and Lasota, (2018) further assert that the altruistic behaviour refers to the conscious and voluntary action to the benefit of the larger society without any expectation for any reward aspects. The current study used Page and Wong

(2000) and Barbuto and Wheeler (2006) conceptualizations of servant leadership to derive the constructs to be measured. They combined the 10 characteristics of Spears (2010). The constructs that were measured for this study included service to others, no expectation of reciprocity, and prioritising other's interests above one's own.

The altruistic behaviours within the context of the pharmaceutical sector follow similar cycles across the globe. One of the methods in which altruistic behaviours are practiced in the pharmaceutical sector is the provision of free drugs to the underprivileged. This has been noted by scholars such as (Harindranath & Sivakumaran, 2021; Albarq & Suleiman, 2021 sort alphabetically ; Baker, 2021) Drugs provided for donations may sometimes have a short shelf life, and they would otherwise go to waste if not utilized within specific timelines.

The pharmaceutical sector has been noted to undertake diverse sponsorship in trainings and conferences for specific target groups. Scholars who have considered sponsorship as an altruistic behaviour include Lau *et al.* (2018), Vishavadia and Solanki (2021) as well as (Bero & Parker, 2021). The sponsorship could be with respect to the training materials such as books, sponsorship on the logistics aspects such as travel arrangements and sponsorship with respect to the tuition fees. Pharmaceutical companies have also been noted to offer diverse free medical camps. This was noted by Vishavadia and Solanki (2021), Vishavadia and Inumula (2020), and Dhonden *et al.* (2020) amongst others. The pharmaceutical companies would supply drugs to such medical camps for free and other materials such as doctor's lab coats, stationery, and writing materials, amongst other items.

Diverse scholars have examined the role of altruistic servant leadership within pharmaceutical distributorship in the international context. In this context, Hulme *et al.* (2019) undertook a study that examined the motivation of drug sourcing of pharmaceutical distributors within the Australian context. The study adopted a mixed methods approach that

relied on both quantitative and qualitative data collection and analysis methods. The role of altruistic behaviours was examined as part of the motivation of the pharmaceutical distribution aspects. The study found that 61% of the respondents were motivated by altruistic considerations in their pharmaceutical distributorship. Although it focused on a critical component of servant leadership, the study did not address how this leadership element impacted sustainability among distributors.

Within the context of the Jordan pharmaceutical sector, Sharabati (2018) undertook a study that sought to examine the corporate social responsibility influence on the sustainability aspects of pharmaceutical distributorship. Within the study, altruistic behaviours and their influence on pharmaceutical distributorship were examined. The data was collected from 116 managers working within the Jordan pharmaceutical sector using structured questionnaires. The study found that there were diverse altruistic behaviours that impacted the sustainability of the pharmaceutical sector. These altruistic behaviours included hiring people with special needs, supporting of education activities in the community, company building of the physical infrastructure within the communities, and pharmaceutical distributorship of eco-friendly products.

Similar to the study by Sharabati (2018) that focused on the Jordanian pharmaceutical sector, Bataineh *et al.* (2018) also undertook a study focusing on Jordanian pharmaceutical companies. The study was undertaken amongst eleven pharmaceutical sectors, and data collected using structured questionnaires. The study found that diverse altruistic behaviours were evident within the pharmaceutical sector, including provision of donations, scientific research support, seminars support and contribution to environmental protection aspects. Although these studies focused on the role of altruistic behaviours on enhancing sustainability in the pharmaceutical sector, the conceptualization failed to indicate how the application of altruistic behaviors by the leaders brings about organizational outcomes

through interaction with followers. Thus in this study, the researcher conceptualised the operation of altruism to bring about sustainability when follower behaviour attributes of social innovation are introduced into the relationship.

Within the context of Ukraine, Ahmed (2020) undertook a study that sought to examine corporate social responsibility within the context of Ukrainian pharmaceutical companies. The study examined the role of altruistic behaviours within this sector. The study was a Meta data analysis that extracted information from published literature on pharmaceutical companies in Ukraine. The study found that amongst the altruistic behaviours that were executed in the sector were free medical insurance for poor people and free medical equipment and medicines to the hospitals within the low income areas. The study noted that altruistic behaviours contributed to the social development aspects within the informal settlement areas.

In the regional context, the practice of selflessness and altruism are also evident across the literature. In South Africa, the issue of mandatory vaccination raised issues concerning altruism and ethics (Moodley, 2022). In their study, healthcare practitioners and scientists have taken a strong stance supporting the mandatory vaccination of citizens owing to what they consider altruistic motivations. However, these issues raise concerns over civilian rights, creating a conflict between altruism and ethics. Leaders play a vital role in determining the outcome of healthcare access and medicines. As such, the concern for healthcare for low-income earners in Africa has prompted the African Union to create programs geared at increasing access to affordable healthcare through the African Medicines Regulatory Harmonization (AMRH) (Ndomondo-Sigonda *et al.*, 2020). The altruistic motivations behind these initiatives affect access to medication by increasing distribution and lowering the cost of medication. These efforts endeavor to lower the burden of healthcare in

Sub-Saharan Africa as well as regions in Mauritius, Seychelles, Madagascar, Rwanda, Kenya, Comoros, Djibouti, Eritrea, Ethiopia, and Sudan.

Similarly, altruistic leadership motivations are evident in the international grants for pharmaceuticals in African countries. In their research, Kerr et al. (2021) discuss grants to Tanzania, Ghana, Uganda and Zambia for medication and support for health workers in the region. These altruistic motivations greatly influence medication availability to many low-income households in the region. As such, the issue of altruism on sustainability in the pharmaceutical industry is evident throughout literature. Although all these studies focused on the role of altruistic behaviours in enhancing sustainability in the pharmaceutical sector, they have been criticised in terms of the relevance of the findings in terms of their applicability to developing country contexts like Kenya.

In the Kenyan context, there are few studies on the role of altruism in leadership. Leaders in public offices play a vital role in influencing the pharmaceutical industry. As such, it is crucial to explore the altruistic motivations of leaders and their implications on the pharmaceutical sector. In Kenya, servant leadership in public service was linked strongly to altruistic calling (Karanja *et al* (2021). Under servant leadership, the study revealed that altruism was the fourth motivating factor for public participation in the country. In their research, Karanja *et al.* (2021) found that the leading motivation factors for servant leaders included providing a model to followers, humility, and empathy. In view of this, altruism may have some connection with the outcomes of leadership in the pharmaceutical sector. However, the study did not provide evidence for such linkage between altruism and organizational outcomes both at the abstraction and empirical levels.

Some conceptual, contextual, and methodological gaps in the literature are evident in the studies that focused on altruistic servant leadership. The conceptualisation of altruism applied in the studies adopted an approach that measured it at corporate level of analysis and

failed to operationalize the construct from a behavioural lense so as to offer explanation as to how it may be adopted at the leadership practice level in the process of influencing followers towards organizational outcomes. Thus, in the conceptualization, the behaviours considered as indicators of altruism such as mandatory vaccines, would be interpreted to relate more with organizational strategy in the realms of CSR. In addition, even though the studies have shed some light on how altruism may influence sustainability in a pharmaceutical industry context, the generalizability of the findings is limited due to the weaknesses associated with the philosophical underpinnings of the researches embracing constructivism paradigm which was implemented through qualitative designs that only used qualitative data.

### ***The Mediating Effect of Social Innovation***

The social innovation aspects are critical to the sustainability of any business. In this context, Bhatti and Prabhu (2019) assert that social innovation refers to the utilization of innovative ways to handle social needs from a practical perspective. Social innovation is, therefore creative means of solving practical problems and a creative means of solving practical problems. Servant leadership has been linked with aspects of innovation. Social innovation is the application and development of improved processes, activities, services, and initiatives crafted to solve economic and social challenges that communities and individuals encounter (Goldenberg, 2004; Neamtan, 2003; Tanimoto & Doi, 2007).

Mulgan *et al.* (2006) add to the discourse by claiming that social innovation is the process of generating solutions to enhance people's living standards by associating socially with novel needs. For the purpose of this study, social innovation was conceptualized as utilizing innovative ways to address social needs practically, improve social relations, and empower individuals and the overall community. Thus, the study sought to measure the following constructs: enhancing need satisfaction, improving social relations, and individual and community empowerment (Bhatti & Prabhu, 2019; Mulgan *et al.*, 2006 ).

From an international perspective, literature has explored the issue of innovation in the pharmaceutical sector. Karatepe and Aboramadan (2020) undertook a study to examine the role of innovation among servant leaders in the hotel sector. The study collected the data using structured questionnaires and undertook quantitative data analysis. The study found that servant leadership creates the environment for team members to exercise creativity and innovative practices in their work undertakings. Similar to Karatepe and Aboramadan (2020), Khan *et al.* (2020) examined the leading aspects of innovation in the context of servant leadership. The study was based in Pakistan and used data from 258 employees employed within software companies. Data analysis was undertaken using Structural Equation Modelling (SEM). The study found the servant leadership creates an element of trust in the work environment which further leads to innovative practices.

Li *et al.* (2021) also undertook a study examining the various ways servant leadership led to the development of innovative practices in the service sector. Data were collected from the hotel sector in China, and 229 respondents were utilized in the data collection process. The study found that servant leadership can lead to innovation by enhancing customer orientation among team members. The results of this study are consistent with those of Ye *et al.* (2019), Mostafa (2021), Yuan *et al.* (2020), Luu (2019), and Lei and Guoqing (2020), who also linked servant leadership with the customer orientation aspects.

In this context, Yuan *et al.* (2020) examined the role of servant leadership in creating the employee customer orientation perspective. The study found that servant leadership cultivates a people-centered leadership with altruistic behaviours and empathy to the stakeholder needs, including customer needs, leading to customer-oriented behaviours. The study further finds that servant leadership vitalizes the team members leading to a domino effect on customer orientation and other aspects of work.

The determinants of the sustainability and innovation of the pharmaceutical distributorship were further examined by Yong-Ha and Young-Taek (2020) in a study on the pharmaceutical distributorship. The study was based in Korea and collected data from 319 questionnaires. The study found that fair-trade practices were critical to the sustainability of the pharmaceutical distributorship aspects. On the other hand, Kireyeva *et al.* (2021) undertook a study that examined the diverse factors influencing the pharmaceutical distribution industry within Kazakhstan.

Cai *et al.* (2018) also undertook a study based in China that sought to link servant leadership and innovation. The study was undertaken within the technology sector in China, and data was collected from 288 employees in this sector. The study found that servant leadership leads to innovation through prioritization of employee development in task efficiency, community stewardship, and self-motivation aspects. Servant leadership was also found to increase employee innovation aspects through creating of a higher sense of work purpose and commitment levels.

In the regional context, the issue of innovation and sustainability in the pharmaceutical sector in Africa is a topic of great value to understanding the pharmaceutical sector. Steele *et al.* (2020) found that Africa has long relied on Asia and India for pharmaceuticals in their research. Their study found that the Covid-19 Pandemic shed light on the over-reliance on other countries due to the acute shortage of Personal Protective Equipment (PPE) such as gloves, masks, garments, and medication for Covid-19 management. The pandemic caused research to probe into the sustainability of pharmaceutical manufacturing in Africa and revealed the challenges, such as the lack of support from the global community by denying access to components such as praziquantel (Steele *et al.*, 2020).

The issue of sustainability in Africa's pharmaceutical production is further impeded by the region's dependence on donors for medicines and finances (Steele *et al.*, 2020; Ahen & Salo-Ahen, 2018). Logically, the dependence on other regions for healthcare and pharmaceutical products has stunted the industry's growth. Ahen and Salo-Ahen (2018) also highlight the underdeveloped pharmaceutical market in Africa as an additional problem to sustainability. Moreover, the lack of financial muscle to venture into the large-scale manufacturing of medicines in the region creates an endless cycle of dependence. Overall, there is limited research on the issue of servant leadership in sustainability in Africa's pharmaceutical sector. As such, this study may contribute valuable insights into the topic.

There have been a few studies into the issue of sustainability and innovation in Kenya. In a cross-sectional study of 190 pharmaceuticals in Kenya, Machoka *et al.*, 2021 sought to determine the impact leadership styles have on performance innovation. In their study, they found that leadership relied on other factors to determine the success or failure of the pharmaceutical sector. As such, the impact of servant leadership on its own may not be adequate to decide on the trajectory of the pharmaceutical industry. In turn, the relationship between servant leadership and sustainability is not very direct within the pharmaceutical sector.

Similarly, innovative designs in the distribution of pharmaceuticals are recommended in many studies in Kenya (Kennedy *et al.* 2022; Manji *et al.* 2020). The distributions of certain medications and the challenges surrounding sustainability affect the dynamics of the industry. Currently, the region faces challenges in distributing certain types of medication, such as Pre-Exposure Prophylaxis (PrEP) medication and treatment of cardiovascular disease. For instance, Kennedy *et al.* (2022) found that while pharmacies are more readily accessible than hospitals in Kenya, the availability of PrEP medication was exclusive to hospitals as

pharmacists are not qualified to write prescriptions for medication, making it difficult for patients to access such emergency treatment.

As such, the issue of innovation comes into the spotlight when considering ways to overcome these challenges in the distribution sector. Similarly, Manji *et al.* (2020) found that the availability of cardiovascular disease treatment is limited to high-income areas and that there are major challenges with access to such medication in Kenya's supply chain. As with the issue with PrEP, Manji *et al.* (2020) highlight the need for innovative approaches to distribution networks in Kenya to ensure sustainability.

Having demonstrated the influence of servant leadership on innovation, other studies also demonstrate social innovation's influence on sustainability aspects to complete a causal mediation relationship. Kiplagat and Odollo (2021) undertook a study that examined the influence of strategic responses on the pharmaceutical firms within Nairobi City County. The influence of technology on the performance of pharmaceutical firms was one of the components examined in the study. The study adopted a descriptive research design and collected data from 119 pharmaceutical firms in Nairobi County. The study found that innovation impacts technology use, employee competencies, and data management, which are seen as the drivers of organizational performance. The study also noted that innovation led to the development of new products and services, reduction of delivery times, increase in information accuracy, improvement of product quality, improvement of stock management, and detection of sub-standard products, which further improved the performance of the pharmaceutical sector.

The literature reviewed on the role of social innovation supports the conceptual logic of the study that it has a close association with servant leadership. The empirical work reported has shown statistical evidence of this relationship. However, the studies, though insightful, have raised a number of gaps that raise a case for further conceptualization of the

role of social innovation in the context of a leadership process being applied to bring about organizational outcomes. It has been pointed out in the researches that the researchers have conceptualized and measured the construct either as a dependent or independent variables. Since by its nature it is constructed as a condition likely to emerge from an antecedent factor, its role as a mediating variable in a situation where leadership is deployed to influence organizational outcomes needs more clarity. Thus the mediating role of social innovation when servant leadership is in operation requires attention. This study therefore adopted social innovation as a mediating construct to investigate how it would affect an existing relationship between servant leadership and sustainability.

### ***Moderating Effect of Market Entry Barriers***

The aspects of market entry barriers could be taken to be grounded in the concepts of organizational theory. According to Maini (2020), organizational theory relates to the organizations are governed and operate to achieve organizational goals. Organizational theory is concerned with the productivity and efficiency of the organization based on how it is governed, enabling its performance, including sustainability aspects (Araja, 2020). The organizational reactions to market pressures are critical components of the organizational theory and the sustainability of the firm's business operations.

Legal factors, political factors, business competitors, technological changes, and customer preference changes amongst other aspects influence the business sustainability aspects. These factors impact the business processes and products differently, impacting the organizational sustainability aspects (Maini, 2020; Sylim *et al.*, 2018). Market entry barriers are thus proposed to moderate the effect of leadership on business sustainability due to servant leadership's empathic and altruistic nature, which make servant leaders especially mindful of their stakeholders.

In 2010, United Nations Industrial Development Organization (UNIDO) highlighted certain weaknesses in the pharmaceutical sector in Kenya. They include: a dominance of imports in the local market, lax and ineffective regulations, high levels of competition, high costs of production, and poor and unclear enforced standards of quality. Other challenges include inadequate infrastructure, lack of clear policy for expansion, and dependence on imported raw materials for manufacture among others (UNIDO, 2010). In view of this, firms seeking to enter the market will face related barriers.

Accordingly, barriers to entry are hindrances or obstacles that make it challenging for novel firms to enter a certain market; for example, start-up expenses, licensing and education needs, patents, and technology difficulties (Kotsios, 2014). In the last decades, the discussion on entry barriers has been heated as a result of which attempts have been made to understand it thus resulting to various descriptions of the concept of entry barriers (Coutoa & Barbosa, 2020). The two common perspectives of barriers to entry are industrial organization and strategic management views, where the former focuses mostly on structural features and how companies react to them (Coutoa & Barbosa, 2020). On the other hand, strategic management is inclined to the company and the activities it can engage in to improve or maintain its profits.

Usually, structural barriers are associated with structural features, such as demand and costs of the sector in which companies operate. The presence of such barriers is attributed to some market factors, such as government regulations and the presence of economies of scale (CFI, 2020). When a market has high economies of scale that existing firms have exploited, this deters new entrants. They also discourage new entrants if these companies can expend significant resources on research and development (CFI, 2022 ; Kotsios, 2014). Further, when companies have their own raw materials, they have the edge over their competition (Coutoa & Barbosa, 2020).

On the other hand, strategic barriers intentionally influence the behaviour of likely entrants to discourage their entry. Strategic barriers are evident through predatory or limiting of pricing when existing companies set lower prices to force or discourage opponents from entering the market (Kotsios, 2014; CFI, 2022). Moreover, firms that spend significant amounts on advertising deter new entrants. Further, if existing companies own licences or patents, new firms experience difficulty penetrating the market. Recognizing the mechanisms that can prevent entry into a market is critical, as such barriers can majorly affect an industry's profit and competition levels. For this study, the structural barriers that were measured include economies of scale, ownership of raw materials, high costs of R & D, and high set up costs (capital) (CFI, 2022). On the other hand, the strategic barriers that were measured include retaliation, predatory pricing, regulations, patents, and advertising (Kotsios, 2014; Coutoa & Barbosa, 2020).

Diverse scholars have examined market entry barriers within the pharmaceutical sector from an international perspective (Chitra and Kumar 2020, Newham *et al.* 2018, Maini and Pammolli 2020, Godman *et al.* 2018, Olk & West 2020). The international landscape is highly diverse from one region to another; thus, the market entry barriers in one region differ from those in another region across the globe. The various scholars explored different dynamics of the pharmaceutical sector and identified barriers in their respective regions.

In their study, Chitra and Kumar (2020) investigated the market structure of India's pharmaceutical sector and the factors surrounding its competitiveness. They found that India, which is one of the leading pharmaceutical markets in the world enjoyed significant benefits due to the high demand for drugs and the low cost of production, giving it a competitive edge globally. In their case study, the duo found that competition in India reduced entry barriers for pharmaceuticals in India. However, Chitra and Kumar (2020) identified the issues related to patent laws impacted the ease of entry into the pharmaceutical market. The study's major

shortcoming is that it did not provide a methodology section or any account of procedures for the study despite being published in an international journal.

Newham *et al.* (2018) also undertook a study that examined the market entry strategies within the context of the pharmaceutical industry in the United States. The study noted that while market entry is a one-off decision, it significantly influenced the pharmaceutical industry's success rates in the market of interest. The market entry strategies as a form of market dynamism were further explored within the context of the pharmaceutical sector in a study by Araja (2020) that examined pharmaceutical strategies generally. The study argued that diverse strategies could be deployed as market entry strategies, including direct importing process, contractual modes, and market entry strategy development. The study was undertaken in Latvia. Sylim *et al.* (2018) also undertook a study that sought to examine the influence of block chain technology on the detection of substandard and falsified drugs in pharmaceutical distribution.

In another study by Maini and Pammolli (2020), issues such as cost and regulatory policies deter market entry in the European market. This is a stark contrast to India's market where the low cost of production increased ease of access into the pharmaceutical sector (Chitra & Kumar, 2020). Notably, Maini and Pammolli (2020) highlighted the issue of External reference pricing (ERP) as a major deterrent to pharmaceuticals entering the European market. Their study explored the issues such as entry regulations and the inability to meet capacity requirements as part of the deterrents to market entry. Their research incorporated IMS data through a quantitative dynamic analysis of EMA-approved medications across Europe with a sample size of 481 patent-protected drugs\_(Maini & Pammolli, 2020). Maini and Pammolli's (2020) empirical analysis found that pharmaceuticals can adjust their entry strategies to overcome the challenges associated with

the market entry barriers. They proposed considering issues, such as the timing of entry and avoiding over-saturated markets.

Godman *et al.* (2018) also found that the issues of budgetary constraints pose an entry barrier to pharmaceutical companies. Their study explored the various challenges facing entry across the globe. They also highlighted that the lack of appropriate incentives for pharmaceuticals limits the interest in entry. The study employed a qualitative narrative review of the policies and their implications in their research. Godman *et al.* (2018) proposed weighing incentives for pharmaceutical companies to produce new drugs to fill unmet medical needs against worries about the desired costs for drugs and their possible budgetary impact in the UK, US, and most of Europe. The researchers believe that these approaches would mitigate some of the entry challenges in the pharmaceutical sector.

Olk and West (2020) evaluated the relationship of the pharmaceutical industry's structure and innovation. The study found that the pharmaceutical sector was highly dependent on collaborations and consortium to increase value creation and reduce overall costs. The study identified high initial investments as a major entry barrier for new entrants into the pharmaceutical sector. Olk and West (2020) used secondary data and sampled 30 of the largest pharmaceuticals globally and over 450 consortia. They employed a comparison and distinction approach and exploratory data analysis.

The duo established that the structure of the pharmaceutical sector necessitates investors to put in large upfront investments without any certainty of returns and often yielded benefits very little, making it less appealing from a business perspective. In the U.S for instance, new pharmaceutical products necessitated upfront investments of approximately +\$150–200 million along with a nine year waiting period for drug approval (Olk & West, 2020). Such issues deter new entrants and pose a major entry barrier into the pharmaceutical sector in the U.S. Moreover, the long waiting period for approval further exacerbates the

problem of market entry in the U.S market, making it unfavorable for new pharmaceutical companies or players.

When considering the entry barriers into the pharmaceutical sector, one can also consider the regional context. Several scholars have explored the market entry barriers of pharmaceuticals in the regional context, including Netsanet (2018), Godman *et al.* (2018), Ahen and Salo-Ahen (2018), and Chorev (2019). Netsanet (2018) undertook a study examining the distribution performance of pharmaceutical product distributors in Ethiopia. The study deployed a descriptive research design and collected data using structured questionnaires. The study examined the various business factors that influence pharmaceutical distributorship.

In this context, the study found that the factors that significantly influenced the pharmaceutical distributorship include financial capacity, transport outsourcing, information systems, donors and government relationships. Meanwhile, similar issues have also proven to be market entry barriers for pharmaceutical sectors in the regional context. Godman *et al.* (2018) explored the challenges facing pharmaceuticals with regard to entry barriers in Africa. They categorized African countries as Low and Middle Income Countries (LMICs) and highlighted this as one of the major entry barriers for pharmaceutical companies. In the regional context, Godman *et al.* (2018) found that African countries struggled with the high cost of medicines and limited access. In turn, these factors contributed to the entry barriers in South Africa.

Ahen and Salo-Ahen (2018) also explored the pharmaceutical sector in Africa with a keen focus on West, East, Central, and Southern Africa. Their research found that these regions were seriously lacking in establishing robust pharmaceutical business dynamics. Notably, there were serious issues of dependence on donors for emergency relief, especially during outbreaks such as the Ebola epidemic. The region also relies heavily on vaccines from

the US and has poor distribution channels in place. Moreover, due to the lack of established business channels, the region must also rely on global assistance to facilitate distribution and access to life-saving medication. The economic dynamics in the region present significant challenges for the future health security of the region as past outbreaks have left unparalleled financial losses.

In a comprehensive analysis of Kenya, Uganda, and Tanzania's pharmaceutical sectors, Chorev (2019) expounded on the entry barriers into the East African region. The analysis stated that one of the major market entry challenges included government regulations and high taxation. These government regulations negatively impact the market entry possibilities for new companies. Chorev (2019) asserts that the entrance of international brands into Tanzania was curbed by the country's unfriendly regulations and inter-territorial trade barriers. Meanwhile, bias against Chinese pharmaceutical products and high taxation on the same also presented an entry barrier for drugs of Chinese origin in most of East Africa. Also, the Chinese faced many hurdles attempting to penetrate the East African market owing to language barrier and the need for much documentation to pass the regional requirements and biases against Chinese drugs.

In the local context, several studies have evaluated or mentioned the market entry barriers of pharmaceuticals into the Kenyan market (Dembah 2010, Ouma 2018, Godman *et al.* 2018, and Chorev 2019). One of the noteworthy studies is by Dembah (2010), who evaluated the international compliance and marketing practices of Kenyan pharmaceutical companies. Dembah (2010) highlighted a number of entry barriers into Kenya's market, one of the leading ones is competition. The study used a quantitative research approach and employed descriptive statistics and factor analysis for the analysis section. Larger pharmaceutical companies with high purchasing power and innovation utilized their abilities to create entry barriers for new entrants. The study found that incumbents kept smaller

companies out of the market through strategic positioning and also highlighted issues such as trade barriers due to international regulations and poor distribution channels as significant deterrents for entering the pharmaceutical sector in Kenya (Dembah, 2010).

Ouma (2018) also notes that the issue of monopoly and first-mover advantage are major barriers to entry into Kenya's pharmaceutical sector. The study used a quantitative approach and had a sample size of 157 respondents, which was achieved through purposive sampling. The study utilized inferential statistics, regression, and correlation analysis to test the hypothesis. Ouma (2018) asserts that companies with large market shares had a strong presence and required less effort to sell while presenting a serious entry barrier for new players. Godman *et al.* (2018) mentioned that one of the most significant market entry barriers in Kenya's pharmaceutical market is the high cost of medicines.

As stated in Chitra and Kumar (2020), the demand for medicines is based on the need for these medicines, thus, placing the pricing power in the hands of the manufacturers. However, African countries face many challenges in terms of purchasing power, thus, negatively affecting the ease of entry into the market, particularly for high-cost drugs. Regarding government regulations, Chorev (2019) explains that Kenya and Uganda posed high taxes of between 20% and 33% on pharmaceutical equipment and raw materials, causing the cost of pharmaceutical production to be extremely high in the region. These interferences pose a barrier to entry for many local and international organizations that may be interested in investing in the country's pharmaceutical sector.

Diverse components of the market entry barriers were explored. The market entry strategies and challenges were further explored within the global, regional, and local context of the pharmaceutical sector. The studies revealed that the market entry strategies include a direct importing process, contractual modes, and market entry strategy development. Notably, the major barriers that influenced pharmaceutical entry included financial capacity, market

structures, monopolies, and government regulations. In the global context, factors such as high competition, significant upfront investments, government regulations, and patent requirements affected market entry. Meanwhile, market structure and cost influenced the performance of various pharmaceutical markets in the international context, starkly contrasting the Indian pharmaceutical sector and the rest of the world.

In the regional context, the power of monopolies and incumbents and low purchasing power affected the entrance into the market. Other unique issues, such as language barriers and bias towards Chinese drugs, also influenced market entry into the regional pharmaceutical sector. In the Kenyan context, the power of incumbent pharmaceuticals dominated the local market and created an entry barrier for new entrants. Also, high taxation on the pharmaceutical sector acts as a deterrent, presenting an entry barrier to those who cannot afford the high taxes imposed. Although these studies were quite comprehensive in their analysis of the market entry barriers in the pharmaceutical sector, most were set in the regional or international context; hence, their findings cannot be generalized to the Kenyan context. Furthermore, the studies in the Kenyan context employed primarily qualitative research methods, a gap this study seeks to fill using quantitative methods.

### **Summary of Empirical Literature and Research Gaps**

The conceptual and empirical literatures reviewed and presented in the previous section has provided rich literature that helps in understanding the nature of servant leadership and the phenomenon it brings about in organizations. The literature covered the conceptual nature of the lead construct that initiate the phenomenon of servant leadership and justified adoption of four of its dimensions as operational indicators of servant leadership. In describing the phenomenon servant leadership brings about in the pharmaceutical industry, two other constructs were suggested to play an important role in the phenomenon where

servant leadership is deployed to enhance sustainability of the industry. These constructs are social innovation and market entry barriers.

The empirical literature has summarised a broad range of previous research efforts demonstrating how the construct of servant leadership and its dimensions have been adopted and affected diverse outcomes in organizations. More attention was given to sustainability in the pharmaceutical industry. Even though the literature provided evidence that servant leadership is relevant for adoption to drive the cause for the attainment of sustainability goals, the researches however were clear that there are a number of inherent gaps that pave way for scholarship to further investigate the contribution of servant leadership to sustainability in the pharmaceutical industry. However, there are conceptualization issues affecting the design of the studies due to the manner in which servant leadership was operationalised such that the behavioural aspects suitable to explain the leadership process involving leaders and followers was not considered. The research reported few studies focusing on the Kenyan context together with issues revolving around methodological weaknesses that challenge the generalizability of the findings. Those that have been done on social innovation and market entry barriers though showing relevance of the constructs have not demonstrated their contribution towards enhancing the operation of servant leadership in bringing about sustainability. Thus there are a diversity of conceptual, methodological and contextual issues that future research needs to address. Table 1 summarises the specific points of focus of the researches and the set of gaps emerging for future research to consider.

***TABLE 1: SUMMARY OF RESEARCH AND KNOWLEDGE GAPS***

| Resear chers          | Research Title                                                                                                      | Purpose of the Study                                                                                                                          | Methodology                                                                                                                                                                           | Findings                                                                                                                                                                                                                                     | Gaps                                                                                                                                                                                          | Contribution of the current study                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Zarei et al. (2020)   | An application of analytic network process model in supporting decision making to address pharmaceutical shortage.” | To examine how decision-making influences pharmaceutical shortage in Iran.                                                                    | <ul style="list-style-type: none"> <li>• Use of mixed methods</li> <li>-Questionnaires</li> <li>-14 respondents</li> </ul> Use of Delphi, Analytic Network Process (ANP) for analysis | <ul style="list-style-type: none"> <li>• Irregular supply of pharmaceutical products for the treatment of non-communicable diseases.</li> <li>• Need for an efficient drug supply chain and distribution policy.</li> </ul>                  | <ul style="list-style-type: none"> <li>• The study’s focus was Iran; hence, findings cannot be generalized to this study.</li> <li>• The use of fuzzy ANP complicates the study.</li> </ul>   | <ul style="list-style-type: none"> <li>• Investigation in the low income segments of the market.</li> <li>• Use of SEM statistical analytical techniques</li> </ul> |
| Pourrat et al. (2020) | “Implementing clinical pharmacy services in France...”                                                              | To examine factors leading to drug shortage within Intensive Care Units (ICU).                                                                | <ul style="list-style-type: none"> <li>• Review of secondary data</li> </ul>                                                                                                          | <ul style="list-style-type: none"> <li>• A lack of sustainability in the supply of pharmaceutical products</li> <li>• Attributed to the increase in population demands and concentration of manufacture of the active ingredients</li> </ul> | <ul style="list-style-type: none"> <li>• The study was based in France.</li> <li>• The focus was not on resource poor areas.</li> <li>• Use of secondary data could result in bias</li> </ul> | <ul style="list-style-type: none"> <li>• Adopting sustainability elements of planet. people and profits.</li> <li>• Primary data was used</li> </ul>                |
| Beck et al. (2020)    | “Managing pharmaceutical shortages: An overview and classification of policy responses in Europe and The USA.”      | <ul style="list-style-type: none"> <li>• To examine the unsustainability of pharmaceutical drug distribution in the United States.</li> </ul> | <ul style="list-style-type: none"> <li>• Review of secondary data focusing on research phenomenon</li> </ul>                                                                          | <ul style="list-style-type: none"> <li>• The pharmaceutical distribution challenges are grouped into economic and regulatory aspects, business reasons, and supply chain challenges.</li> </ul>                                              | <ul style="list-style-type: none"> <li>• The study was based in the United States</li> <li>• Use of secondary data may render the information irrelevant and inaccurate.</li> </ul>           | <ul style="list-style-type: none"> <li>• An merging economy context.</li> <li>• Primary data used from relevant respondents</li> </ul>                              |
| Amelia et al. (2020)  | “Did servant, digital and green leadership influence market performance? evidence from Indonesian                   | <ul style="list-style-type: none"> <li>• To examine the influence of servant leadership amongst other types of</li> </ul>                     | <ul style="list-style-type: none"> <li>• The study used structured questionnaires.</li> <li>• Sample size of 180 sales managers</li> </ul>                                            | <ul style="list-style-type: none"> <li>• Servant leadership had a positive influence on the market performance aspects of the Indonesian</li> </ul>                                                                                          | <ul style="list-style-type: none"> <li>• The study focused on the Indonesian pharmaceutical industry.</li> </ul>                                                                              | <ul style="list-style-type: none"> <li>• 4 dimensions of SL used</li> <li>• Measurement in terms of extent of practice of each dimension of SL</li> </ul>           |

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|                          | pharmaceutical industry.”                                                                                                             | leadership on the market performance within Indonesian pharmaceutical industry                                                    | <ul style="list-style-type: none"> <li>Data was examined using Partial Least Square (PLS) method.</li> </ul>                                      | <p>pharmaceutical industry.</p> <ul style="list-style-type: none"> <li>Leaders positioned themselves as friends to the staff members.</li> </ul>                                                                                                                                                                                |                                                                                                |                                                                                                                                                                |
| Knop (2019)              | “Evaluation of quality of services provided by transport & logistics operator from pharmaceutical industry for improvement purposes.” | <ul style="list-style-type: none"> <li>To examine the pharmaceutical transport and logistics operations within Poland.</li> </ul> | <ul style="list-style-type: none"> <li>The study used structured questionnaires</li> <li>Quantitative data analysis techniques.</li> </ul>        | <ul style="list-style-type: none"> <li>The aspects of empathy that impacted on pharmaceutical transport and logistics included the treatment of the customers as individuals, provision of services that are convenient for each client, payment of full attention to the client, and recognition of customer needs.</li> </ul> | <ul style="list-style-type: none"> <li>The study was undertaken in Poland.</li> </ul>          | <ul style="list-style-type: none"> <li>An emerging economy context investigated.</li> <li>3 Dimensions of Empathy investigated in the study</li> </ul>         |
| Altawalbeh et al. (2020) | “Influence of Pharmaceutical Promotion on Prescribers in Jordan.”                                                                     | To examine the role of pharmaceutical promotions within the Jordanian context                                                     | <ul style="list-style-type: none"> <li>The study used a cross-sectional research design</li> <li>The study used quantitative analysis.</li> </ul> | <ul style="list-style-type: none"> <li>The provision of promotional gifts to influence the medicine prescription was an ethical concern.</li> </ul>                                                                                                                                                                             | <ul style="list-style-type: none"> <li>The study was undertaken in Jordan's context</li> </ul> | <ul style="list-style-type: none"> <li>Reconceptualization of altruism from a behavioral science lens</li> <li>Pharmaceutical distributors studied.</li> </ul> |

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| Goupil<br><i>et al.</i><br>(2019) | “Association between gifts from pharmaceutical companies to French general practitioners and their drug prescribing patterns in 2016” | <ul style="list-style-type: none"> <li>• To explore the role of gifting practices amongst the French pharmaceuticals and their negative influence on the prescription aspects</li> </ul>    | <ul style="list-style-type: none"> <li>• The study used a retrospective study.</li> <li>• Data retrieved from the National Health Data System (NHDS)</li> <li>• Sample size of 41, 257 GPs with a minimum of five registered patients</li> </ul>                       | <ul style="list-style-type: none"> <li>• Gifts could be extended to the medical practitioners by the pharmaceutical sector through sponsored continuing medical education, sponsored courses with key influencers, and sample delivery.</li> </ul>     | <ul style="list-style-type: none"> <li>• The study used secondary data.</li> <li>• Based in France.</li> <li>• Only focused on the altruism aspect of servant leadership</li> </ul> | <ul style="list-style-type: none"> <li>• Reconceptualization of altruism from a behavioral science lens</li> <li>• Pharmaceutical distributors study</li> </ul>    |
| Khazza<br>ka<br>(2019)            | “Pharmaceutical marketing strategies’ influence on physicians’ prescribing pattern in Lebanon.”                                       | <ul style="list-style-type: none"> <li>• To explore the ethical concerns of some of the marketing procedures and their impact on the pharmaceutical distribution sustainability.</li> </ul> | <ul style="list-style-type: none"> <li>• 364 practicing doctors were targeted but only 282 responded.</li> <li>• The study was cross-sectional in nature</li> <li>• Self-administered questionnaires were used.</li> <li>• Data was analysed using IBM SPSS</li> </ul> | <ul style="list-style-type: none"> <li>• The study raised ethical concerns with physician-targeted promotions, and their impact on the acceptability of the diverse pharmaceutical products supplied to the practitioners.</li> </ul>                  | <ul style="list-style-type: none"> <li>• The study focused only on the ethical concerns of marketing procedures.</li> <li>• Based in Lebanon.</li> </ul>                            | <ul style="list-style-type: none"> <li>• Ethical dimension measured alongside 3 other constructs of SL.</li> <li>• Investigation in an emerging economy</li> </ul> |
| Hulme<br><i>et al.</i><br>(2019)  | “Drug sourcing and motivations among a sample of people involved in the supply of pharmaceutical drugs in Australia.”                 | To examine the motivation of drug sourcing of the pharmaceutical distributors within Australia context                                                                                      | <ul style="list-style-type: none"> <li>• The study deployed a mixed methods approach.</li> </ul>                                                                                                                                                                       | <ul style="list-style-type: none"> <li>• 61% of the respondents were motivated by the altruistic considerations in their pharmaceutical distributorship due to a lack of participation in criminal activities in their drug supply aspects.</li> </ul> | <ul style="list-style-type: none"> <li>• The study was undertaken in Australia</li> </ul>                                                                                           | <ul style="list-style-type: none"> <li>• A Quantitative design approach adopted</li> <li>• Ethical SL measured alongside 3 other dimensions of SL</li> </ul>       |

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| Chitra and Kumar (2020)       | “Pharmaceutical market structure in India & competition concerns.”                                                                         | To investigate the market structure of India’s pharmaceutical sector and the factors surrounding its competitiveness.                     | <ul style="list-style-type: none"> <li>• The study used a case study approach</li> </ul>                                                                                                  | <ul style="list-style-type: none"> <li>• India enjoyed significant benefits due to the high demand for drugs and the low cost of production</li> <li>• Competition reduced entry barriers for pharmaceuticals in India.</li> <li>• Issues related to patent laws impacted the ease of entry</li> </ul> | <ul style="list-style-type: none"> <li>• The study was based in India.</li> <li>• Only explored competition as an entry barrier.</li> </ul> | <ul style="list-style-type: none"> <li>• Market Entry barriers used in the study</li> <li>• 3 dimensions of market entry barriers adopted</li> </ul>                           |
| Yong-Ha and Young-Taek (2020) | “Determinants of sustainability performance in pharmaceutical distribution industry.”                                                      | To examine the determinants of the sustainability and innovation of the pharmaceutical distributorship.                                   | <ul style="list-style-type: none"> <li>• Sample size of 319</li> <li>• Use of questionnaires</li> </ul>                                                                                   | <ul style="list-style-type: none"> <li>• The study found that fair-trade practices were critical to the sustainability of the pharmaceutical distributorship aspects.</li> </ul>                                                                                                                       | <ul style="list-style-type: none"> <li>• Study was based in Korea</li> </ul>                                                                | <ul style="list-style-type: none"> <li>• Social innovation adopted as a mediating variable</li> <li>• Investigation done in the pharmaceutical industry</li> </ul>             |
| Khan et al. (2020)            | “Leading the innovation: Role of trust and job crafting as sequential mediators relating servant leadership and innovative work behavior.” | To examine the leading aspects of innovation in the context of servant leadership in Pakistan.                                            | <ul style="list-style-type: none"> <li>• Sample size of 258 employees employed within software companies</li> <li>• Use of Structural Equation Modelling (SEM) to analyse data</li> </ul> | <ul style="list-style-type: none"> <li>• Servant leadership creates an element of trust in the work environment which further leads to innovative practices</li> </ul>                                                                                                                                 | <ul style="list-style-type: none"> <li>• Study was based in Pakistan, hence, cannot apply to the Kenyan context.</li> </ul>                 | <ul style="list-style-type: none"> <li>• 4 dimensions of SL used.</li> <li>• 4 dimensions linked to social innovation as a mediating variable</li> </ul>                       |
| Yimenu et al. (2021)          | “Impact of COVID-19 on pharmaceutical care services and the role of community pharmacists...”                                              | <ul style="list-style-type: none"> <li>• To examine the impact of Covid with respect to Ethiopia’s pharmaceutical distribution</li> </ul> | <ul style="list-style-type: none"> <li>• Sample size of 80 community pharmacies</li> <li>• Structured questionnaires</li> <li>• Quantitative</li> </ul>                                   | <ul style="list-style-type: none"> <li>• 78.8% of the participants experienced pharmaceutical shortages</li> <li>• Covid pandemic caused demand fluctuations, supply</li> </ul>                                                                                                                        | <ul style="list-style-type: none"> <li>• The study was based in Ethiopia</li> </ul>                                                         | <ul style="list-style-type: none"> <li>• Market entry barriers investigated</li> <li>• The role of Market entry barriers in catalyzing SL through social innovation</li> </ul> |

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|                           |                                                                                                                |                                                                                                                                                                                                                                       | analysis                                                                                                                                            | shortages, and panic stocking of drugs.                                                                                                                                                                                                                          |                                                                                                                                                                                               |                                                                                                                                                 |
| Ahen and Salo-Ahen (2018) | “Governing pharmaceutical innovations in Africa....”                                                           | <ul style="list-style-type: none"> <li>To examine how several macroeconomic and governance variables can create institutional and market conditions that cause innovations to make medicine accessible in African nations.</li> </ul> | <ul style="list-style-type: none"> <li>Use of literature review (50 scholarly articles).</li> <li>Content analysis to analyze data</li> </ul>       | <ul style="list-style-type: none"> <li>Donor factors mainly contribute to problem facing Africa's pharmaceutical sector.</li> <li>Propose innovative and integrative models that marshal access to sustainable, affordable, and high-quality medicine</li> </ul> | <ul style="list-style-type: none"> <li>The focus was on the entire African continent.</li> <li>Use of secondary data</li> </ul>                                                               | <ul style="list-style-type: none"> <li>Market entry barriers adopted together with social innovation in an emerging economy context.</li> </ul> |
| Reddy and Naude (2019)    | “Factors Inhibiting Green Supply Chain Management Initiatives in a South African Pharmaceutical Supply Chain.” | <ul style="list-style-type: none"> <li>To identify internal and external factors in the supply chain that impact green supply chain management (GSCM) initiatives in South Africa's Durban.</li> </ul>                                | <ul style="list-style-type: none"> <li>Nine participants</li> <li>Use of semi-structured interviews</li> <li>Qualitative research design</li> </ul> | High pressure to minimize selling prices, a lack of support from the government, and high costs affected the supply chain.                                                                                                                                       | <ul style="list-style-type: none"> <li>Focus was on South Africa.</li> <li>Focus was on only one P (Planet) of sustainability.</li> <li>Use of qualitative analysis is subjective.</li> </ul> | <ul style="list-style-type: none"> <li>Market entry barriers adopted together with social innovation in an emerging economy context.</li> </ul> |

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| Mackintosh et al. (2018) | “Health-industry linkages for local health: Reframing policies for African health system strengthening.” | <ul style="list-style-type: none"> <li>To explore the benefits of producing pharmaceuticals locally in Africa to ensure access to medicines by locals and improved treatment.</li> </ul> | <ul style="list-style-type: none"> <li>They used a qualitative research design where interviews were conducted.</li> </ul>                                                                                                          | Stakeholders in the healthcare sector regard investments in the production of pharmaceuticals locally as an excellent avenue to enhance access to supplies and medicines.                                                                                                                                          | <ul style="list-style-type: none"> <li>Evident methodological and contextual gaps</li> <li>Study’s focus was on Sub-Saharan Africa</li> <li>Utilized a qualitative research design.</li> </ul> | <ul style="list-style-type: none"> <li>Quantitative design adopted</li> </ul>                                                                                     |
| Barnard (2019)           | “Service Quality of a Pharmaceutical Wholesaler in South Africa”                                         | <ul style="list-style-type: none"> <li>To study the impact of empathy on the service quality on the pharmaceutical wholesaler.</li> </ul>                                                | <ul style="list-style-type: none"> <li>The study collected data through the use of structured questionnaires in South Africa.</li> </ul>                                                                                            | <ul style="list-style-type: none"> <li>The empathy metrics influencing the service quality include fulfillment of specific business requirements, ease of reaching customer care, interest in solving product-related problems, and genuine interest in solving customer problems.</li> </ul>                      | <ul style="list-style-type: none"> <li>The study focuses on pharmaceutical wholesalers in South Africa</li> </ul>                                                                              | <ul style="list-style-type: none"> <li>4 Dimensions of SL adopted.</li> <li>Sustainability used as dependent variable.</li> </ul>                                 |
| Nanteza (2018)           | “Promotional strategies and sales performance of private pharmaceutical distributors in Uganda.”         | <ul style="list-style-type: none"> <li>To examine the promotional strategies and performance of pharmaceutical distributors in Uganda.</li> </ul>                                        | <ul style="list-style-type: none"> <li>The study deployed a cross-sectional survey design.</li> <li>Target population of 175 pharmacies in Kampala, Uganda.</li> <li>Data was collected using structured questionnaires.</li> </ul> | <ul style="list-style-type: none"> <li>The persuasive mapping items that drove the performance of the pharmaceutical distributors included the information given by medical representatives, pharmaceutical sales representative influencing the decision to buy, and the usefulness of the information</li> </ul> | <ul style="list-style-type: none"> <li>The study was undertaken in Uganda</li> </ul>                                                                                                           | <ul style="list-style-type: none"> <li>Persuasive mapping investigated as a component of SL</li> <li>Conceptualization to relate it to sustainability.</li> </ul> |

|                   |                                                                                                             |                                                                                                                                                 |                                                                                                                                                                 |                                                                                                                                                                                                                                           |                                                                                                                                                             |                                                                                                                                  |
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| Sintaye hu (2017) | “Attitudes of postgraduate students towards promotional effort by pharmaceutical companies in Addis Ababa.” | To examine the elements of persuasiveness mapping on the pharmaceutical promotional effects by pharmaceutical companies.                        | <ul style="list-style-type: none"> <li>• The study adopted a quantitative data analysis procedure and targeted 400 respondents.</li> </ul>                      | <ul style="list-style-type: none"> <li>• Pharmaceutical sales representatives ensure distributorship sustainability by providing accurate and useful drug information and utilization of drug samples.</li> </ul>                         | <ul style="list-style-type: none"> <li>• Study was based in Ethiopia</li> <li>• The study was not undertaken in the context of low-income areas.</li> </ul> | <ul style="list-style-type: none"> <li>• Context of informal settlement areas investigated</li> </ul>                            |
| Netsan et (2018)  | “Factors affecting distribution performance of pharmaceutical products distributors in Ethiopia.”           | <ul style="list-style-type: none"> <li>• To examine the distribution performance of pharmaceutical product distributors in Ethiopia.</li> </ul> | <ul style="list-style-type: none"> <li>• The study deployed a descriptive research design.</li> <li>• Collected data using structured questionnaires</li> </ul> | <ul style="list-style-type: none"> <li>• Factors that significantly influenced the pharmaceutical distributorship include financial capacity, transport outsourcing, information systems, donors and government relationships.</li> </ul> | <ul style="list-style-type: none"> <li>• The study was based in Ethiopia.</li> </ul>                                                                        | <ul style="list-style-type: none"> <li>• SEM used</li> <li>• Context of informal settlement areas</li> </ul>                     |
| Chorev (2019)     | “Give and take: Developmental foreign aid and the pharmaceutical industry in East Africa.”                  | <ul style="list-style-type: none"> <li>• To explore the entry barriers into the East African region</li> </ul>                                  | <ul style="list-style-type: none"> <li>• Secondary data.</li> </ul>                                                                                             | <ul style="list-style-type: none"> <li>• The major market entry challenges included government regulations and high taxation.</li> </ul>                                                                                                  | <ul style="list-style-type: none"> <li>• The study was based in Kenya, Tanzania, and Uganda. Findings cannot be generalized to Kenya.</li> </ul>            | <ul style="list-style-type: none"> <li>• Conceptualization of market entry barriers from an organization theory lens.</li> </ul> |

|                 |                                                                                                                           |                                                                                                                                                                        |                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                  |                                                                                                                                                                 |
|-----------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ouma (2018)     | “Influence of value disciplines strategy on the management of efficiency levels in the pharmaceutical industry in Kenya.” | <ul style="list-style-type: none"> <li>To explore whether monopoly and first-mover advantage are major barriers to entry into Kenya’s pharmaceutical sector</li> </ul> | <ul style="list-style-type: none"> <li>Sample size of 157 respondents through purposive sampling.</li> <li>Quantitative analysis</li> </ul>                                                                                                          | <ul style="list-style-type: none"> <li>Companies with large market shares had a strong presence and required less effort to sell while presenting a serious entry barrier for new players.</li> </ul>                                                                                       | <ul style="list-style-type: none"> <li>Though it was based in Kenya, it only focused on two entry barriers.</li> </ul>                                                                           | <ul style="list-style-type: none"> <li>3 types of entry barriers extracted.</li> <li>Role of the barriers explained from the leadership process lens</li> </ul> |
| Weru (2018)     | “An analysis of factors affecting sustainable growth of local pharmaceutical manufacturing companies in Kenya.”           | <ul style="list-style-type: none"> <li>To examine the factors that impact Kenya's pharmaceutical manufacturing companies' sustainable development</li> </ul>           | <ul style="list-style-type: none"> <li>A cross-sectional research design</li> <li>Sample size-32 local firms registered by Pharmacy Poisons Board as of 2016</li> <li>Questionnaires to collect data, which was analysed using regression</li> </ul> | The government regulations, the cost of production, competition, and international regulations affected the sustainable growth of these firms.                                                                                                                                              | <ul style="list-style-type: none"> <li>It did not consider servant leadership critical to addressing sustainability challenges</li> </ul>                                                        | <ul style="list-style-type: none"> <li>4 SL Dimensions regressed on sustainability</li> <li>Context of pharmaceutical distributors used.</li> </ul>             |
| Gathungu (2018) | “Influence of quality service delivery on performance of pharmaceutical retail businesses in Nairobi City County, Kenya.” | <ul style="list-style-type: none"> <li>To examine the role of quality-of-service delivery and performance of the pharmaceutical retail businesses</li> </ul>           | <ul style="list-style-type: none"> <li>The study used a cross-sectional descriptive research design and collected data from 45 pharmacies operating in Nairobi.</li> </ul>                                                                           | <ul style="list-style-type: none"> <li>The emphatic characteristics influenced the performance of pharmaceutical retail businesses.</li> <li>These characteristics include customer dedication, individual attention, tailor-made solutions, and focused attention to customers.</li> </ul> | The study only focused on the entire Nairobi region and the service delivery system but failed to identify specific regions, such as low-income areas, which the current study will investigate. | Informal settlement areas used for context.<br>4 Dimensions of SL adopted.                                                                                      |

|                                   |                                                                                                                     |                                                                                                   |                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                |                                                                                          |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| Karanja , Were, and Muturi (2021) | “Servant leadership style and public participation in the county governments in Kenya.”                             | To determine how servant leadership impacts public participation in the Kenyan county governments | <ul style="list-style-type: none"> <li>• Questionnaires</li> <li>• Explanatory and descriptive research designs</li> <li>• Regression, Pearson correlation, and descriptive statistics were used.</li> </ul> | <ul style="list-style-type: none"> <li>• They found that leaders with high levels of persuasive mapping were better at conceptualizing issues and compelling others to do things</li> </ul>                                                                                                                                                        | The study only focused on persuasive element of servant leadership. It was based on the political context, hence, not applicable to the pharmaceutical sector. | Persuasive mapping measured in pharmaceutical distributors targeting low income areas    |
| Kiplagat and Odollo (2021)        | “Effect of strategic responses on organizational performance of pharmaceutical firms in Nairobi city county Kenya.” | To examine the influence of strategic responses on the pharmaceutical firms within Nairobi County | <p>Sample size 119 pharmaceutical firms</p> <p>Use of questionnaires</p> <p>A descriptive research design</p>                                                                                                | <ul style="list-style-type: none"> <li>• Innovation impacts technology use, employee competences, and data management. It led to the development of new products and services, reduction of delivery times, increase in information accuracy, improvement of product quality, stock management, and detection of sub-standard products.</li> </ul> | The study did not target pharmaceutical firms serving informal settlement areas.                                                                               | Special innovation used as mediating variable. Context of informal settlement areas used |

**Source:** Researcher 2024

## **Theoretical Review**

The theoretical literature reviewed examined the theories that were used to anchor the variables of the study. According to Throne (2020), the theoretical framework discusses the theories to be used in the study. On the other hand, Gray and Grove (2020) assert that the theoretical framework refers to an abstract and logical structure of meaning that guides the study's development. Hall (2020) further asserts that the theoretical framework refers to the application of concepts or theories to explain the research phenomenon. This study was supported by the premises of the Servant Leadership Theory, Leader Member Exchange (LMX) Theory, Three Cycle Model of Social Innovation, and Triple Bottom Line Model.

### ***Servant Leadership Theory***

Servant Leadership is a non-traditional leadership philosophy, embedded in a set of behaviors and practices that place the primary emphasis on the well-being of those being served. The theory for Servant leadership emphasizes on serving others and seeks to involve others in advanced cognitive process, generally based on moral, ethical, honest and understanding behaviour towards others, and improves the development of workers while improving the organization's environment. The theory owes its origin to the work of Robert Greenleaf. Greenleaf's theory was developed in the 1960's and 1970's, but is today finding new proponents who see it as a theory for its time, one that provides an ideal and necessary alternative to the traditional, hierarchical paradigms of the industrial past.

The Central tenets of the Greenleaf theory build on its core logic of serving others first. Alongside this core logic, Greenleaf suggested several attributes of servanthood in leadership which include service to others, authenticity, holistic approach to work, promoting sense of community, sharing power in decision making. Service to Others. Servant-leadership begins

when a leader assumes the position of servant in their interactions with followers. Authentic, legitimate leadership arises not from the exercise of power or self-interested actions, but from a fundamental desire to first help others. Greenleaf wrote that this “simple fact is the key to [a leader’s] greatness” (Greenleaf, 1970). A servant-leader’s primary motivation and purpose is to encourage greatness in others, while organizational success is the indirect, derived outcome of servant-leadership. Holistic Approach to Work attribute of Servant-leadership holds that “The work exists for the person as much as the person exists for the work” (Greenleaf, 1996). The theory promotes a view that individuals should be encouraged to be who they are, in their professional as well as personal lives. In promoting a Sense of community, Greenleaf lamented the loss of community in modern society, calling it “the lost knowledge of these times” (Greenleaf, 1970). Further, the theory posits that this sense of community can arise only from the actions of individual servant-leaders (Greenleaf, 1970). Sharing of Power in Decision-Making for effective servant-leadership is best evidenced by the cultivation of servant-leadership in others. By nurturing participatory, empowering environments, and encouraging the talents of followers, the servant-leader creates a more effective, motivated workforce and ultimately a more successful organization. Servant-leadership, therefore, emphasizes core personal characteristics and beliefs over any specific leadership techniques. This is seen throughout the writings of Robert K. Greenleaf, from his first, seminal essay on servant-leadership to his posthumously published writings.

Subsequent scholarly efforts towards enriching the original thoughts of Greenleaf have suggested more attributes of servant leadership (Frick, 2004; Greenleaf, 1997; Spears, 1998). These complimentary studies identified ten dimensions of servant leadership: healing, listening, conceptualization, empathy, awareness, foresight, stewardship, persuasion, building

community, and commitment to the growth of people (Andoh-Mensah, 2021). In general, the subsequent conceptualizations and empirical work on servant leadership dimensions have emanated from these dimensions. The extraordinary leadership style is whereby one leads by serving followers and working to satisfy others' needs, which will eventually encourage others to follow (Greenleaf, 2002).

Eva *et al.* (2019)'s work provided a contemporary definition of servant leadership in which they mentioned that: "Servant leadership is another-oriented approach to leadership; manifested through one-on-one prioritizing of follower individual needs and interests; and an outward reorientation of their concern for self towards concern for others within the organization and the larger community." Indeed, servant leaders are distinct from other leaders, as they emphasize on developing their followers (Hutabarat *et al.*, 2021). They maintain their focus on developing their followers by displaying concern for the larger community and showing commitment and accountability for their well-being (Hartnell *et al.*, 2020). Subsequently, servant leaders empower them to be productive and prosocial catalysts who can cause positive changes in others' lives and alter social broken structures within which they operate (Allan *et al.*, 2019).

Relatedly, Saleem *et al.* (2020) further categorized servant leadership into multiple dimensions that include relational, ethical, emotional, and spiritual. However, this broad categorization has been criticized as overlapping with other types of leadership dimensions. Ullah *et al.* (2021) also identify seven dimensions of servant leadership: (1) emotional healing; (2) helping followers develop and succeed (3) behaving ethically (4); empowering (4) (5) putting followers first; (6) conceptual skills; and (7) creating value for the community. Recently, these dimensions been combined to create a global index of servant leadership (Hu

& Liden, 2011). On the other hand, Andoh-Mensah (2021b) also assert that servant leadership dimensions include empowering and developing people, expressing authenticity, humility, stewardship, interpersonal acceptance, and visionary direction.

Emilisa and Kusumaditra (2021), in their study conducted in Indonesia, proposed a model of servant leadership dimensions that includes emotional healing, altruistic vocation, value for community, empowering, conceptual skills, and behaving ethically. Similarly, in their empirical work conducted in Portugal *et al.*, 2020 suggest that servant leadership dimensions are associated with putting followers first and empowering them, assisting followers to develop and succeed, creating value for the community, fostering and developing conceptual skills, family atmosphere, and identification with the leader. However, Emilisa and Kusumaditra (2021) also argue that servant leadership dimensions of empowering, altruistic behavior, value for community (organizational stewardship), conceptual skills development, and ethical behaviour significantly contribute to the development of innovative behavior in organizations. This shows that these dimensions are better placed in analyzing the relationship between servant leadership innovation, and organisation sustainability (Peng & Chen, 2020).

Previous studies have demonstrated how the dimensions of servant leadership, including ethical (Alssageer & Kowalski, 2021; Goupil *et al.* 2019; Koiri 2018) empathic (Barnard, 2019; Gathungu, 2018 Knop, 2019; Nanteza, 2018), altruistic (Bataineh *et al.* 2018; Sharabati, 2018) and persuasive mapping (Karanja *et al.* 2021; Nanteza ,2018; Yohannes 2017) influenced sustainability efforts in the organizational context. Although they focus on the effects of servant leadership, they do not address them in the context of the pharmaceutical sector in Nairobi County's informal settlement areas.

Given the relevance of servant leadership in enhancing sustainability in organisations, the theory laid an excellent foundation for signifying how ethical, empathic, altruistic, and persuasive mapping servant leadership components impact sustainability among pharmaceutical distributors in Kenya. The study adopted these four components in determining how servant leadership influences sustainability among pharmaceutical distributors. This study looked at how the servant leader will deal with followers by relying on the Leader Member Exchange Theory to give the explanation.

### ***Leader Member Exchange (LMX) Theory***

Founded in the 1970s by George Graen, Fred Dansereau, and William Haga, the premise of the LMX is that there is a relational approach to leadership, implying that the leader may have variable social exchanges with each follower (Northouse, 2018). Thus, the leader has different quality relationships with followers. Leadership does not necessarily limit quality in terms of the ones in the in-group or the out-group. However, LMX signifies that the outcome of the relationship may either be low or high quality (Northouse, 2018). Usually, low-quality relationships are task oriented. In contrast, high-quality relationships are characterized by augmented trust, interaction, support, and rewards (Martin *et al.*, 2018). The result of high-quality relationships could be loyalty to each other and liking or respect.

A bulk of evidence supports LMX as an appropriate theory for leaders and followers. A recent study provided antecedents for LMX and how it impacts work attitudes (Bauer & Erdogan, 2015). Studies show a link between positive LMX and work outcomes and performance due to high satisfaction levels (Martin *et al.*, 2018). As servant leadership occurs in a dyad, the LMX is the most appropriate theory for servant leadership, as LMX is also dyadic. The study's purpose through persuasive mapping is to conceptualize how leaders can use persuasion and logical reasoning to solve problems, thereby giving followers direction

(Karanja *et al.* 2021; Rashid *et al.*, 2019). With that in mind, servant leaders can use high-quality LMX to motivate the behaviors and attitudes they need followers to adopt. The social exchange that encompasses trust and responsibility may make followers achieve specific cognitive empathy through logical decision-making that enable followers to resolve problems.

LMX is also crucial in developing affective empathy for servant leaders as leaders can understand people's thoughts and feelings from their perspective. Viewing LMX within an in-group and out-group context, a leader's in-group members tend to have higher satisfaction than those of the out-group (Martin *et al.*, 2018). It seems that affective empathy may be created by high-quality LMX when the servant leader creates conditions that support followers since the leader and their followers aim at attaining mutual goals (Martin *et al.*, 2018). The central tenet of LMX is that there are different relationships between followers and leaders. There may be those who achieve low or high relationships. The LMX, thus, contradicts the moderate leadership style approach, where leaders are theorized to treat all followers equally. As such, it is possible to achieve affective empathy with LMX when servant leaders use some of the traits in servant leadership to address followers.

Similarly, leaders are vital in determining the behaviors of their followers. Servant leaders, based on Shetty *et al.* (2021), assert that leaders' role is to incorporate an ethical climate in the workplace. Thus, servant leaders can use high-quality and in-group aspects of the theory to include ethical behaviors. Thus, for behavioral aspects, high-quality LMX is vital for integrating positive behaviors among followers (Martin *et al.*, 2018). In Kenya, for example, the notoriety of selling antibiotics without a prescription is increasing and selling to those without a license (Torres *et al.*, 2020). Thus, this study is crucial for determining whether behavioral aspects such as ethical, empathic, and altruistic behaviors may follow

from servant leadership if LMX is used. In summary, the theory is critical to understand whether servant leaders can integrate affective and cognitive empathy while motivating positive behavior when it comes to ethical dilemmas.

The LMX theory illustrates that a servant leader should ensure that all followers feel as part of the in-group and pursue high-quality relationships. Although the theory addresses the significance of servant leadership dimensions, it does not look into how the mediating variable of market entry barriers impact sustainability among pharmaceutical distributors; hence, the need to include the three-cycle model of social innovation.

### ***Three-Cycle Model of Social Innovation***

The Three-Cycle Model of Social Innovation has sociological underpinnings and draws its inspiration from the Institutional Theory. The latter is centered on the macro-level. Based on the Institutional Theory, the actions and positions of interdependent actors in institutional setups should be assessed while being cognizant that beliefs, norms, and rules are socially negotiated or constituted orders, which means they can be adjusted to enhance social innovations (Carvalho *et al.*, 2017). Although social innovation has become highly influential in both policy and scholarship, a systematic and sustained examination of social innovation, its impacts, characteristics, and theories are lacking (Edwards-Schachter & Wallace, 2017; Judit, Eszter *et al.*, 2017; Howaldt & Schwar, 2016; Moulaert *et al.*, 2013).

Van Wilk *et al.* (2019) describe social innovation using a Three-Cycle Model, whereby the relational, agentic, multilevel, and situated process is used to promote, develop, and institute new explanations to social issues in ways aimed at causing significant change in an institutional setup (Cajaiba-Santana, 2014). Thus, efforts of social innovation will rely on the actors' will and the institutional circumstances that lead to their framing. In cases where conditions are stable, efforts of entrenching require time and hands on participation to ensure

these social innovations are embedded institutionally (Van Wilk *et al.*, 2019). For example, social innovations solve persistent issues and have generated considerable social change in policy decision making, for instance, the creation of natural parks (Westley *et al.*, 2016), and creation of the birth control pill (Eig, 2014).

The social innovation framework is based on several aspects of existing studies on social innovation (Edwards-Schachter & Wallace, 2017; Eszter *et al.*, 2017; Howaldt & Schwar, 2016;; Judit, Van Wilk *et al.*, 2019 ), which extend their usefulness for practice and research. For the social innovation process to be initiated, it requires a creative social strategy (Pue *et al.*, 2016). The end game of such an approach is not always the completion of the process of social innovation, but it will always cause social change. Usually, this is attributed to social innovations' two driving forces: structural and agentic engines.

Agentic and structural terms reflect the thinking of social science about the way people or agents can change situations but are limited in achieving that by social structures like organisations, roles, and rules (Pue *et al.*, 2016). Thus, the agentic engine is regarded as people's purposes and actions within the social innovation process. On the other hand, the structural engine, which is the same as the institutionalization concept, encapsulates a background that outlines the content and strategic decisions that socially creative actors undertake and the mechanisms through which socially creative approaches are created and recreated (or not) over time (Pue *et al.*, 2016). Thus, the distinct characteristic of social innovation is that it encourages social inclusion by enhancing social relations, particularly those formerly ignored by economic, cultural, and political engagement (Van Niekerk *et al.*, 2021). Social innovation is complete when the socially creative strategy is directed to reconfigure social relations to generate social benefits.

Social innovation problems usually surpass administrative, geographic, and political boundaries Van Niekerk *et al.*, (2021). Mainly, this can be attributed to weak institutions or loopholes in the context of governments and markets that may hamper communities' participation (Al-Zoubi, 2021 ; Van Niekerk *et al.*, 2021 ). Other times, organisations that wish to enter a certain market encounter barriers to entry, ranging from structural to strategic barriers. Thus, although social innovations aim at causing tangible results or solving unmet societal needs, they challenge the underlying values and culture of the prevailing system.

Social innovation is broadly viewed as a critical phenomenon of development, but it has conventionally been regarded as limited in its scope (Millard, 2014). For an extended period, the discussion on social innovation has focused on social entrepreneurship concepts (Nicholls, 2012; Young, 2012). Such a narrow understanding cannot allow one to fully exploit the capabilities of social innovation for sustainable and human development; thus, the need to develop a theoretical framework for social innovation and market entry barriers.

The following study interpreted the most critical aspects (postulates) of social innovation and market entry barriers in the context of pharmaceutical distributors in low-income regions in Nairobi County. It sought to uncover a purpose-motivated novel answer to a social problem of a certain society (actors in low-income areas in Nairobi Country), ensure cooperation and participation of various spheres, for example, political, civil, and economic, and implementation of the process while generating beneficial social effects. Judit *et al.* (2017) note that the novel answers should be more comprehensive than previous ones as well as benefit the entire society. They also connect social innovation with sustainable development by emphasising how other forms of expertise, such as citizen and indigenous knowledge, can cause superior collective knowledge building and learning, which goes beyond the technical rationality of science procedures.

Thus, the social innovation theory represents the social innovation variable, which is intended to enhance societal need satisfaction, and social relations, and contribute to the individual and community. Although social innovation aims to solve unmet societal issues, several market barriers in the business environment, such as entry barriers, arise when trying to effect social change. Thus, this study sought to study the postulates of market entry barriers, including structural and strategic barriers. The social innovation theory applies to the changing market environment and social innovation aspects in the pharmaceutical sector. However, they do not address business sustainability aspects which is the dependent construct of this study; hence, the need to include the TBL Model.

### ***Triple Bottom Line Model***

In 1994, business writer and founder of management consultancy sustainability John Elkington coined the triple bottom line. The concept was presented into the business field, as the new taxonomy of sustainability. It embraced new guiding principles for industries to follow and solve the Sustainable Development Goals (SDGs) that were presented in the United Nations Rio+20 summit and the Millennium Development Goals (MDGs) of 2015. The concept was aimed at challenging companies to include people and the planet's security in their strategic business models and to create new taxonomies and instruments to evaluate the prejudices that the environment caused (Griggs *et al.*, 2013). In *Cannibals with forks*, Elkington (1997) presented the 3Ps designation for planet, people, and profits as a threefold goal toward ensuring true sustainability. To be successful in a truthful triple-bottom-line development, Srivastava *et al.* (2021) contend that an organization should regard having all three parts with positive returns.

According to Swarnakar *et al.* (2022), the triple bottom line (TBL) uses social, financial, and environmental aspects as the viewpoints for its framework. Higher business

value has been created by several industries through the implementation of TBL, thus assessing the sustainability of business performance. Integrating environmental and social measures into the TBL framework sets it aside from the traditional framework that is limited as a means of measurement (Swarnakar *et al.*, 2022). In the United Nations Development Program (2020) site, the recommendation is for companies to commit to measure their environmental and social effects as well as their financial performance, instead of focusing on making profits or the standard “bottom line. The first perspective on profit argues that a firm’s success depends on its financial performance or its shareholders' profit (Moktadir *et al.*, 2021). Similarly, Swarnakar *et al.* (2022) refer to profit as the economic bottom line associated with creating the company’s economic value after reducing input costs, including capital costs. Strategic planning initiatives and important business decisions are wisely designed to capitalize on profits while minimizing costs and mitigating risks (Fischer *et al.*, 2020).

The second element of the triple bottom line, people, highlights an organization's commitment to people or its social impact. Swarnakar *et al* (2022) add that the bottom line of people, human capital, or social equity entails fairness, equity, and business benefits towards the region, community, and labour concerning the corporation’s business practices. According to Sridhar and Jones (2013), companies can serve society by participating in fair hiring practices and encouraging employees to volunteer. They can also look at causing change in the external environment, which will have a significant impact. For example, many companies have entered into successful strategic partnerships with nonprofit organizations with a common purpose-driven goal. The final aspect of the triple bottom line; planet, is concerned with impacting the planet positively (Sridhar & Jones, 2013). Planet, natural capital, or environmental bottom line pertains to sustainable ecological processes to minimize

environmental impact by maintaining the natural order (Swarnakar *et al.*, 2022). These 3Ps designations for planet, people, and profits represent three goal towards ensuring true sustainability.

One of the challenges of using the TBL approach is the complexity of its parameters. According to Sridhar and Jones (2012), different corporations incorporate intangible assets to be measured using TBL, such as loyalty, which may give other guidelines that make measurement difficult. Another challenge is that TBL is used for social measurement, and the constructs are used to make it specific to the corporation (Sridhar & Jones, 2012). Isil and Henrke (2017) note that the challenge in measurement makes it easier for companies to provide basic information on each bottom line with limited integration. Thus, the TBL approach is specific to a particular company and its needs, making it difficult for generalized use.

Despite these challenges, TBL works as a good tool for measuring sustainability. Several studies have linked servant leadership to sustainability. Some studies determined that servant leadership improved performance in organisations (Amah & Oyetuunder, 2020) and increased personnel motivation. Other scholars found that servant leadership aims to develop social value qualities in organizational leaders and impacts social and environmental aspects of society (Müller *et al.*, 2018) and (Furstenau *et al.*, 2020). Although several studies have quantitatively analyzed the 3Ps of sustainability, the focus has been on other industries, not the pharmaceutical sector. Thus, this study sought to measure the three components of sustainability, including social, economic, and environmental aspects in pharmaceutical distributors in Nairobi County.

### ***Summary of Theoretical Framework***

The theoretical review undertaken has highlighted the postulates of the theories in a manner that they identify with the focus of this study. The purpose of the review was to identify relevant theories suitable to anchor the study variables as well as the phenomenon of the study. The summary of the theories is presented in Table 2 to demonstrate how the propositions contribute towards the conceptualization of this study.

**TABLE 2 SUMMARY OF THEORETICAL FRAMEWORK**

| <b>Theory</b>                       | <b>Proponents</b>                                                                                                | <b>Postulates</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Contributions to Studies</b>                                                                                                                                                                                    |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Servant Leadership Theory           | Robert K Greenleaf (1970)                                                                                        | <ul style="list-style-type: none"> <li>• The mind-set of servant leaders is to reorient their concern for self towards concern for others.</li> <li>• The deliberate focus on follower development is maintained with a concern for the larger community.</li> <li>• Servant leaders ensure that both their followers and other resources within the organization will be responsibly cultivated and grown.</li> </ul>                                                                                                                | <ul style="list-style-type: none"> <li>• The servant leadership principles of empathy, ethics, persuasive mapping, and altruism are critical within the context of low-income areas.</li> </ul>                    |
| Three Cycle Social Innovation Model | Howaldt and Schwar (2016)<br>Edwards-Schachter and Wallace (2017)<br>Judith et al. (2016)<br>Pue et al. (2016).  | <ul style="list-style-type: none"> <li>• Social innovations have structural and agentic engines.</li> <li>• The agentic engine is regarded as people's actions within the social innovation process.</li> <li>• Structural engine outlines the strategic decisions that socially creative actors undertake and the mechanisms through which socially creative approaches are created.</li> <li>• Agents can change situations but are limited in achieving that by social structures like organizations, roles, and rules.</li> </ul> | <ul style="list-style-type: none"> <li>• The social innovation theory applies to the changing market environment in the pharmaceutical sector.</li> </ul>                                                          |
| Leader Member Exchange Theory (LMX) | Graen, Dansereau, and Haga founded this theory. The premise of the LMX is that it takes a relational approach to | <ul style="list-style-type: none"> <li>• The leader has different quality relationships with followers.</li> <li>• Leaders do not limit quality in terms of the ones in the in-group or the out-group.</li> <li>• LMX signifies that the outcome of the relationship may either be low or high quality.</li> </ul>                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>• Servant leaders can use high-quality LMX to motivate the behaviors and attitudes they need followers to adopt.</li> <li>• The study is crucial for determining</li> </ul> |

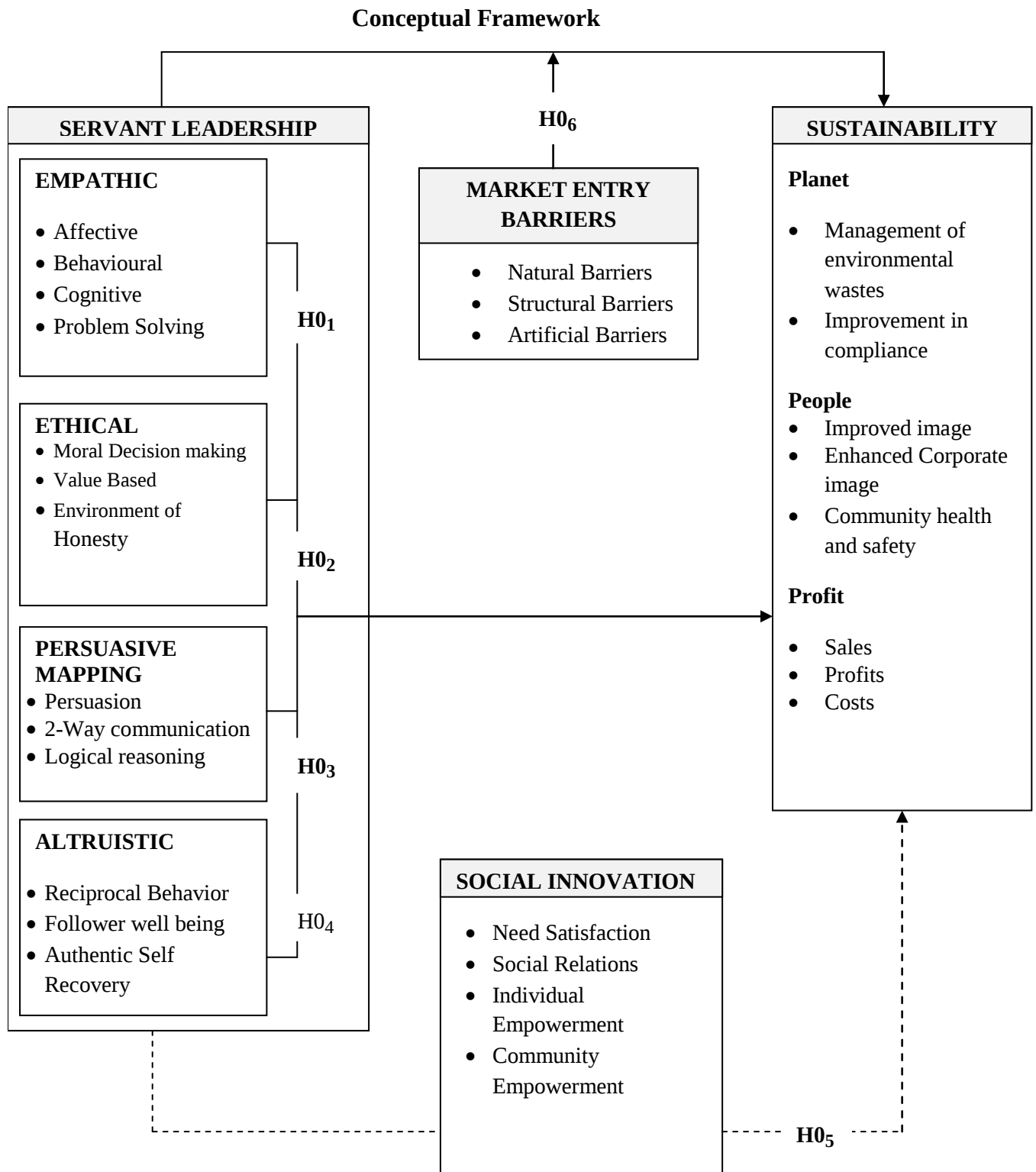
|                               |                 |                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                |
|-------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                               | leadership.     |                                                                                                                                                                                                                                                                                                 | whether behavioral aspects such as ethical, empathic, and altruistic behaviors may follow from servant leadership if LMX is used.                                                                                                                                                                              |
| The Triple Bottom Line Theory | Elkington(1997) | <ul style="list-style-type: none"> <li>• Elkington introduced the 3Ps: people, planet, and profits, as a threefold goal toward true sustainability</li> <li>• The 3 Ps are likened to the social, financial, and environmental aspects, which are the viewpoints for this framework.</li> </ul> | <ul style="list-style-type: none"> <li>• The pharmaceutical distributors in Kenya should work on measuring the social and environmental impact of their activities in addition to their financial performance rather than solely concentrating on generating profit, or the standard “bottom line.”</li> </ul> |

Source: (Author, 2024)

### Conceptual Framework

The conceptual framework detailed the interconnection between the variables. The framework allows the researcher to associate existing variables or concepts, which can inform a certain problem (Al-Zoubi, 2021). Therefore, the study’s independent variables are empathic servant leadership, servant leadership by persuasive mapping, ethical servant leadership, and altruistic servant leadership. The moderating variable is market entry barriers, while the mediating variable is social innovation. The dependent variable is the sustainability of the pharmaceutical distributors.

### **FIGURE 1: CONCEPTUAL FRAMEWORK**



**Figure 1:** Conceptual Framework

**Source:** Author, (2024)

**Chapter Summary**

This chapter has undertaken a thorough review of the existing literature to provide a comprehensive understanding of the study constructs. It has examined relevant empirical work by analysing their findings, methodologies and theoretical frameworks. A summary of literature is also presented highlighting the existing knowledge gaps in the area of study. This chapter has also identified theoretical and conceptual gaps pinpointing areas for further investigation. The discussion on the variables and the emerging gaps were used to construct the conceptual framework that guided the study by expressing the hypothesis that the study tested.

### **Chapter Three: Research Methodology**

#### **Introduction**

This chapter presents the research methodology that this study adopted. Specifically, it outlined the research design, target population, sample size and sampling technique, and data collection methods. Other aspects in this chapter include; pilot study, data analysis and presentation, and ethical considerations.

#### **Research Philosophy**

The philosophical foundation of the current research was positivism. Positivism is a deductive approach that seeks to verify previously generated hypothesis using quantitative data analysis methods (Park *et al.*, 2020). This philosophy is appropriate because, in contrast to interpretivism, which claims that reality can only be understood through human interpretation and intervention, positivism asserts that reality is stable and that it can be observed and described from the perspective of its purposes (Ryan, *et al.*, 2015).

According to positivist scholars, truth is a set of facts that can be confirmed or refuted, and reality is the same for everyone. Therefore, an object's weight remains constant regardless of who measures it; measurements and observations provide us with reality (Ryan *et al.*, 2015). Positivism also aims to derive functional associations between the independent and dependent variables (Park *et al.*, 2020). Since the positivist paradigm aims to analyse data systematically and through use of scientific methods, this justifies its use in this quantitative study. In this study, hypotheses developed were tested using statistical techniques, and an explanation that is in line with the positivist philosophy was then derived from the results.

## Research Design

Research design is a critical component of the research process. According to Bougie *et al.* (2020), research design refers to the action plan followed in the data collection and analysis to effectively and objectively address the research objectives. The research design should balance the economy of time and resources against the ability to achieve the research objectives. A descriptive cross sectional research design was used in this study as the goal was to collect results from different groups in the pharmaceutical industry in Kenya to answer the role they play in innovation or reducing barriers of entry by using servant leadership.

A cross-sectional design measures the outcome at the same time as the participants are only selected based on inclusion and exclusion criteria (Setia, 2016). It aims to get reliable information that allows the researcher to generate new hypotheses that can result in new research and make solid conclusions (Zangirolami- Raimundo *et al.*, 2018). A cross-sectional design is advantageous as it allows the researcher to observe the phenomena directly. Further, information from the study population is collected at a single time; thus, following up on the respondents is not necessary. Therefore, the results are produced at quicker timelines, resulting in lower costs when compared to other designs (Zangirolami-Raimundo *et al.*, 2018).

Based on the nature of this study, a cross-sectional study design was paired with descriptive research. Aggarwal and Ranganathan (2019) note that descriptive research describes how one or more variables are distributed without regard to other or causal hypotheses. Mainly, this research design was based purely on theory, where the researcher collected, analysed, and prepared the information in a way that can be comprehended. It is advantageous as the researcher does not need to change or control for any of the variables,

but they only observe and then measure them. The study examined the influence of empathic servant leadership, servant leadership by persuasive mapping, ethical servant leadership, and altruistic servant leadership on the sustainability of pharmaceutical distributors in Nairobi County's low-income areas. The study's independent variable is servant leadership and the dependent variable is sustainability.

The researcher used Structural Equation Modelling (SEM) for the analysis. The goal was to use the independent variables as predictors of the sustainability of pharmaceutical distributors in Nairobi City County's low-income areas. The study sought to examine the mediating effect of market entry barriers on the relationship between servant leadership and the sustainability of pharmaceutical distributors in Nairobi County's low-income areas. Moderation analysis and mediation analysis were done through structural equation modelling.

### ***Target Population***

The study's target population refers to a set of items or persons of interest to the researcher and for whom the researcher will generalize the research findings (Nunkoo *et al.*, 2021). The population of the study comprised all pharmaceutical distributors serving informal settlements in Nairobi City. According to the Nairobi City County Government Development Plan, the city has several informal settlements which include: Kibera, Mathare, Huruma, Kariobangi, Korogocho, Mukuru kwa Njenga, Kayole and Dandora. The number of pharmaceutical distributors supplying these informal areas as at the time of the survey were 30. Thus, the total population comprised the 30 pharmaceutical distributors who constituted the unit of analysis. The target unit of observation in each of the pharmaceutical distributors was the recognized formal leadership position responsible for decision making and administration in the functional areas of finance, sales and marketing, logistics, HR and

administration, medical representation, pharmacy, and top management. The officers serving in the departments that comprised the unit of observation at the time of the survey were identified as the respondents from whom data was obtained. The respondents therefore included CEOs, HR and Administration managers, finance managers, sales and marketing managers, logistics and supply chain managers, pharmaceutical technologists and medical representatives within the pharmaceutical distributors. The total number of the unit of observation was 210.

The study was done as a census of all the pharmaceutical distributors supplying informal settlement areas in Nairobi. However, at the unit of observation, the study purposively sampled administrative levels that were considered to offer the office holders an opportunity to practice aspects of servant leadership in the ordinary course of performance of their duties. In each of the distributors, seven departments were sampled and the managers heading the department was selected to participate in the research. The sampling frame based on the census of the 30 pharmaceutical distributors and the respondents is presented in Table 3 presents the distribution of the targeted population.

**TABLE 3: POPULATION DISTRIBUTION AND SAMPLING FRAME**

| S/No. | Pharmaceutical Distributor | No. of Respondents |
|-------|----------------------------|--------------------|
| 1     | Dawa Ltd.                  | 7                  |
| 2     | Sphinx Pharmaceuticals     | 7                  |
| 3     | Highridge                  | 7                  |
| 4     | Bibo Pharmaceuticals       | 7                  |
| 5     | Nairobi Pharmaceuticals    | 7                  |
| 6     | Transchem                  | 7                  |
| 7     | Rangechem                  | 7                  |
| 8     | Mzima                      | 7                  |

|              |                             |            |
|--------------|-----------------------------|------------|
| 9            | Generics Africa             | 7          |
| 10           | Salama                      | 7          |
| 11           | Foholo                      | 7          |
| 12           | Biodeal Ltd.                | 7          |
| 13           | Cosmos Ltd.                 | 7          |
| 14           | Omaera Pharmaceuticals Ltd. | 7          |
| 15           | United Pharma Ltd           | 7          |
| 16           | Bilova                      | 7          |
| 17           | Modana                      | 7          |
| 18           | Ripple                      | 7          |
| 19           | Njimia                      | 7          |
| 20           | Surgiilinks                 | 7          |
| 21           | Nairobi Enterprises Ltd     | 7          |
| 22           | Transwide Ltd.              | 7          |
| 23           | Syner-Medica                | 7          |
| 24           | Phillips                    | 7          |
| 25           | Sunpar                      | 7          |
| 26           | United Pharma               | 7          |
| 27           | Mac's                       | 7          |
| 28           | Regal                       | 7          |
| 29           | Galaxy                      | 7          |
| 30           | Knight                      | 7          |
| <b>Total</b> |                             | <b>210</b> |

**Source:** (Kenya Pharmaceutical Industry Diagnostic Report, 2020)

### Data Collection Tools

Data collection tools are the items that the researcher used to deploy to the subjects and retrieve the same with the research information (LoBiondo-Wood & Haber, 2021; Alston & Bowles, 2003). This study collected primary data that is quantitative. According to Gannon and Fauchon (2021), primary data refers to the data that the researcher has collected themselves.

The study used structured questionnaires for the data collection aspects. The structured questionnaire derived its questions from already validated survey instruments relevant to this study. According to Matias (2021), a structured questionnaire refers to research instruments that offer respondents a set of statements with options/choices on how to respond. In this context, Nunkoo *et al.* (2021) assert that structured questions are those that

the respondents have to pick the provided options of responses and are confined to picking from the provided response options.

Structured questions have several advantages, including ease of software to analyze the data, higher response rates, and comparability of the results (Coe *et al.*, 2021; Esteban-Bravo & Vidal-Sanz, 2021). In this study, the structured questions were of two types: categorical or Likert-based multi-item scales. According to Farmer (2020), categorical questions are used mainly to measure factual information instead of opinions. In this context, the categorical questions were used for the measurement of the demographic characteristics of the respondents. On the other hand, Jasrai (2020) notes that the Likert-based questions are used to measure the opinions or attitudes of the respondents with respect to specific constructs and variables.

In the context of this study, a five-point Likert scale was used. The Likert-based questions were used to measure empathic servant leadership, servant leadership by persuasiveness, ethical servant leadership, altruistic servant leadership, market entry barriers and social innovations, and sustainability of pharmaceutical distributors. These variables were measured using a 5 point Likert-based scale to create a multi-item scale. The multi-item scale was due to the need to summate the individual Likert-type questions measuring a specific variable into composite (summed) scales that are continuous and which was used in inferential statistics. The Likert scale had the extremes ranging from low to a large extent (See Appendix III).

### ***Data Collection Procedure***

Data collection procedure refers to those processes undertaken in the provision of the data collection instrument to the respondents and the protocols of retrieving the filled data

collection instrument for the analysis activities (Gathii *et al.*, 2019). The data collection procedure commenced after the successful defense of the proposal. The researcher then sought the data collection authority from the university. Having been authorized with respect to the data collection procedure, the researcher then sought authorization from the National Commission of Science, Technology, and Innovation (NACOSTI). The researcher then provided the consent statement to the respondents before administering the questionnaires. The questionnaires were self-administered. According to Lavrakas *et al.* (2019), self-administered questionnaires refer to those questionnaires which the respondents fill in on their own.

The researcher used several instruments generated by several researchers to create the items used in the survey for the current study. For the independent variable, several study instruments were referred to. Survey instruments for Lawrence *et al.* (2004) and Batchelder *et al.* (2017) were used to generate the questions for empathic servant leadership. Batchelder *et al.* validated their survey instruments using confirmatory factor analysis (CFA). The scale also had acceptable reliability coefficients alpha ranging from 0.70 to 0.81, alluding to the internal consistency of the survey items. For ethical servant leadership, the researcher used instruments created by Ehrhart (2004) and Liden *et al.* (2008), and Dodd *et al.* (2018). Barbuto and Wheeler (2006) and Denis and Borcanea (2005) surveys were used for altruistic and persuasive elements of servant leadership. Ehrhart (2004) validated their scales using confirmatory factor analysis, and the alpha reliability score for the overall scale was .98.

The items for the sustainability variable were derived from Baliga *et al.* (2019). Baliga *et al.* (2019) validated the scales through confirmatory factor analysis and later carried out structural equation modeling using Amos 20.0 to ensure that the constructs had a structural relationship. They determined the AVE (Average Variance Extracted) and CR

(Composite Reliability) of the items to be  $>.5$  and  $>.7$  respectively, which also applied to the convergent validity. To measure social innovation and market entry barriers, the researcher relied on items in Bulut *et al.* (2012)'s study and Singh *et al.* (1998), Lutz *et al.* (2010), and Couto and Barbosa (2020) studies, respectively. Lutz *et al.* (2010) conducted a factor analysis to verify whether certain underlying latent variables had a bearing on the firms' perception. The researchers obtained 0.840 for the Kaiser–Meyer–Olkin (KMO) value, and a significant level of 0.05 was obtained through Bartlett's test of sphericity (See Appendix for detailed itemization of the questions in the survey). The researcher selected questions from survey instruments that were reliable and valid. To ensure the validity and reliability of the questionnaire for the current study, a pilot study was undertaken.

### **Pilot Study**

A pilot study was undertaken in this study for various reasons. According to Gannon and Fauchon (2021) and Nunkoo *et al.* (2021), pilot study refers to a mini or small scale study that is first undertaken on an exploratory and preliminary basis before the main study is carried out. The pilot study serves different functions in a research process, such as strengthening the logistical arrangement of undertaking the final study (Wu, 2021), examining reliability and validity aspects (Gitunga & Mugambi, 2021), examining feasibility of the research process (Cantwell & Petersen, 2021), strengthening the data collection instrument, and procedures (Gama & Alves, 2021).

The pilot study targeted 10% of the sample size (Gathii *et al.*, 2019). Since the pilot study aimed to strengthen the final study, it was undertaken under similar contexts to the final study (Mugenda & Mugenda, 2019). In this regard, the pilot study was undertaken among pharmaceutical distributors serving the informal settlements using respondents from departments that were not included in the final survey. This ensured that the sample was to a

great extent similar to that of the main study in terms of the experience, knowledge of the context and industry as well as the operation of the study constructs in the selected context.

The results of the pilot study are presented in Table 4

**Table 4: Pilot Study Results**

| <b>Variable</b>       | <b>No. of Item</b> | <b><math>\alpha</math> Score</b> |
|-----------------------|--------------------|----------------------------------|
| Servant Leadership    | 38                 | 0.952                            |
| Market Entry Barriers | 11                 | 0.927                            |
| Sustainability        | 5                  | 0.887                            |
| Social Innovations    | 36                 | 0.817                            |

**Source: (Survey Data, 2024)**

### ***Validity of the Instruments***

The validity of the research instruments is key to the generalizability of the research results in the context of servant leadership. According to Morin *et al.* (2021) and Nunkoo *et al.* (2021), the validity of the research instruments refers to the research instrument's ability to measure what it has been designed for or what it purports to measure.

Major themes or underlying theories were examined to assess construct validity. Construct validity is how well the researcher transforms or translates a behavior, idea, or concept, which is referred to as a construct, into an operating and functioning reality; the operationalization (Taherdoost, 2016). Additionally, the researcher analyzed the literature to find pertinent concepts, allowing for the identification of numerous dimensions and concepts related to the study area. Content validity is the degree to which a test assesses all aspects of a topic, construct, or behavior it was designed to evaluate. An augmented degree of validity indicates that the measures are ideal for understanding servant leadership in this case.

### ***Reliability of the Instruments***

The reliability of the instruments refers to the ability of the research responses to be replicable over time, or across the test item, or amongst equivalent research instruments

(Gathii *et al.*, 2019). This study was concerned with measuring the replicability of the research responses across the test item, which is the questionnaire. In this context, internal reliability was examined in this study. According to Connaway and Radford (2021) and Grinnell (2021), internal reliability refers to the explicability of the responses across a multi-item scale being used to measure a summated scale. On the other hand, the summated scale refers to the scale in which will be measured by several opinion-based questions (multi-item scale) and which will then be summated or composited in the measurement of that variable (Alston & Bowles, 2003; Biggs *et al.*, 2021).

The Cronbach alpha coefficient was used to check internal consistency or internal reliability of the set items in this study. According to LoBiondo-Wood and Haber (2021), the Cronbach alpha coefficient has values ranging from 0 to +1, with thresholds of 0.7 deemed sufficient for establishing internal reliability. This study utilized the Cronbach alpha coefficient of 0.7 and above as advocated by Mugenda and Mugenda (2019), Gathii *et al.* (2019), and Orodho (2008).

In the context where the minimum required threshold of 0.7 was not achieved, the researcher examined the item-total statistics. The item-total statistics were utilized in examining the items within the multi-item scales that, on elimination, improve the internal reliability beyond the required minimum threshold of 0.7. The item-total statistics were deployed per variable that has not reached a Cronbach alpha coefficient of 0.7 to identify the indicators that would be eliminated to improve the overall reliability of the rest of the items in a multi-item scale.

### ***Data Analysis and Presentation***

The data analysis is a critical process of the research process. According to Hu *et al.* (2019), data analysis refers to cleaning up the raw data and modeling it to gain useful

research insights. This study undertook a quantitative data analysis. According to Gathii *et al.* (2019), quantitative data analysis refers to the data analysis that serves to analyze the data that is in the form of numbers that is quantitative data. The quantitative data analysis was undertaken using IBM® SPSS® Amos version 21, which is a Structural Equation Modeling (SEM) software that allowed the researcher to have access to multivariate analysis approaches, including regression, structural diagrams, factor analysis, and correlation (Hosseinabadi *et al.*, 2018). The software allowed the researcher to construct behavioral and attitudinal models that reflect complicated associations more precisely than techniques using standard multivariate statistics methods.

The process started with the data cleaning aspects. According to Kulas *et al.* (2021), data cleaning refers to eliminating questionnaires with challenges such as non-responses, outliers, and identifiers. While there are statistical procedures for missing responses, this study omitted such responses for better accuracy. The study then undertook data coding. According to George and Mallery (2021) and Ruben (2021), data coding refers to the process of allocating mostly numeric values to represent the responses provided in the structured questionnaires with a view of creating a numeric spreadsheet on IBM's SPSS AMOS that would be representative of the responses provided by all the respondents. The data coding was then followed by the data entry process. According to Jasrai (2020), data entry refers to inputting the numeric values that represent the responses provided in the questionnaires. After data entry process, the data was ready for the data analysis process.

### ***Descriptive Statistics***

The study undertook descriptive statistics. According to Gathii *et al.* (2019), descriptive statistics refers to the statistics used to describe and organize data. According to Phillips *et al.* (2021), the function of descriptive statistics is to describe, summarize, organize

and present data in a way that is simple to understand. The frequency distributions, means, and standard deviations were used regarding descriptive statistics. The frequency distribution refers to the graphical or tabular representation of observations made per given response options (Waltrip, 2021). The study used the frequency distributions in both raw observations as well as percentages with a view of determining frequency distributions of the response options of structured questionnaires.

The study also presented the means and standard deviations of the structured data. Since the questionnaire which were used for the data collection were Likert-based in nature, the mean was used for determining the average opinions of the respondents (Shayib, 2018). The standard deviation was used in the study. According to Jaccard and Becker (2021), the standard deviation is the positive square root of the variance. The standard deviation examined the average deviation of the individual responses relative to the mean. This enabled the researcher to determine on whether there was amongst the respondents on the indicators being examined.

### **Diagnostic Tests**

The study performed several diagnostic tests. These tests aimed to ensure that the various assumptions underpinning the regression approach used to analyze data and test the study hypothesis are complied with. The relevant tests the study performed are for normality, multicollinearity, and heteroskedasticity aspects.

### ***Normality Test***

The normality of the residuals is a major assumption of the regression analysis as a parametric statistic based on distribution of data (Chen & Chen, 2021). This study used the Shapiro-Wilk test to examine the residuals' normality in a regression model. According to

Gaciu (2020), the Shapiro-Wilk test is best one for determining normality because it has higher power for testing for normality than alternative tests like Kolmogorov–Smirnov. The Shapiro-Wilk tests examined the normality of the regression analysis through testing at a 5% level of significance the null hypothesis that variable distribution is from a normal distribution (Waltrip, 2021). Apart from being the most widely and popular method to test normality, the Shapiro-Wilk test has more power to detect normality. The achievement of p-value less than 0.05 led to the rejection of the null hypothesis and the inference that the residuals are not from a normal distribution.

### ***Multicollinearity***

The study subjected the data to tests that would ensure that there are no multicollinearity challenges. According to Hayes (2013), multicollinearity challenges that arise during regression analysis refer to the predictor variables having high levels of correlations in a way that the unique involvement of each variable to the variance in the outcome variable is undermined. The study relied on the test for multicollinearity challenges that uses Tolerance and Variance Inflation Factor (VIF). In this context, Denis (2021) asserts that researchers use VIF and its reciprocal tolerance to test for challenges in multicollinearity, with a tolerance of  $< 0.1$  and a VIF of  $> 10$  indicating the presence of multicollinearity challenges. This study thus adopted those thresholds in the examination of multicollinearity challenges.

### ***Heteroskedasticity***

The study also examined whether there are challenges of heteroskedasticity in the data. According to Fox (2016), heteroskedasticity is whereby regression models have regression residuals that lack a constant variance. Heteroskedasticity problems in a regression

model arise when they cause wrong statistical inferences due to the unreliability of the t and F tests within such models (Kaptein & Edwin, 2021; Pituch & Stevens, 2015). The Breusch–Pagan (BP) test was used to examine heteroskedasticity. According to Cleophas and Zwinderman (2021), the BP tests regress the squared regressions on the residuals with a p-value of less than 0.05, leading to a conclusion of the presence of heteroskedasticity challenges. The null hypothesis ( $H_0$ ) posits that there is no heteroscedasticity present in the regression model.

### ***Linearity Test***

The diagnostic test for investigating whether the assumption of linear regression has been violated or not was conducted on this study. The regression model between the servant leadership (independent variable) and sustainability (dependent variable) was conducted using linearity test. The test adopted a significance level of 0.05 to determine the linear relationship of the study variables by looking at the data residue versus the fitted plot. The test is of significance in ensuring the relationship between the predictor and outcome variable is linear, or detecting bias changes across the reference values along the horizontal lines on scatter plot. Therefore, the test of linearity helped in testing the consistency of measurements across an entire reference values.

### **Inferential Statistics and Hypotheses Testing**

Inferential statistics was considered to be critical for this study. The goal of inferential statistics is to allow the researcher to examine their hypothesis and determine whether a certain statistical measurement can result in meaningful conclusion about the way the population is distributed. Since numerous extraneous variables may influence the dependent variable, it is not possible to control and measure all of these effects. Thus, even if an

observed sample may appear to have related variables, that may not be generalizable to the population; hence, inferential statistics are only probabilistic (Fox, 2016). For that reason, it is critical to establish whether there is a significant relationship between two variables. Notably, a statistical result is considered significant if it can be determined that the likelihood of it being rejected due to chance is  $>$  or equal to 5. The probability is what is referred to as p-value, 5% is regarded as the significance level ( $\alpha$ ) (Darlington & Hayes, 2017; Hayes *et al.*, 2017). Further, the anticipated association between  $\alpha$  and the p-value is denoted as:  $p \leq 0.05$ .

The study utilized Structural Equation Modelling as it is a multivariate approach that incorporates several equations (models) and tests. In this study, the goal was to determine whether a relationship is evident between servant leadership and sustainability as well as the moderating effects of market barriers. The relationship between servant leadership and sustainability is linear, which means that a linear regression model can be used to determine the effect of this association. However, both these variables are latent, which means that they are not directly observable; hence, the need for the SEM approach.

Further, several complex relationships, direct and indirect, were evident in the study, based on the study's hypothesis. Since the goal of SEM is to identify an ideal model identification, whereby unique values can be uncovered in estimating the parameter, a positive value was generated for the number of degrees of freedom,  $df$ , when the model is tested. Further to measure "goodness of fit," coefficient of determination, R-squared ( $R^2$ ) determines whether proposed model fits the observed data and to what extent (Cleophas & Zwinderman, 2021). Thus, it is critical in hypothesis testing. . The general regression model was as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon \dots \dots \text{model (1)}$$

Where;

$\beta_0$  = Constant

Y = Sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi County

$X_1$  = Empathic Servant Leadership

$X_2$  = Ethical Servant Leadership

$X_3$  = Persuasive mapping

$X_4$  = Altruistic Servant Leadership

$\epsilon$  = Margin of error

Thus, this study sought to test the six hypotheses of the study as summarized in the table below.

**TABLE 4 RESEARCH HYPOTHESES AND THEIR STATISTICAL TESTS**

| Hypothesis                                                                                                                                                                                                   | Statistical Test                                                                                                                                                                                                                                                                                                                                                                                                                   | Interpretation                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <b>H<sub>01</sub>:</b> There is no statistically significant effect of empathic servant leadership on the sustainability of pharmaceutical distributors in the informal settlements areas in Nairobi County. | $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon \dots \dots \text{model (1)}$<br>Where;<br>$\beta_0$ =<br>Y = Sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi County<br>$X_1$ = Empathic Servant Leadership<br>$X_2$ = Persuasive mapping<br>$X_3$ = Ethical Servant Leadership<br>$X_4$ = Altruistic Servant Leadership<br>$\epsilon$ = Margin of error | Value of Adj $R^2$ , which estimates the fit of the model”<br>if $p < 0.5$ , Reject $H_{01}$ |
| <b>H<sub>02</sub>:</b> There is no statistically significant effect of ethical servant leadership on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi County.   |                                                                                                                                                                                                                                                                                                                                                                                                                                    | Value of Adj $R^2$ of the model:<br>if $p < 0.5$ , Reject $H_{02}$                           |
| <b>H<sub>03</sub>:</b> There is no statistically                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                              |

|                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>significant effect of servant leadership by persuasive mapping on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi County.</p> <p><b>H<sub>04</sub>:</b> There is no statistically significant effect of altruistic servant leadership on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi County.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p>Value of Adj R<sup>2</sup> of the model:<br/>if <math>p &lt; 0.5</math>, Reject H<sub>03</sub></p> <p>Value of Adj R<sup>2</sup> of the model:<br/>if <math>p &lt; 0.5</math>, Reject H<sub>04</sub></p> |
| <p><b>H<sub>05</sub>:</b> There is no statistically significant mediating effect of social innovation on the relationship between servant leadership and the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi County.</p>                                                                                                                                  | <p>Four Regression Models</p> <p><math>Y = \beta_1 + \beta_2 X</math>.....Model 1</p> <p><math>M = \beta_3 + \beta_4 X</math>.....Model 2</p> <p><math>Y = \beta_5 + \beta_6 M</math>.....Model 3</p> <p><math>Y = \beta_7 + \beta_8 X + \beta_9 M</math>.....Model 4</p> <p>Where;<br/>Y= Sustainability of pharmaceutical distributors in informal settlement areas in Nairobi County<br/>X = Composite of Servant Leadership<br/>S= Social Innovation</p> <p><math>\beta_1, \beta_3, \beta_5, \beta_7</math>= Constants for the regression models</p> <p><math>\beta_2, \beta_4, \beta_6, \beta_8</math>=Coefficient of the independent variable in the regression models</p> <p><math>\beta_6, \beta_9</math>= Coefficients of the mediating variable</p> | <p>Change in Adj R<sup>2</sup></p> <p>Change in <math>\beta X</math> at <math>p &lt; 0.05</math></p>                                                                                                        |
| <p><b>H<sub>06</sub>:</b> There is no statistically significant moderating effect of</p>                                                                                                                                                                                                                                                                                                            | <p>Three Regression Models:</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p><math>\beta_9 (X * M)</math> at <math>p &lt; 0.05</math>, Accept H<sub>A</sub></p>                                                                                                                       |

|                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| <p>market entry barriers on the relationship between servant leadership and the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi County.</p> | <p> <math>Y = \beta_1 + \beta_2 X</math>.....<i>Model 1</i><br/> <math>Y = \beta_3 + \beta_4 X + \beta_5 M</math>.....<i>Model 2</i><br/> <math>Y = \beta_6 + \beta_7 X + \beta_8 M + \beta_9 (X * M)</math>.....<br/> <i>Model 3</i> </p> <p>Where;<br/> Y= Sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi County<br/> X = Composite of Servant Leadership<br/> M= Market Entry Barriers</p> <p> <math>\beta_1, \beta_3, \beta_6</math>= Constants for the regression models<br/> <math>\beta_2, \beta_4, \beta_7</math>=Coefficient of the independent variable in the regression models<br/> <math>\beta_5, \beta_8</math>=Coefficients of the Moderating variable<br/> <math>\beta_9</math>=Coefficient of the Interaction Term<br/> (X*S)= Interaction Term </p> | <p>Change in Adj R<sup>2</sup></p> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|

Source: Author (2024)

### **Structural Equation Modelling**

Structural Equation Modelling (SEM) is a multivariate analysis approach mostly employed by social scientists. It has its roots in path analysis which was invented by Wright (Hox & Bechger, 1999). Researchers follow six steps of SEM, including the specification of the model, its identification, preparation of data, screening of the data, which is followed by estimation, assessment, and modification (Syafiq *et al.*, 2022). A SEM analysis requires the researcher to draw a path diagram. SEM was appropriate for this study, as it allowed the researcher to study complex relationships. IBM SPSS AMOS 21 were used for the analysis.

SEM can be used to analyze measurement and structural models (Meyers *et al.*, 2013). The approach analyses simple associations between variables as well as complicated measurement equivalence for higher and first-order constructs (Fan *et al.*, 2016). SEM allows researchers to create flexible frameworks for assessing multiple variables and their interrelations. In turn, they can use empirical models to test the theory's validity. One significant advantage of this approach is that it allows researchers to address measurement error.

Structural equation modelling allows researchers to specify confirmatory factor analysis models. Confirmatory Factor Analysis (CFA) and Exploratory Factor Analysis (EFA) are the standard statistical techniques for creating measuring instruments (Orcan, 2018; Syafiq *et al.*, 2022). EFA determines the association between indicators while coming up with a structure. When a study lacks basic information, researchers use this factor analysis to classify several indicators into variables, which later form a parameter (Orcan, 2018; Syafiq *et al.*, 2022). On the other hand, researchers use CFA to evaluate whether pre-conceptual and observational data are compatible. It also assesses the theoretical-based approaches that generate hypothetical causal connections among observed indicators and their variables. Unlike EFA, CFA assumes that indicators should be part of a certain latent variable.

The hypothetical model for this study was based on empirical research and theoretical framework. The researcher used CFA to determine the reliability and validity of the instrument and establish whether the variables qualify as good indicators. Syafiq *et al.* (2022) contend that a CFA analysis determines whether an indicator can effectively explain a variable. For an indicator to be regarded as valid, its loading factor value should be  $>.3$  (Arifin & Yusof (2016) Once the researcher determined that the overall model is good, an estimation of the research hypothesis was critical.

Structural equation modeling (SEM) was used to test the study hypothesis. Usually, the researcher evaluates goodness-of fit using several model fit indices. These indices aim to determine the association between the theoretical and observed data, which would be anticipated from the model (Alavi *et al.*, 2020). Evaluating goodness-of-fit is a critical step in CFA as it allows the researcher to determine whether the proposed model is fit for the data observed. For this study, model fit was determined using the chi-square likelihood ratio statistic, the normed fit index (NFI), the root mean square error of estimation (RMSEA), the goodness of fit index (GFI), and the comparative fit index (CFI).

The chi-square likelihood statistics tests the difference between the theoretical and empirical models. An insignificant outcome at a 0.05 threshold is attributed to a good model fit (Hooper, 2008). Researchers use chi-square as an absolute fit index, such that when the value of the chi-square is lower than the degrees of freedom, which implies a higher p-value, then this indicates a better model fit (Alavi *et al.*, 2022). The aim of this test to reject the null hypothesis that represents perfect fit; hence, it is often referred to as a ‘lack of fit’ or ‘badness of fit’ index (Kline, 2005). Overall, it is recommended to use several fit indices as they offer a holistic assessment of goodness of fit by accounting for complexity of the proposed model, sample size, and other aspects relevant to the study.

Global model fit indices are divided into three, including comparative or incremental, absolute, and parsimony fit indices. Absolute indices, such as RMSEA and GFI, are critical as they determine how well the proposed model fits the sample data relative to no model. The approximation error between the observed covariance and the hypothesized model’s covariance is measured by the RMSEA (Meyers *et al.*, 2013). An insignificant outcome at a 0.05 threshold is attributed to a good model fit (Hooper, 2008). A good RMSEA value should be below 0.08 (Syafiq *et al.*, 2022). Further, Hosseinabadi *et al.* (2018) contend that the

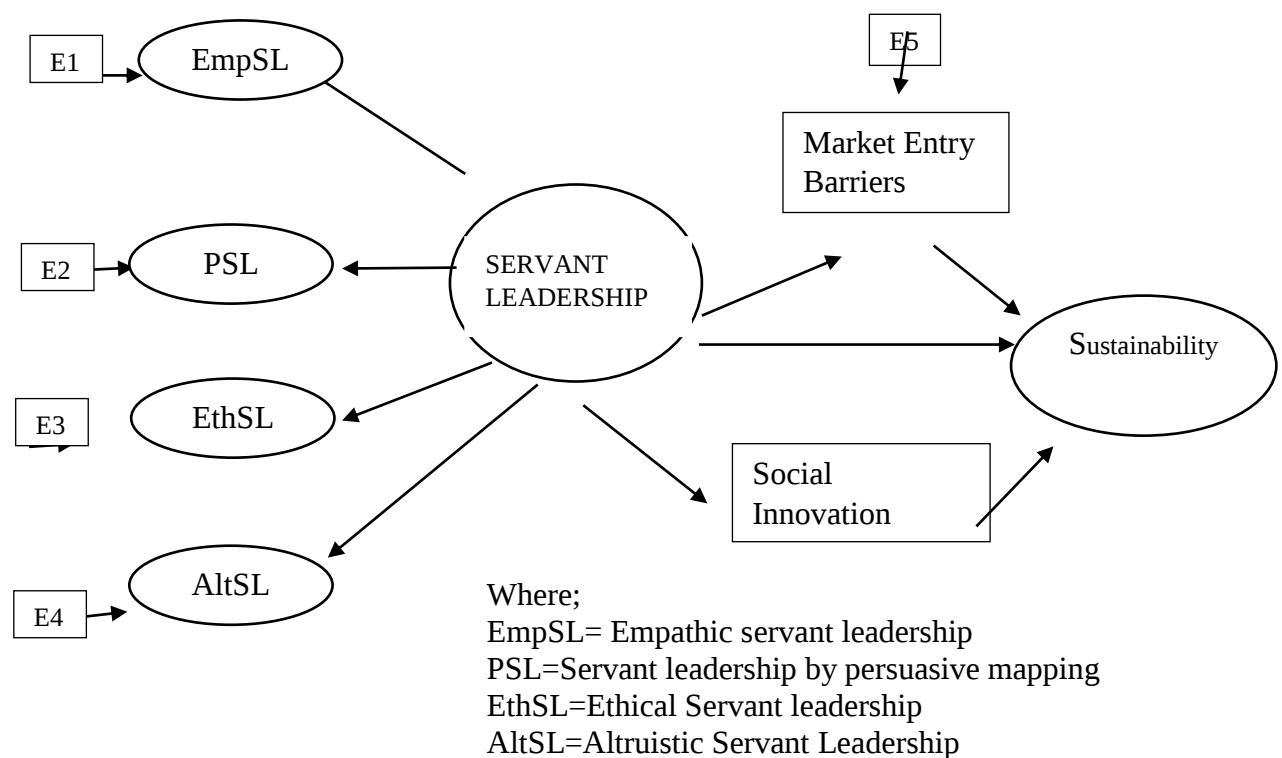
goodness of fit index (GFI) shares the same concept as the R-Squared value in multiple linear regression. GFI can measure the amount of variance and covariance accounted for by the model. For a better fit model, a high GFI value is desired, and the score should be  $>$  or equal to 0.90 (Syafiq *et al.*, 2022).

On the other hand, incremental fit indices, such as the comparative fit index (CFI), and the normed fit index (NFI), are critical to this study as they offer an improved fit for the proposed model instead of assuming the independence of the variables. The NFI analyses the difference between the hypothesized and null models' chi-square values. The difference between the empirical data and the theoretical model is analyzed CFI, which should be  $>$  or equal to 0.09. When it comes to the indices that were reported in this study, several researchers, including Crowley and Fan (1997); Hu and Bentler (1999); and Kline (2005), recommend including the RMSEA and its related confidence interval; the Chi-Square statistic, its p-value, and degrees of freedom; the CFI; the standardized root mean square residual (SRMR); and at least one fit index for parsimony, for example, the parsimonious normed fit index (PNFI) (Hooper *et al.*, 2008). Parsimonious fit indices penalize the researcher for model complexity, which results in a trade-off between degrees of freedom and model fit (Alavi *et al.*, 2020). The indices mentioned above were preferred over others as they as they were most insensitive to misspecification of the proposed model, parameter estimates, and sample size.

In this study, the goal was to assess whether incorporating servant leadership can address sustainability issues among pharmaceutical distributors in Nairobi County. The independent and dependent variables are latent and cannot be directly observed. The use of CFA is the most suitable as it will allow the researcher to evaluate the ability of the study's indicators to explain the variables. SEM also allows analysis of the effect of mediation

(Social Innovation) on servant leadership and sustainability. Baron and Kenny (1986) propose four steps to establish whether mediation is significant. Firstly, the researcher observes the effect of the independent variable (X) on (Y). The next step is to explore the effect of X on the mediating variable (M), then establish the effect of M on Y. Finally, it is critical to establish whether M fully mediates the effect of X on Y. Structural equation modelling was this study's most preferred statistical technique since the data collected contained latent variables. SEM helped the researcher evaluate the structural model as well as the measurement model. The chart below demonstrates the path analysis for the SEM in this study.

**FIGURE 2: PATH ANALYSIS FOR THE SEM IN THE STUDY**



**Source :** Author, (2024)

### ***SEM Application in the Study***

SEM was considered as the appropriate statistical technique for analysing and presenting the data, investigating the effect of Servant Leadership on Sustainability. Previous researches had called on future research to consider modelling Servant Leadership and its phenomenon using more rigorous statistical techniques. According Shumaker and Lomax (2004) SEM is applicable in situations where researchers are interested in understanding the factorial structure of measurement instruments as well as make comparisons on the differences in factorial structures across groups of participants. Thus, SEM was found suitable for identifying the factorial structure of the components that make up Servant Leadership and use the SEM to relate with corresponding outcomes of the components of business sustainability. In addition, SEM allows a researcher to model the mediation path by which the effect of Servant leadership is transmitted from the independent variables to the outcome variable. SEM also allows a researcher to assess separate effects of each of the components of the independent variables and components of the outcome variables. The current research applied SEM using the IBM SPSS AMOS 21. The AMOS version allowed the researcher to analyse the data in a way that will bring out diverse statistical techniques that included exploratory factor analysis (EFA), Path analysis, confirmatory factor analysis (CFA), causal modelling with latent variables and multiple linear regression.

The AMOS Version 21 used in the study, requires that the researcher specifies the model based on theory and determine how to measure constructs. This was attended to in the conceptual frame work that identified the study constructs, their operational indicators and relationships that were expressed through hypothesis. Each construct was given an appropriate operational definition based on extant conceptual, theoretical and empirical literature. The operational indicators were then used in the construction of the research

instrument that was used in the process of variable measurements in the form of the Five Point Likert Scale.

The SEM has a number of assumptions that the researcher and data need to comply with. The first assumption is on sample size where some debate points to the need for a sample size of not less than 150. Secondly, SEM works with a continuously and normally distributed endogenous variables. In addition, SEM requires model identification whereby the relationships under investigation is expressed in a linear form thus calling for compliance in the linearity assumption. Then finally, SEM works with complete data on all sets of variables measured in the relationships being investigated. The SEM data analysis outputs from Amos has several components as:

**Variables:** The SEM output distinguishes the roles of different variables. Independent or exogenous variables, or upstream variables and the dependent and mediating variables are those that the researcher has measured without an error. These are variables that the researcher measures through the observation. Latent or unobserved variables, are the variables that are inferred by the relationships or correlations among measured variables in the analysis. The observed and latent variables are represented differently from the Amos output.

**Path Diagram:** which represents relationships among observed and unobserved variables. The path diagram has outputs presented in circles or ovals, rectangles or squares and arrows. The ovals or circles, represent latent variables while the rectangles or squares represent measured variables. The residuals, are unobserved and are represented by ovals or circles while correlations and covariance's are represented by bi-directional arrows which represent relationships without explicitly defined causal direction. The causal effects are represented by single headed arrows in the path diagram.

**Model fit :** The Amos output produces several output categories used to evaluate the global model fit. The first category has a collection of fit measured in five columns that highlight the default model with fit statistics and baseline comparison model or saturated and independent model, the second category focus on test of absolute fit , which presents outputs on chi square test of overall model fit, called as discrepancies. The third one, presents test of relative fit, using TLI, CFI, the RMSEA (Route mean square error of approximation) and the standardised route mean residual (SRMR).

In the path diagram, the values for covariance and correlation are showed along the bi-directional arrows, whereas the coefficient for the relationship between an observed exogenous variable and outcome variable is shown in the causal direction arrow. The strength of the relationship that is explained in the relationship appears on top of the outcome variable rectangle or square as the equivalent of r- squared value.

### **Procedure for Data Analysis**

In view of the nature of SEM data analysis, as facilitated by Amos 4.0 version, data analysis was undertaken in a logical sequence to bring out the outputs in conformity with, the features of SEM and its assumptions. Data analysis was carried out in six steps:

**Step 1: Exploratory Factor Analysis (EFA)** – Exploratory factor analysis was performed on the Likert five point, structured questions for all observed variables. The study had four types of variables; the independent, mediating, dependent and moderating variables. EFA was applied on the independent, mediating and dependent variables so as to identify the set of combinations of components that make up each variable as well as eliminate those items included in the measurement scale that were not considered to make significant statistical contribution to the composite variable. Further, the EFA approach applied relied on the

principle component analysis approach in extracting components and those items loading on each component as a result of the correlations identified.

**Step 2 :** This involved establishing the reliability and internal consistency of the retained items from the questionnaire. The reliability results are summarised in Table 4

**Step 3 : Variable descriptive analysis :** This step involved application of descriptive statistics to understand the behaviour of the demographic data or characteristics of respondents and the variables investigated. Frequencies and percentages were obtained on the characteristics of the attributes of the respondents and presented in table 5-8 and Figures 3-5. The descriptive characteristics of the variables were established using measures of central tendency and dispersion of the mean and standard deviation respectively. The means and standard deviations were computed for the extracted components using the retained items for the independent, mediating and moderating while for the dependent the computations were based on the set of items in the measurement instrument administered for field work. The scores on each are summarised in Tables 9-13

**Step 4 : Diagnostic Tests :** The Amos version 4.0 used is by default designed to generate output that falls within the category of diagnostic test. Those that were generated in the cause of the analysis were the KMO, Kolmogorov – Smirnov and Shapiro- Wilk. Over and above these there were tests for multicollinearity carried out to ensure the entire set of applicable assumptions for multiple regression analysis are addressed. The results for the diagnostic analysis for normality, linearity, multicollinearity, heteroskedasticity, and sampling adequacies are presented in Tables 14-17 and Figures 6-12.

**Step 5 : Confirmatory Factor Analysis (CFA):** This was done to provide data for evaluating the model fit in each analysis. The data produced outputs for reporting model fit

on the default model absolute fit and the relative fit. These are presented in the statistical output on the test of each of the study hypothesis.

**Step 6 : Path Analysis :** The path analysis was done to show the factorial structure and the relationship existing among the measured/observed variables. In the analysis, the correlations and covariance among components of the observed variables were brought out while the latent variables were also clearly indicated in the path diagram. The analysis was done to bring out the understanding of the contribution of the components of the independent to the composite dependent variable on the one hand, and the contribution of the components of the independent on the specific components of the dependent variable on the other hand. This was done to allow the researcher obtain sufficient explanation on the causal relations based on the correlations and covariance together with the respective contribution, magnitude and direction of the contribution of the observed independent on the observed dependent. The resulting outputs are therefore discussed in a comparative manner to show how the independent variable contribute to the composite of the independent on the one hand and the contribution of the component of the independent on the component of the dependent on the other hand.

### **Ethical Consideration**

The researcher ensured that the study met diverse ethical considerations. According to Karamagi (2021), the ethical considerations were related to the ethics undertaken in the research process activities. The researcher ensured to first obtained the authority to undertake the study from the National Council for Science and Technology (NACOSTI) by getting a permit. It was also critical to obtain an Ethics Review Committee certificate from PACs University to proceed with the survey. Further, the researcher ensured that all respondents signed a consent statement to secure the informed consent of the respondents. The informed

consent detailed the study's purpose and the respondents' rights as they participate in the study.

In particular, the respondents were advised on their right to voluntarily participate in the study without coercion or promise of benefits. The respondents were also free to exit the survey at any stage without any restriction. They were also guaranteed anonymity, where the questionnaires were labelled P01 up to P168. The researcher did not require that they include their names, and this was communicated to the participants. The respondents were also assured of confidentiality in the processing of the data collected from them.

### **Chapter Summary**

This chapter has outlined the research design and the methodology used in the study. It begins by elucidating the target population under investigation providing clarity on the specific group of demographic being studied. The chapter details the data collection tools and procedures utilized offering insights into how information was to be gathered and organized. This discussed the implementation of the pilot study to refine and validate research instruments ensuring their reliability and effectiveness. The concept of reliability and validity emphasised on the robustness of the data collected. Data analysis and presentation techniques were employed including descriptive analysis to summarize key findings and inferential analysis to draw meaningful conclusions. Diagnostic procedures were also used to assess the quality of data, and equation modelling technique to explore relationship among variables. This chapter provides a clear roadmap for the execution and presentation of the study for the analysis and discussion of the study findings.

## **Chapter Four: Data Analysis and Findings**

### **Introduction**

The chapter presents the findings of the study based on the primary data collected from the sampled respondents in pharmaceutical distributors in informal settlements in Nairobi County. The primary data was collected from the respondents within a period of four months between May and August 2023. The field work distributed 210 questionnaires out of which 168 were received back being fully filled and therefore considered suitable for analysis. According to Mugenda and Mugenda (2019), a satisfactory response rate for a survey study would record a response of 60% or higher is often recognised as satisfactory. Based on this criterion, the response rate for this study was considered suitable for data analysis.

The questionnaires were subjected to a thorough scrutiny while being coded before data entry for incompleteness that would fundamentally affect the suitability of a respondents' data in a way that would influence the quality of the findings. All the 168 questionnaires were found to be complete and therefore qualified for analysis. Several steps were involved in the data analysis process. The raw data was first entered into the SPSS spread sheet where the variables were defined in line with structure of the data collection instrument. The keyed in data to the SPSS spreadsheet were then exported to the AMOS Software to enable the researcher perform the inferential analysis for diagnostic and hypotheses tests in conformity with the SEM Approach adopted in the study. The SPSS software was relied on to perform the descriptive characteristics of the respondents while the

EFA, CFA, Diagnostic tests, path analysis displaying the SEM and the model fit analysis were performed using the AMOS Software.

Since the EFA and CFA are prerequisite steps undertaken as a requirement prior to the path analysis and model fit statistics in the SEM process, the process for analysis engaged in this study produced the necessary statistical outputs for factor analysis, extracted variable components and corresponding descriptive characteristics measured through measures of central tendency and dispersion. The software also undertakes to provide the reliability score for each of the extracted factors. The extracted factors through EFA, the variable reliability scores, descriptive characteristics and diagnostics tests considered necessary were reported after the EFA results for each of the variables in this chapter. The contents first report the characteristics of the respondents from whom the data was obtained then followed by the SEM results that report and interpret findings on each of the study hypotheses.

### **Respondent's Demographic Characteristics**

The first section of the research instrument provided questions that required the respondents to provide data on their demographic characteristics. The demographic characteristics that the researcher included in the instrument were considered valuable in helping understand the attributes of the respondents as well as the context in which the study variables investigated were deployed. The researcher considered that since leadership is an applied practice in society, understanding the characteristics of the persons in leadership as well as the prevailing contextual situation in which they practice leadership would be useful in making interpretations of the manner in which the dimensions of leadership investigated in the study were considered to behave in the context of the study.

Therefore, in this study, the researcher required demographic data on each of the respondents to show their work affiliation in terms of distributors worked for, the leadership position in the organization worked for, their gender, education level and the number of years worked in the respective industry. Each of these attributes were responded to in the form of a nominal scale and the data analysed using frequencies and percentages and reported in this section in the form of frequency tables.

### ***Respondents Distribution***

The study respondents were drawn from sampled pharmaceutical distributors supplying medication to informal settlements in Nairobi County. The pharmaceutical distributors operate under different trading names. The respondents were required to indicate as part of understanding their affiliation, the names of the distributors they worked for at the time of the data collection. The distribution of the respondents across the sampled pharmaceutical distributors is summarised in Table 5

**TABLE 5: PHARMACEUTICAL DISTRIBUTORS SAMPLE DISTRIBUTION**

| <b>Location</b> | <b>Frequency</b> | <b>Percent</b> | <b>Valid Percent</b> | <b>Cumulative Percent</b> |
|-----------------|------------------|----------------|----------------------|---------------------------|
| Highridge       | 7                | 4.2            | 4.2                  | 4.2                       |
| Salama          | 7                | 4.2            | 4.2                  | 8.3                       |
| Foholo          | 7                | 4.2            | 4.2                  | 12.5                      |
| Bibo            | 7                | 4.2            | 4.2                  | 16.7                      |
| Biodeals        | 7                | 4.2            | 4.2                  | 20.8                      |
| Sphinx          | 7                | 4.2            | 4.2                  | 25.0                      |
| Syner           | 7                | 4.2            | 4.2                  | 29.2                      |
| Rangechem       | 7                | 4.2            | 4.2                  | 33.3                      |
| Jurgilinks      | 7                | 4.2            | 4.2                  | 37.5                      |
| Transcem        | 7                | 4.2            | 4.2                  | 41.7                      |
| Mzima           | 7                | 4.2            | 4.2                  | 45.8                      |
| Generics Africa | 7                | 4.2            | 4.2                  | 50.0                      |
| Biloxa          | 7                | 4.2            | 4.2                  | 54.2                      |
| Modana          | 7                | 4.2            | 4.2                  | 58.3                      |
| Dawa            | 7                | 4.2            | 4.2                  | 62.5                      |
| Ripple          | 7                | 4.2            | 4.2                  | 66.7                      |
| Njimia          | 7                | 4.2            | 4.2                  | 70.8                      |

|                 |            |              |              |       |
|-----------------|------------|--------------|--------------|-------|
| Transwide       | 7          | 4.2          | 4.2          | 75.0  |
| Pharma          | 7          | 4.2          | 4.2          | 79.2  |
| Phillips        | 7          | 4.2          | 4.2          | 83.3  |
| Omera           | 7          | 4.2          | 4.2          | 87.5  |
| Nairobi         | 7          | 4.2          | 4.2          | 91.7  |
| Enterprises Ltd | 7          | 4.2          | 4.2          | 95.8  |
| Cosmos          | 7          | 4.2          | 4.2          | 100.0 |
| <b>Total</b>    | <b>168</b> | <b>100.0</b> | <b>100.0</b> |       |

**Source: Survey Data, 2024**

The data in Table 5 indicates that the data was obtained from 24 distributors, each providing seven participants, resulting in a total of 168 respondents. A uniform distribution of participants was observed among the 24 pharmaceutical distributors, each having seven respondents. By having participants from various regions, potential biases are avoided. The diversity of the sample improves the research's applicability and grants more extensive insights into how dissimilar informal settlement areas might react to the interaction of the study variables (Jones et al., 2021). Consequently, the demographic data reinforces the researchers' diligence in creating a representative sample, facilitating ground breaking insights into the research subjects within the specified context (Cocca et al., 2020). Participants working in the different pharmaceutical organisations facilitate analysis of the interplay between leader-servant behaviour, follower actions, organizational framework, project management, and drug distributor durability.

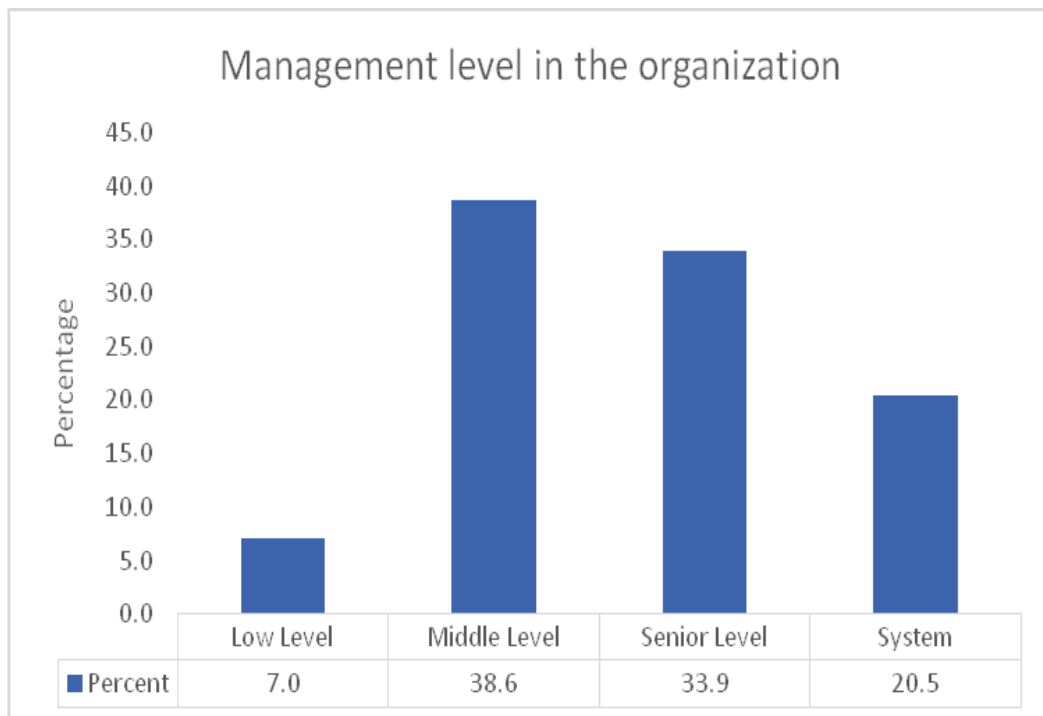
#### ***Leadership/ Management Position of the Respondent***

The second demographic attribute that the research required respondents to respond to as on the leadership position they were serving at the time of the survey. Table 6 and figure 1 present a summary of the frequencies.

**TABLE 6 DISTRIBUTION OF THE MANAGEMENT POSITION**

|              |                   | Frequency  | Percent      | Valid Percent | Cumulative Percent |
|--------------|-------------------|------------|--------------|---------------|--------------------|
| Valid        | CEO               | 24         | 14.3         | 14.3          | 14.3               |
|              | Corporate         | 24         | 14.3         | 14.3          | 28.6               |
|              | Pharmacist        | 24         | 14.3         | 14.3          | 42.9               |
|              | Logistic          | 24         | 14.3         | 14.3          | 57.1               |
|              | Sales & Marketing | 24         | 14.3         | 14.3          | 71.4               |
|              | Finance           | 24         | 14.3         | 14.3          | 85.7               |
|              | HR & Admin        | 24         | 14.3         | 14.3          | 100.0              |
| <b>Total</b> |                   | <b>168</b> | <b>100.0</b> | <b>100.0</b>  |                    |

**Source: Survey Data, 2024**

**FIGURE 1: RESPONDENTS MANAGEMENT LEVEL**

The findings report that each level had 24 participants, which comprised around 14.3% of the overall pool of participants. This well-balanced distribution ensures that the study provides insights into diverse essential roles within pharmaceutical distribution companies including participants with varying leadership roles enables researchers to

understand how the collaboration between servant leadership and market entry hurdles influences the sustainability of pharmaceutical distributors (Sjöström *et al.*, 2023).

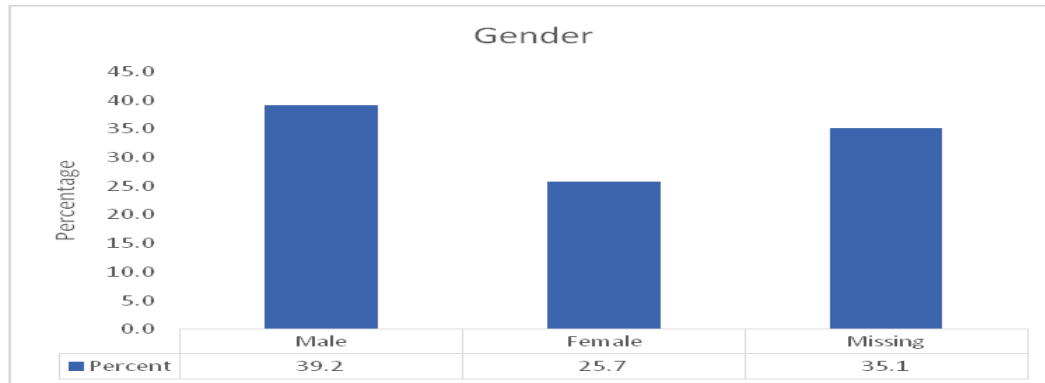
Different job functions can bring varying viewpoints and real-world experiences to better understand industry dynamics (Andrus & Villeneuve, 2022). By including individuals from various job functions, the research was able to explore the unique difficulties encountered by each group in pharmaceutical distribution organizations. Investigating the interaction between servant leadership concepts and sustainability across diverse employment positions enables the research to understand the possible effect of leadership approaches on distinct elements of the pharmaceutical distribution industry. Including representatives from various job positions illustrates the researchers' commitment to comprehensive research. According to Jones *et al.* (2021), equitable dissemination of demographic details throughout job positions improves the researcher's ability to generalize discoveries. Therefore, the presented data reflects the study's rigorous approach to demographic representation and highlights the significance of considering multiple job positions in examining the relationship between servant leadership and sustainability within the pharmaceutical sector.

### ***Gender of Respondents***

Data on the gender breakdown among participants was obtained. The results on the distribution of the respondents according to their gender is summarised in Table 7 and Figure 2.

**TABLE 7: GENDER DISTRIBUTION**

|              |        | Frequency  | Percent      | Valid Percent | Cumulative Percent |
|--------------|--------|------------|--------------|---------------|--------------------|
| Valid        | Male   | 65         | 38.7         | 60.2          | 60.2               |
|              | Female | 43         | 25.6         | 39.8          | 100.0              |
|              | Total  | 108        | 64.3         | 100.0         |                    |
| Missing      | System | 60         | 35.7         |               |                    |
| <b>Total</b> |        | <b>168</b> | <b>100.0</b> |               |                    |

**Figure 2: Respondents' Gender**

**Source: Survey Data, 2024**

The demographic analysis highlights a distinct disparity between male and female participants. Further, 60 individuals (35.7%) failed to provide their gender details, creating missing data issues. Even with gender disparities, the study collected numerous valuable responses from both genders. According to Moreira *et al.* (2023), researchers that endeavour to gather information on gender demonstrate their dedication to grasping potential gender-related distinctions. In this case, a more complete analysis of the research topic was achieved by considering the perspectives of both genders. Also, gender representation enabled the study of gender-related patterns, experiences, and challenges in the pharmaceutical industry (Lee *et al.*, 2020).

### ***Educational Level of Respondents***

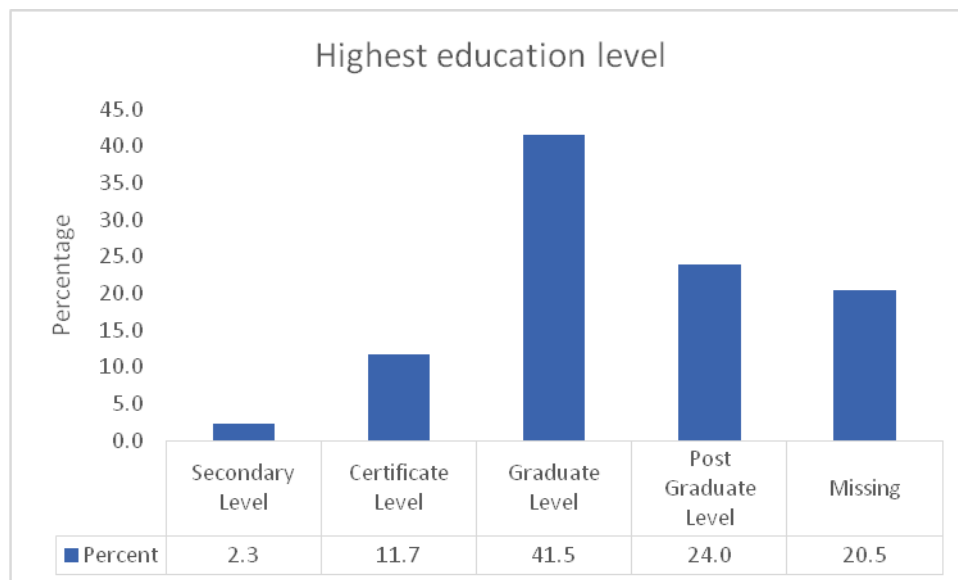
The study sought to investigate the participants' highest level of education. The results on the characteristics of the respondent level of education were presented in distribution frequency and percentages as shown in Table 8.

**TABLE 8: DISTRIBUTION OF RESPONDENT LEVEL OF EDUCATION**

|              |                     | Frequency  | Percent      | Valid Percent | Cumulative Percent |
|--------------|---------------------|------------|--------------|---------------|--------------------|
|              | Secondary Level     | 4          | 2.4          | 3.0           | 3.0                |
|              | Certificate Level   | 19         | 11.3         | 14.2          | 17.2               |
|              | Graduate Level      | 70         | 41.7         | 52.2          | 69.4               |
|              | Post Graduate Level | 41         | 24.4         | 30.6          | 100.0              |
|              | <b>Total</b>        | <b>134</b> | <b>79.8</b>  | <b>100.0</b>  |                    |
| Missing      | System              | 34         | 20.2         |               |                    |
| <b>Total</b> |                     | <b>168</b> | <b>100.0</b> |               |                    |

Source: Survey Data, 2024

**FIGURE3: RESPONDENT EDUCATION LEVEL**



Out of the 168 participants surveyed, only 134 (79.8%) responded by providing information on their educational level. 52.2% of valid responses indicate that participants have achieved a Graduate Level qualification. A considerable number of participants had undergraduate qualifications. Participants that had advanced their studies to the postgraduate level represented 30.6% of the total respondents. 14.2% of the respondents had a certificate-level certification, while only 3% had high school certification. The findings indicate a significant number of participants had advanced qualifications.

However, 34 individuals failed to provide information on their highest educational achievement, resulting in missing data. Despite this, the investigation still represented a sizable pool of reliable responses, enabling insightful examination. According to Yang *et al.* (2021), the educational backgrounds of people can affect their understanding of servant leadership and sustainability practices. In this case, the need to collect information on participants' highest educational attainment is to ensure they have the competency to respond to issues affecting the pharmaceutical sector.

### **Location of doing Business**

The study sought to find out where the distributors perform their business. The demographic analysis reveals that the majority of businesses are located in Nairobi CBD, which accounts for 53.9% of the valid responses from a total of 143 valid entries. Mombasa Road is the second most common location, comprising 29.1% of the valid responses. Other business areas, including Westlands, Thika Road, and Parklands, collectively represent a smaller fraction, with each contributing between 5% and 6.4%. This distribution highlights a concentration of business activity in Nairobi CBD and Mombasa Road, underscoring their prominence as key commercial hubs. The survey also noted a 17.5% rate of missing

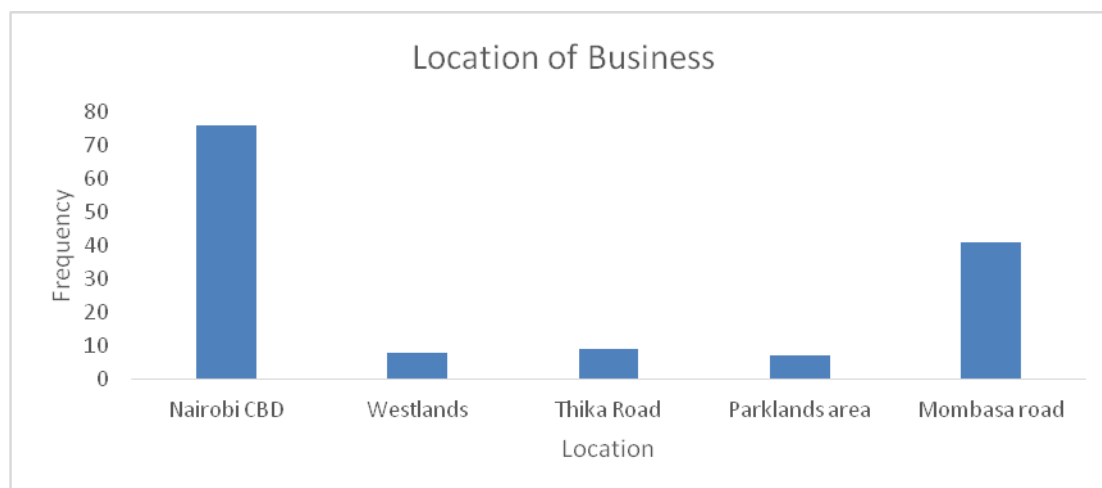
responses, leaving room for potential gaps in the data. Table 9. And Figure show the representation of the survey.

**TABLE 9: LOCATION OF DOING BUSINESS**

| Location       | Frequency  | Percent      | Valid Percent | Cumulative Percent |
|----------------|------------|--------------|---------------|--------------------|
| Nairobi CBD    | 76         | 44.4         | 53.9          | 53.9               |
| Westlands      | 8          | 4.7          | 5.7           | 59.6               |
| Thika Road     | 9          | 5.3          | 6.4           | 66.0               |
| Parklands area | 7          | 4.1          | 5.0           | 70.9               |
| Mombasa road   | 41         | 24.0         | 29.1          | 100.0              |
| Total          | 143        | 82.5         | 100.0         |                    |
| Missing System | 25         | 17.5         |               |                    |
| <b>TOTAL</b>   | <b>168</b> | <b>100.0</b> |               |                    |

Source: Survey Data, 2024

**FIGURE 4: LOCATION OF DOING BUSINESS**



### Informal settlement areas served

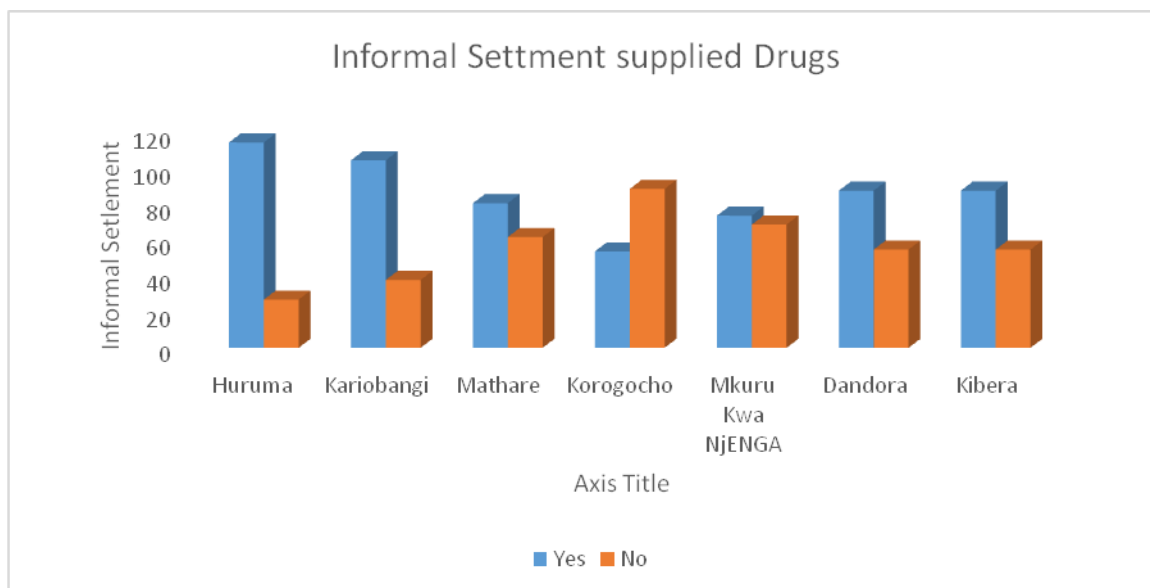
The study required the respondents to indicate the informal settlements in which the drugs are supplied to. Table 10 summarises the frequencies on the responses from the 168 respondents.

**TABLE 10: INFORMAL SETTLEMENT AREAS SUPPLIED TO**

| Informal Settlement | Yes | No  |
|---------------------|-----|-----|
| Huruma              | 115 | 27  |
| Kariobangi          | 105 | 38  |
| Mathare             | 81  | 62  |
| Korogocho           | 54  | 89  |
| Mkuru Kwa Njenga    | 74  | 69  |
| Dandora             | 88  | 55  |
| Kibera              | 88  | 55  |
| Total               | 143 | 143 |
| Missing Values      | 25  | 25  |
| TOTAL               | 168 | 168 |

Source: Survey Data, 2024

**FIGURE 5: INFORMAL SETTLEMENT SUPPLIED DRUGS**



The demographic analysis of informal settlements regarding drug supply, as depicted in the chart, shows that Huruma and Kariobangi have the highest incidence of drug supply, with 115 and 105 "Yes" responses respectively. Mathare follows with 81 "Yes" responses, indicating a moderate presence of drug supply, while Korogocho has the least with only 54 "Yes" responses. Mkuru Kwa Njenga also shows moderate drug supply with 74 "Yes" responses. Both Dandora and Kibera have a balanced yet notable presence of drug supply, each with 88 "Yes" responses. This data highlights significant variations in the prevalence of drug supply across these settlements, providing key insights into the demographic landscape.

### **Key defining Characteristics of Areas Served**

To be able to describe the characteristics of the informal settlement areas served, the research instrument required the respondents to identify some of the defining characteristics of the settlement areas. Table 11 and figure 6 summarise the frequencies.

**TABLE 11: CHARACTERISTICS OF INFORMAL SETTLEMENT AREAS SERVED**

| <b>Define Characteristics</b> | <b>Yes</b> | <b>No</b> | <b>Missing</b> | <b>Total</b> |
|-------------------------------|------------|-----------|----------------|--------------|
| High population               | 108        | 35        | 25             | 168          |
| Low income                    | 94         | 49        | 25             | 168          |
| Poor road infrastructure      | 81         | 62        | 25             | 168          |
| High insecurity               | 81         | 62        | 25             | 168          |
| High poverty level            | 75         | 68        | 25             | 168          |
| High literacy                 | 54         | 89        | 25             | 168          |

**Source: Survey Data, 2024**

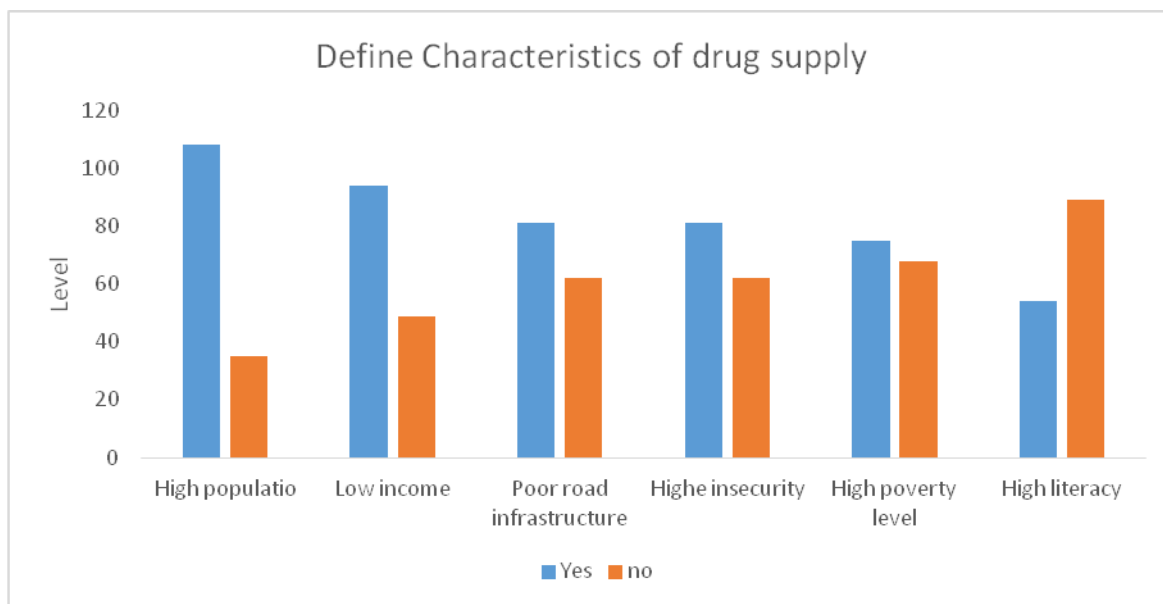
**FIGURE 6: DEFINE CHARACTERISTICS OF DRUGS SUPPLY**

Table 11 presents the demographic characteristics of areas where drugs were distributed, highlighting several key features. A high population was indicated by 108 respondents, making it the most prevalent characteristic. Low income was also significant, with 94 respondents marking "Yes." Poor road infrastructure and high insecurity were each noted by 81 respondents, suggesting substantial challenges in these areas. High poverty levels were reported by 75 respondents, while high literacy was the least common characteristic, with only 54 affirming it. A total of 143 respondents filled out the questionnaire correctly, while 25 responses were missing, likely due to differences in departmental placements. This data effectively captures the diverse and challenging conditions in the areas of drug distribution which is reflected in figure 6 as well.

### **Descriptive Statistics**

The descriptive characteristics of the variables investigated in the study were obtained through a combination of techniques. Exploratory Factor Analysis (EFA) was first applied on the independent, mediating and moderating variables so as to extract items from the instrument used to collect primary data that load significantly on each study construct. The EFA relied on the varimax technique to extract the items and combine them under several components that comprise each study construct based on the factor loading. After the extraction and identification of the relevant components, descriptive statistics were computed and reported through the mean and standard deviation. For the extracted factors and retained items, the reliability of the respective components was obtained and reported through the components cronbach alpha score value. The set of extracted components, retained items and their corresponding measures of central tendency are reported in this section.

#### ***Descriptive Analysis for Servant Leadership***

Servant Leadership was measured in the study as the independent variable. The section of the research instrument measuring the four variables comprising servant leadership had 39 items that were presented to respondents structured on a 5-point likert scale. The EFA technique was applied to first extract the components that comprise each of the study variables for the independent variable and the set of retained items. Table 12 reports the results of the EFA showing the variables, components extracted for each variable, factor loading and the measures of central tendency and dispersion.

**TABLE 12: FACTOR ANALYSIS FOR SERVANT LEADERSHIP**

| Variable                            | Component<br>s extracted<br>&Assigned<br>label           | Indicators                                                                                                                                | Factor<br>Loading<br>Score | Mean | Std.Dev |
|-------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------|---------|
| Altruistic<br>Servant<br>Leadership | Component<br>1: Altruistic<br>Servant<br>Leadership      |                                                                                                                                           |                            |      |         |
|                                     |                                                          | I put the interests of my team members ahead of mine,                                                                                     | .747                       | 4.26 | .873    |
|                                     |                                                          | I do everything I can to serve my team members                                                                                            | .596                       |      |         |
|                                     |                                                          | I sacrifice my interests to meet the needs of others.                                                                                     | .714                       | 4.1  | .984    |
|                                     |                                                          | I always go beyond the call of duty to meet the needs of others.                                                                          | .775                       | 4.1  | 1.029   |
|                                     |                                                          | I make a lot of personal sacrifice for my team members.                                                                                   | .746                       | 4.15 | 1.051   |
|                                     |                                                          | I have endured many hardships to defend my team members.                                                                                  | .752                       | 3.96 | 1.169   |
| Ethical<br>Servant<br>Leadership    |                                                          |                                                                                                                                           |                            |      |         |
|                                     | <b>Component<br/>2:Honesty</b>                           | I endeavour to do what I promise to my team members                                                                                       | .815                       | 4.38 | .788    |
|                                     |                                                          | I do not compromise ethical principles in order to achieve success                                                                        | .813                       | 4.39 | .797    |
|                                     |                                                          | I seek to always be honest                                                                                                                | .794                       | 4.48 | .805    |
|                                     |                                                          | I value honesty more than profits                                                                                                         | .723                       | 4.43 | .804    |
|                                     |                                                          | I sensitize my team to be very sensitive to ethical problems                                                                              | .630                       | 4.44 | .740    |
|                                     | <b>Component<br/>6:Follower<br/>Personal<br/>Welfare</b> | I emphasise that in my department team members think of their own welfare first when faced with a difficult decision.                     | .782                       | 4.05 | 1.091   |
|                                     |                                                          | I have ensured that in my department team members are willing to break the rules in order to advance in the company.                      | .757                       | 3.64 | 1.564   |
|                                     | <b>Component<br/>7 : Societal<br/>Sensitivity</b>        | I have ensured a work environment in which both the leader and followers around here have a strong sense of responsibility to society and | .748                       | 4.42 | .0871   |

|                           |                                              |                                                                                                                                                              |      |      |       |
|---------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-------|
|                           |                                              | humanity.                                                                                                                                                    |      |      |       |
|                           |                                              | I have sensitized My team to demonstrate sensitivity to ethical problems                                                                                     | .707 | 4.16 | 1.114 |
|                           | <b>Component 10: Personal responsibility</b> | I have nurtured a team of followers who are such that no matter how much people around here are provoked , they always are responsible for whatever they do. | .638 | 3.64 | 1.564 |
| <b>Empathy</b>            |                                              |                                                                                                                                                              |      |      |       |
|                           | <b>Component 3: Feeling For Others</b>       | I am good at understanding how my team members are feeling and what they are thinking                                                                        | .680 | 4.34 | .893  |
|                           |                                              | I try as much as possible to avoid hurting other people's feelings                                                                                           | .686 | 4.30 | .910  |
|                           |                                              | I enjoy caring for others                                                                                                                                    | .719 | 4.43 | .847  |
|                           |                                              | I consider myself to be good at predicting what we will take                                                                                                 | .568 | 4.10 | .973  |
|                           |                                              | I always offer compelling reasons to get my team members to do things.                                                                                       | .518 | 4.13 | 1.017 |
|                           | <b>Component 5: Others Thoughtfulness</b>    | My team members feel comfortable sharing their problems with me as their leader                                                                              | .747 | 4.21 | 1.016 |
|                           |                                              | I am sensitive to the feelings of my team members and colleagues                                                                                             | .507 | 4.36 | .742  |
|                           |                                              | I consider each side to an argument before making a decision                                                                                                 | .567 | 4.34 | .912  |
|                           | <b>Component 8: Detached personality</b>     | <b>I am not interested in sharing others' happiness</b>                                                                                                      | .583 | 3.05 | 1.532 |
|                           |                                              | Followers around me have a strong influence on my mood                                                                                                       | .717 | 3.59 | 1.252 |
|                           | <b>Component 9: Troubled</b>                 | I get very upset when I see someone cry                                                                                                                      | .806 | 4.01 | 1.035 |
| <b>Persuasive Mapping</b> | <b>Component 4; persuasion</b>               |                                                                                                                                                              |      |      |       |
|                           |                                              | I am very persuasive when handling staff                                                                                                                     | .513 | 4.13 | 1.11  |
|                           |                                              | Others consider me to be well gifted when it comes to persuading others.                                                                                     | .760 | 4.13 | .97   |
|                           |                                              | I consider myself to be well gifted in persuading other people.                                                                                              | .782 | 4.18 | .946  |
|                           |                                              | I hold the department's employees to high ethical standards.                                                                                                 | .756 | 4.5  | .850  |

Source : (Survey Data, 2024)

It was observed that EFA reorganised the independent variable to the extent that the four elements of the independent variables were found to comprise different components and elements from the initial measurement instruments. Due to this the independent variable was reorganised and components to each of the four variables done as per the output of the EFA. Ten components were extracted and matched with the 4 study variables alongside the items that comprise each. Each of the components extracted was given a distinct label consistent with the meaning obtained from the set of the retained items for each of the variables. The results indicate Altruistic had one component extracted and six items retained. Ethical and empathy servant leadership each had four items extracted with differing number of items while persuasive mapping had only component with four items retained.

### ***Descriptive Analysis for Social Innovation***

The descriptive statistics for the mediating construct of social innovation was used to describe and organize primary data on this variable. The social innovation variable had 17 items that were analyzed and the results obtained from primary sources were further described, summarized, organized and presented in the simplest way for easy of understanding, (Waltri, 2021). The descriptive statistical outcome was presented using extracted components, retained items, factor loading score, means, and standard deviations. The EFA analysis outcome from social innovation construct had two components each with varying items. The first component on promoting social values had 10 items while the second component on community empowerment had 7 items. The results from the social innovation analysis is presented in table 10.

**TABLE 13 FACTOR ANALYSIS FOR SOCIAL INNOVATION**

| Variable          | Component                                   | Indicators                                                                                                                  | Factor Loading score | Mean | Std Dev |
|-------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------|------|---------|
| Social Innovation | <b>Component 1: Promoting Social Values</b> | Programs to promote social values                                                                                           | .654                 | 3.72 | 1.238   |
|                   |                                             | Target to change the community's social norms that hinder its development                                                   | .724                 | 3.52 | 1.433   |
|                   |                                             | Reduce street children behaviour                                                                                            | .770                 | 3.43 | 1.541   |
|                   |                                             | Promote girl child education                                                                                                | .782                 | 3/51 | 1.51    |
|                   |                                             | Promote youth sports programs                                                                                               | .758                 | 3.42 | 1.549   |
|                   |                                             | Promote Social change                                                                                                       | .751                 | 3.75 | 1.406   |
|                   |                                             | Increase the community's innovative capacity.                                                                               | .601                 | 3.83 | 1.245   |
|                   |                                             | Enhance Social participation.                                                                                               | .856                 | 3.79 | 1.238   |
|                   |                                             | Promote social values                                                                                                       | .835                 | 3.62 | 1.318   |
|                   |                                             | Changing social norms holding the community backward                                                                        | .760                 | 3.48 | 1.381   |
|                   | <b>Component 2: Community Empowerment</b>   | Sensitize the community in the informal settlement areas to be more aware of their needs at individual and community level. | .816                 | 3.38 | 1.285   |
|                   |                                             | Provide solutions for bringing about social change to the community.                                                        | .644                 | 3.49 | 1.362   |
|                   |                                             | Deploy new techniques to increase the innovative capacity of the employees.                                                 | .887                 | 3.79 | 1.174   |
|                   |                                             | Come up with ideas to increase social participation in society                                                              | .788                 | 3.72 | 1.317   |
|                   |                                             | Programs to promote environmental conservation                                                                              | .666                 | 3.51 | 1.341   |
|                   |                                             | Programs to promote safe drug consumption behaviors                                                                         | .713                 | 3.66 | 1.372   |

Source : (Survey Data, 2024)

The results from the EFA analysis demonstrate a standard deviation score with an average deviation of the individual responses relative to the mean. A standard deviation of less than 0.5 implies consensus amongst the respondents' while standard deviation of between 0.5 and 1 implies that there is a moderate consensus. Also, the result with a standard deviation above 1 shows lack of consensus amongst the respondents. Therefore, from the above EFA analysis output on the construct of social innovation, it shows that the mediating variable was reorganised in a manner that the two components (promoting values and community empowerment) when extracted and matched with initial research tool were found to have varying items or elements. The component on promoting social values shows the descriptive statistics for the one component extracted and 10 items retained and the component of community with 7 items retained.

#### ***Descriptive Analysis for Market Entry Barriers***

The third construct with four components and 20 items as market entry barriers operationalised as a moderating variable was also examined and the results presented using extracted components, retained items and central tendency measures of means and standard deviations. A structured questionnaire was employed in this survey to collect primary data in a 5 point-Likert based scale. From the EFA analysis output, the responses from the participants opinion were presented using means and standard deviations, (Jaccard & Becker, 2021, Shayib, 2018). The results on factor loading, mean and standard deviation obtained from the analysis of the moderating study variable was found to have four components, each with varying elements that were retained from the initial research instrument presented in Table 14 below:

**TABLE 14: FACTOR ANALYSIS FOR MARKET ENTRY BARRIERS**

| Variable              | Component                                    | Indicators                                                                                                                                                                                                       | Factor Loading Score | Mean | Std.Dev |
|-----------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------|---------|
| Market Entry barriers | <b>Component 1:<br/>Market Barriers</b>      | Gaining access to distribution and/or sales channels is very difficult.                                                                                                                                          | .701                 | 3.22 | 1.219   |
|                       |                                              | It is difficult to perceive the optimal scale of production (where costs per product/service are lower).                                                                                                         | .548                 | 3.41 | 1.265   |
|                       |                                              | Complying with industry-specific regulations is a challenge ( Such as specific licenses, environmental requirements, etc.)                                                                                       | .814                 | 3.33 | 1.201   |
|                       |                                              | It is difficult to get enough profit (to survive as a firm).                                                                                                                                                     | .721                 | 3.29 | 1.146   |
|                       |                                              | Access to specific technologies is not easy.                                                                                                                                                                     | .811                 | 3.37 | 1.235   |
|                       |                                              | New entrants have a cost disadvantage compared to the established firms.                                                                                                                                         | .531                 | 3.73 | 1.176   |
|                       |                                              | Established firms offer exclusive contracts to distributors so as to restrict new firm's access to those channels (for example through exclusive contracts).                                                     | .580                 | 3.45 | 1.245   |
|                       |                                              |                                                                                                                                                                                                                  |                      |      |         |
|                       | <b>Component 2:<br/>Competitive Barriers</b> | Firms in the market incur high expenses in advertising and promotional campaigns.                                                                                                                                | .500                 | 3.58 | 1.116   |
|                       |                                              | Established firms in the market create the impression that they will have a reaction against the entry of new entrant in the market through the media and other means, with the intention of discouraging entry, | .770                 | 3.34 | 1.288   |
|                       |                                              | Established firms in the market set a lower price than the ones that would be more profitable, to discourage the entry of new                                                                                    | .692                 | 3.56 | 1.127   |

|  |                                                 |                                                                                                                                                                  |      |      |       |
|--|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|-------|
|  |                                                 | entrants in the market.                                                                                                                                          |      |      |       |
|  |                                                 | Established firms try to prevent the profitability of their activities from becoming visible, which makes the attractiveness of the market less visible.         | .746 | 3.37 | 1.215 |
|  |                                                 | Established firms patent their knowledge and discoveries which allows them to obtain exclusivity.                                                                | .635 | 3.35 | 1.342 |
|  |                                                 | Established firms ensure access to raw materials and intermediate products. They also restrict and make it difficult for new entrants to access these resources. | .733 | 3.41 | 1.331 |
|  |                                                 | <b>Component 3</b>                                                                                                                                               |      |      |       |
|  | <b>Component 3:<br/>Financial risks</b>         | Raising enough capital for the business is not easy.                                                                                                             | .558 | 3.77 | 1.081 |
|  |                                                 | New entrants have a cost advantage in obtaining required capital compared to the established ones(High interest rates, more guarantees, etc).                    | .807 | 3.73 | 1.176 |
|  |                                                 | New entrants face a greater financial risk (They are more likely to lose a lot of money ).                                                                       | .754 | 3.64 | 1.094 |
|  |                                                 | Established firms offer many different product/services thus making it difficult for new entrants to create a new market (There are no more niches).             | .660 | 3.49 | 1.163 |
|  | <b>Component 4:<br/>Product differentiation</b> |                                                                                                                                                                  |      |      |       |
|  |                                                 | The market is characterized by significant product/service differentiations.                                                                                     | .713 | 3.52 | 1.086 |
|  |                                                 | The switching costs that consumers have to bear when switching to new business products/service are high.                                                        | .817 | 3.64 | 1.034 |
|  |                                                 | The firms in the market incur high R & D expenditures making the market less attractive.                                                                         | .714 | 3.62 | 1.073 |

Source : (Survey Data, 2024)

The analysis output from EFA technique employed on the moderating construct shows the extent to which the four components were reorganised. It was observed from the EFA analysis that the market entry barriers comprised of four distinct components namely: market barriers, competitive barriers, financial barriers and product differentiation and varying elements for the initial research measurement tool. The reorganisation was done in a manner that the component was extracted and labelled distinctly for each construct. The component on market barrier extracted was matched alongside 7 items that were retained from each set, the second component, competitive barriers with 6 item retained, while the third and fourth components, financial barriers and product differentiation had 4 and 3 items retained respectively.

#### ***Descriptive Statistics on Sustainability***

The dependent variable of sustainability was measured using three indicators of Planet, People and Profits. The data collection instrument presented 18 items to the respondents to indicate the extent the pharmaceutical distributors had attained. The descriptive results on each of three components of sustainability are presented in Table 15

**TABLE 15: DESCRIPTIVE STATISTICS ON SUSTAINABILITY**

| <b>PLANET</b>                                                     | <b>N</b> | <b>Mean</b>  | <b>Std. Dev.</b> |
|-------------------------------------------------------------------|----------|--------------|------------------|
| Reducing solid waste                                              | 138      | 3.81         | .909             |
| Reducing water waste                                              | 139      | 3.83         | .937             |
| Reducing occupational workplace accidents                         | 139      | 4.12         | .910             |
| Reducing consumption of hazardous toxic substances                | 138      | 3.95         | .954             |
| Improvement in compliance with Environmental management standards | 138      | 3.92         | 1.019            |
| Reduction in health and safety incidences                         | 139      | 4.14         | .929             |
| <b>Sub Variable Aggregate</b>                                     |          | <b>3.926</b> | <b>0.958</b>     |

|                                                                         |     |       |       |
|-------------------------------------------------------------------------|-----|-------|-------|
| <b>PEOPLE</b>                                                           |     |       |       |
| Improvement in branding image of the company as a good place to work in | 136 | 4.03  | .966  |
| Earning a corporate reputation for being an ethical organization        | 137 | 4.14  | .933  |
| Improving employee health and safety                                    | 139 | 4.17  | .952  |
| Improving the wellbeing of the community                                | 138 | 3.94  | 1.009 |
| Reducing the costs of distributing drugs                                | 139 | 3.86  | 1.058 |
| Sub Variable Aggregate Scores                                           |     | 4.028 | 0.977 |
| <b>PROFIT</b>                                                           |     |       |       |
| Increase in sales of products                                           | 135 | 3.42  | 1.123 |
| Increase in organisational profits                                      | 134 | 3.46  | 1.087 |
| Increase in market share                                                | 135 | 3.44  | 1.131 |
| Penetration to new markets                                              | 135 | 3.47  | 1.177 |
| Improvement in productivity                                             | 135 | 3.57  | 1.182 |
| Sub Variable Aggregate                                                  |     | 3.472 | 1.14  |
| Variable Aggregate                                                      |     | 3.808 | 1.025 |

**Source: Survey Data, 2024**

The descriptive results indicate that the three components of sustainability were attained to a level of high extent. The people component had the highest level of achievement which was then followed by planet. The measure of dispersion on each of the components shows that the respondents did not vary widely in their opinions on how the sampled pharmaceutical distributors had achieved their goal of sustainability.

### Research Instrument Reliability

The reliability for the research instrument was done in two phases. The first phase was done using the initial set of items used to collect data while the second was done as part of the process for the SEM procedure of performing the EFA and CFA. The results of both phases are presented in Table 16

**TABLE 16: INSTRUMENT RELIABILITY BEFORE AND AFTER EFA**

| Construct             | No. of Components | N   | $\alpha$ Before EFA | $\alpha$ Score after EFA |
|-----------------------|-------------------|-----|---------------------|--------------------------|
| Empathy               | 4                 | 134 | 0.838               | 0.556                    |
| Ethical               | 4                 | 137 | 0.759               | 0.471                    |
| Persuasive Mapping    | 6                 | 140 | 0.738               | 0.811                    |
| Altruistic            | 5                 | 142 | 0.878               | 0.864                    |
| Social Innovation     | 2                 | 136 | 0.971               | 0.928                    |
| Market Entry Barriers | 4                 | 134 | 0.943               | 0.863                    |
| Sustainability        | 3                 | 131 | 0.924               | 0.798                    |

**Source: Survey Data, 2024**

The reliability of two dimensions of servant leadership empathy and ethical leadership after EFA was below threshold of 0.7. All the other variables had alpha scores that satisfied the criteria for internal consistency. Since the scores for the initial instrument before EFA meet the threshold, the decision was to retain the two dimensions in the study on the strength that the original set of data from which they were drawn satisfied the reliability threshold for internally consistent instrument.

### Diagnostic Tests

The study obtained various outputs from the regressed descriptive statistics by conducting several diagnostic tests. The aim of performing this test was to ascertain the assumptions of regression analysis are not violated. The test is used as a tool for assessing model compliance as well as evaluating the appropriateness of the study model in presenting

the data. The study therefore performed several tests that were found relevant for this study for purposes of ensuring reliable and valid regression output.

### **Normality Test**

The test of normality is a diagnostic test that is used to address the misconception in scientific research that statistical output assumes a normal distribution. The assumption of linear regression on outcome from data analysis was tested to ascertain whether the residuals from the t- test meet the assumption for the p-value. The four assumptions of normality test asymptotic, unimodal, symmetric and equal median, mean and mode were ascertained. The study tested the construct of independent variable (altruistic, persuasive mapping, ethical leadership and empathy), the mediating variable (social innovation), moderating variable (market entry barrier) and the dependent variable of sustainability using the two tests. The normality test was tested for goodness data fit using the two commonly employed tests, the Kolmogorov-Smirnov and Shapiro test and results are presented in Table 17

**TABLE 17 TESTS OF NORMALITY RESULTS**

| <b>Test of Normality for Altruistic</b>          |                                 |     |      |              |     |      |
|--------------------------------------------------|---------------------------------|-----|------|--------------|-----|------|
|                                                  | Kolmogorov-Smirnov <sup>a</sup> |     |      | Shapiro-Wilk |     |      |
|                                                  | Statistic                       | Df  | Sig. | Statistic    | Df  | Sig. |
| AC11                                             | .289                            | 142 | .000 | .683         | 142 | .000 |
| AC12                                             | .249                            | 142 | .000 | .800         | 142 | .000 |
| AC13                                             | .270                            | 142 | .000 | .780         | 142 | .000 |
| AC14                                             | .256                            | 142 | .000 | .761         | 142 | .000 |
| AC15                                             | .251                            | 142 | .000 | .795         | 142 | .000 |
| <b>Tests of Normality for Persuasive Mapping</b> |                                 |     |      |              |     |      |
| C41                                              | .268                            | 140 | .000 | .743         | 140 | .000 |
| C42                                              | .268                            | 140 | .000 | .745         | 140 | .000 |
| C43                                              | .281                            | 140 | .000 | .726         | 140 | .000 |
| C44                                              | .250                            | 140 | .000 | .799         | 140 | .000 |
| C45                                              | .255                            | 140 | .000 | .765         | 140 | .000 |
| C46                                              | .367                            | 140 | .000 | .627         | 140 | .000 |
| <b>Tests of Normality Persuasive Mapping</b>     |                                 |     |      |              |     |      |
| PMC4                                             | .210                            | 141 | .000 | .815         | 141 | .000 |
| <b>Tests of Normality Ethical Leadership</b>     |                                 |     |      |              |     |      |
| ETC2                                             | .176                            | 137 | .000 | .803         | 137 | .000 |
| ETC6                                             | .210                            | 137 | .000 | .864         | 137 | .000 |

|                                                 |                                 |     |      |              |     |      |
|-------------------------------------------------|---------------------------------|-----|------|--------------|-----|------|
| ETC7                                            | .213                            | 137 | .000 | .807         | 137 | .000 |
| ETC10                                           | .319                            | 137 | .000 | .701         | 137 | .000 |
| <b>Tests of Normality Empathy</b>               |                                 |     |      |              |     |      |
| EC3                                             | .168                            | 134 | .000 | .829         | 134 | .000 |
| EC5                                             | .200                            | 134 | .000 | .855         | 134 | .000 |
| EC8                                             | .219                            | 134 | .000 | .921         | 134 | .000 |
| EC9                                             | .258                            | 134 | .000 | .804         | 134 | .000 |
| <b>Tests of Normality Social Innovation</b>     |                                 |     |      |              |     |      |
| SSIC1                                           | .180                            | 136 | .000 | .890         | 136 | .000 |
| SSIC2                                           | .207                            | 136 | .000 | .886         | 136 | .000 |
| <b>Tests of Normality Market Entry Barriers</b> |                                 |     |      |              |     |      |
|                                                 | Kolmogorov-Smirnov <sup>a</sup> |     |      | Shapiro-Wilk |     |      |
|                                                 | Statistic                       | Df  | Sig. | Statistic    | Df  | Sig. |
| MBC1                                            | .106                            | 134 | .001 | .956         | 134 | .000 |
| MBC2                                            | .099                            | 134 | .003 | .959         | 134 | .001 |
| MBC3                                            | .144                            | 134 | .000 | .951         | 134 | .000 |
| MBC4                                            | .115                            | 134 | .000 | .952         | 134 | .000 |
| <b>Tests of Normality Sustainability</b>        |                                 |     |      |              |     |      |
| Profit                                          | .108                            | 131 | .001 | .948         | 131 | .000 |
| Planet                                          | .152                            | 131 | .000 | .925         | 131 | .000 |
| People                                          | .152                            | 131 | .000 | .912         | 131 | .000 |

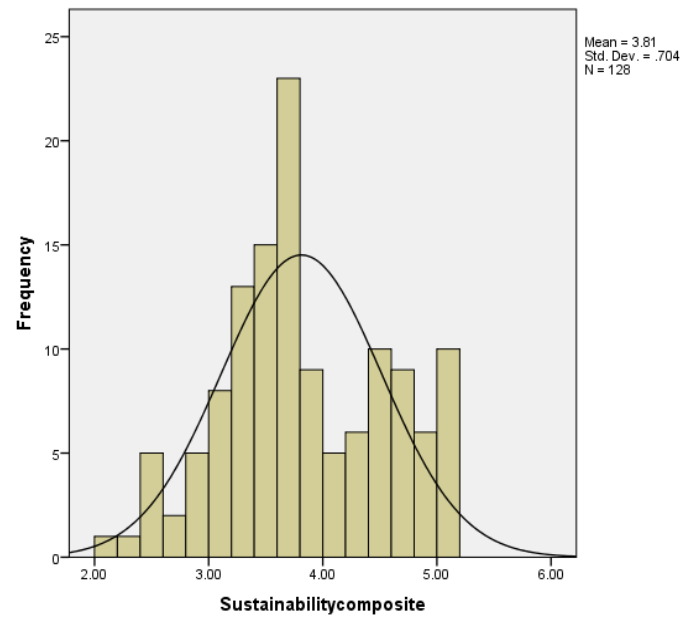
**Source : (Survey Data, 2024)**

The results from normality test shows that the obtained p- value = 0.000 for all the constructs, independent, mediating, moderating and dependent variables, a p-value less than 0.05 means that there is a significant deviation from normal distribution and when the data is significant it assumes a normal distribution an essential parameter for parametric test. The results presented in Table 17 indicate that the assumption for normality has not been satisfied. To mitigate against this weakness in the data, the study subjected the data to normality tests involving histograms and Q-Q plots so as to observe the patterns of the data on each study variable.

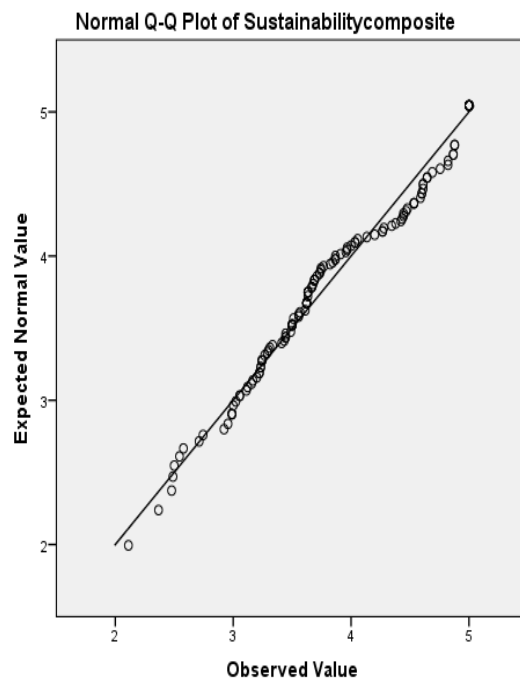
Statisticians observe that the normally distributed data is symmetric such that all the measures of central tendency of mean and median would be equal. The Q-Q Plot presents the distribution of the data as a straight line to make observations based on whether

the data falls on the straight line. For a normally distributed data, the actual observations will appear roughly as a straight line and in case of any deviation, it so slight from the straight line. The Q-Q Plots and corresponding Histograms for each of the variables investigated in the study are presented by Figure 7-13

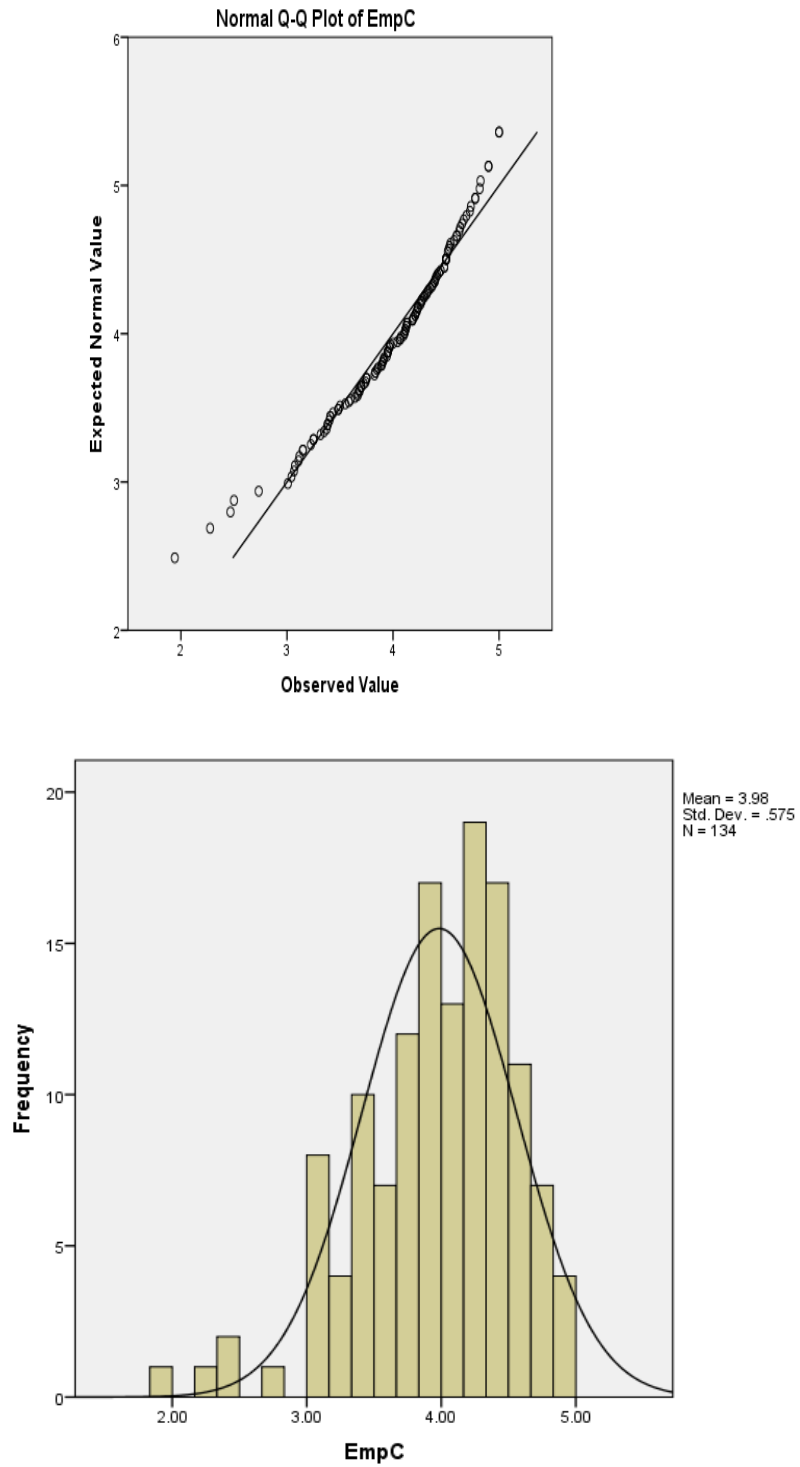
**FIGURE 7 Q-Q PLOT and HISTOGRAM for**



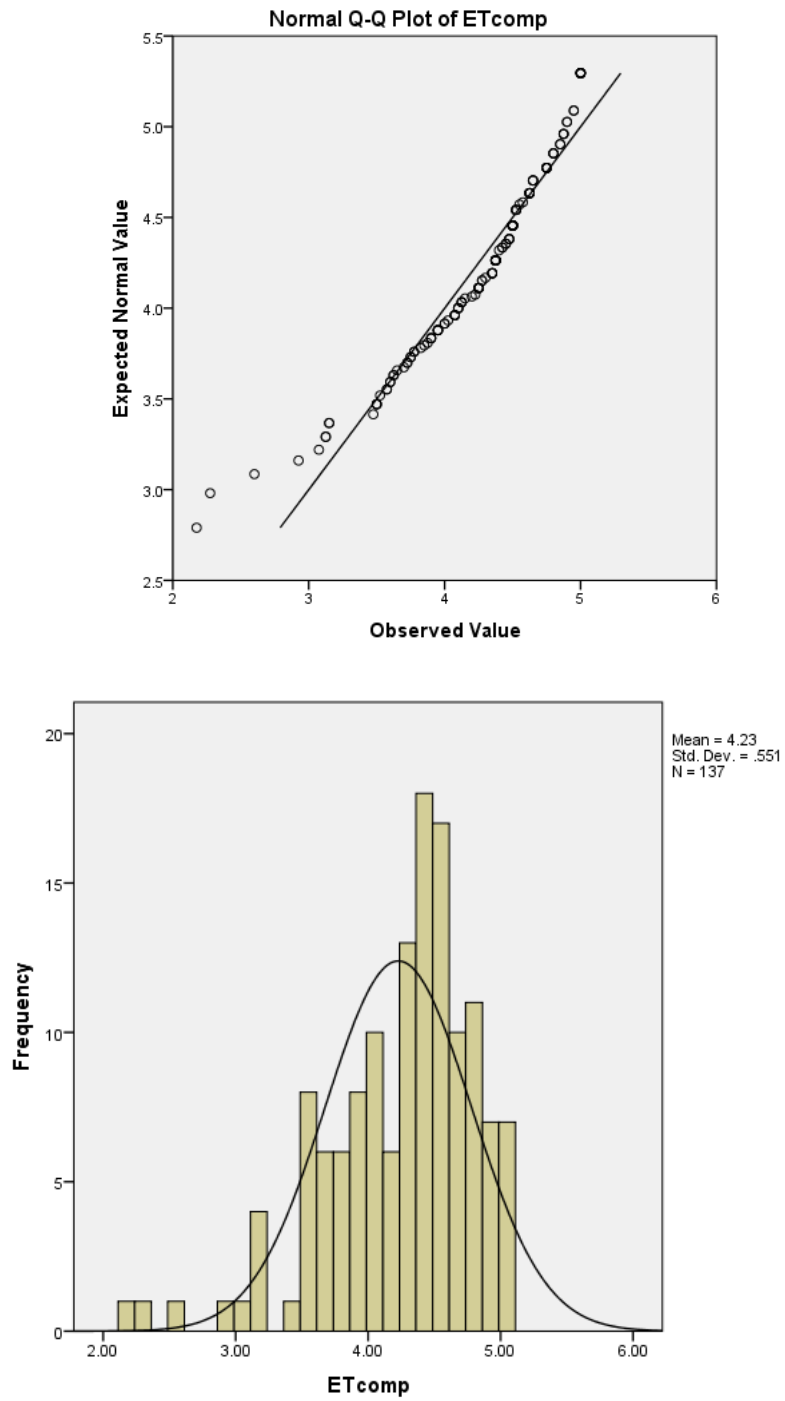
**SUSTAINABILITY**



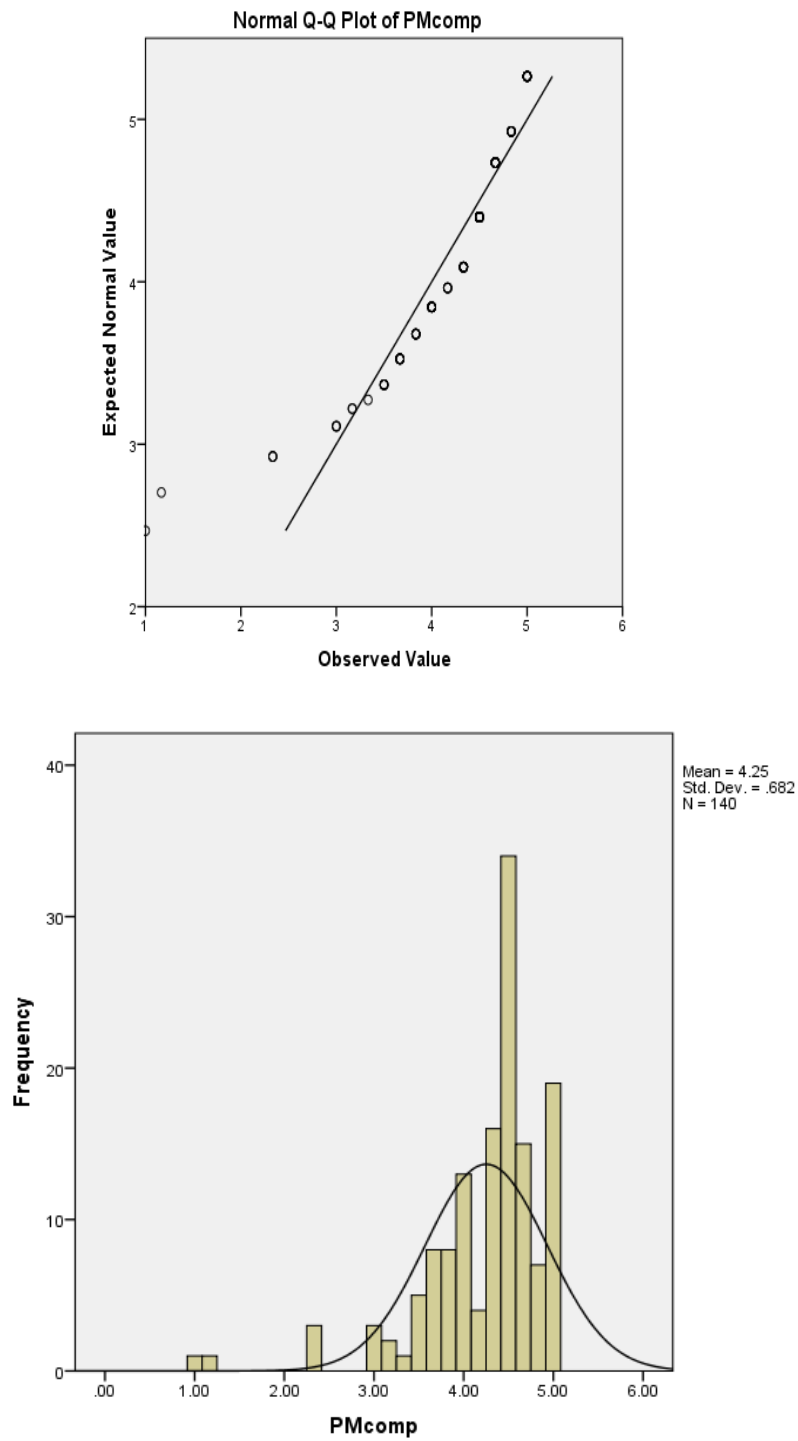
**FIGURE 8 : Q-Q PLOT and HISTOGRAM for EMPATHY**



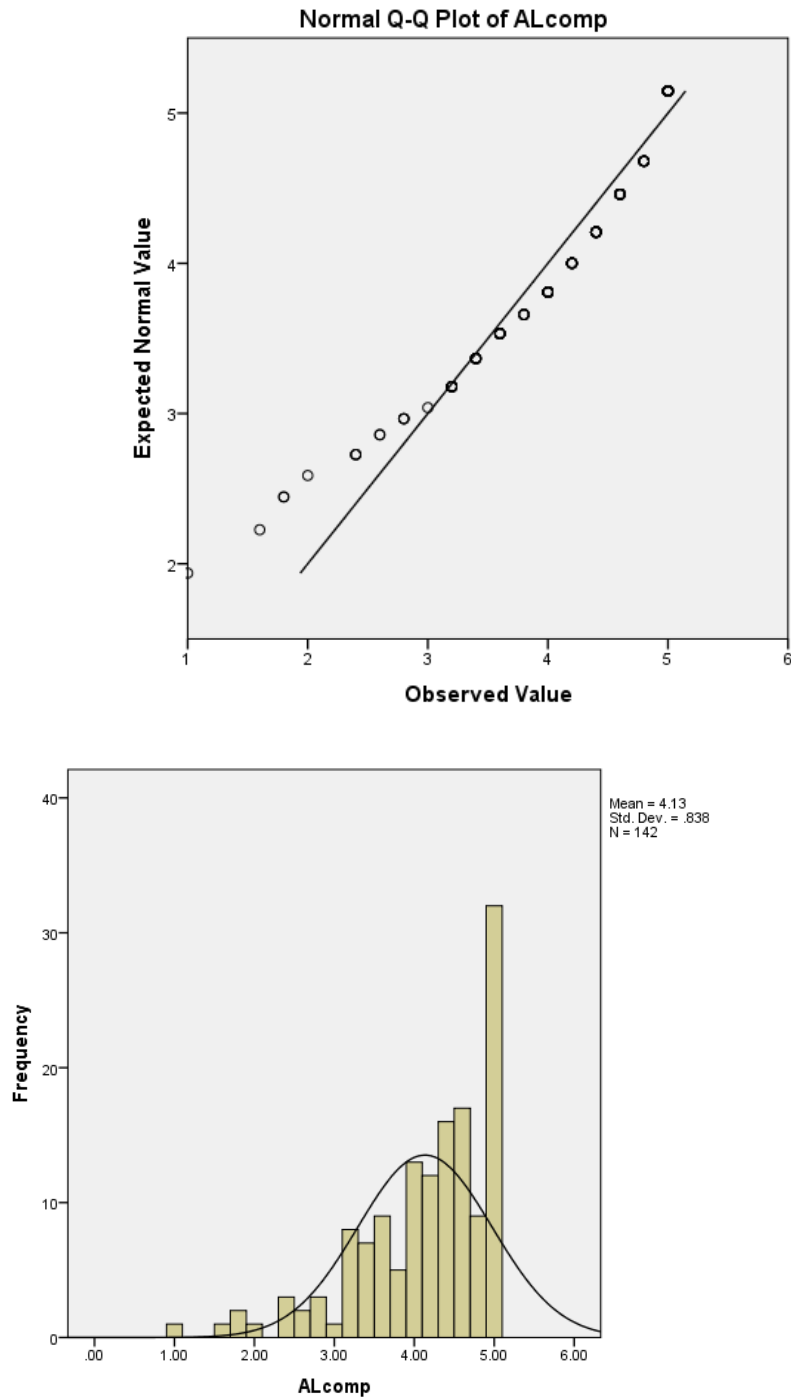
**FIGURE 9 Q-Q PLOT and HISTOGRAM for ETHICAL**



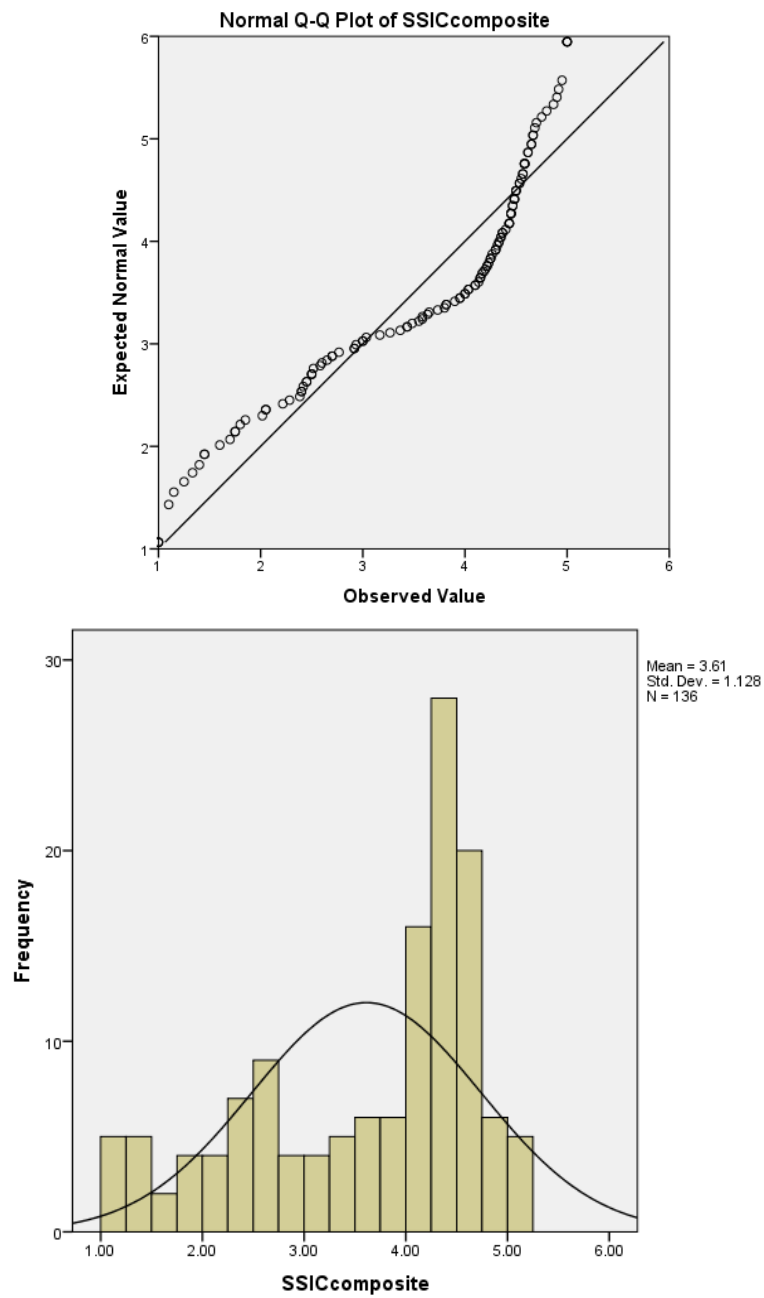
**FIGURE 10 : Q-Q PLOT and HISTOGRAM for PERSUASIVE MAPPING**



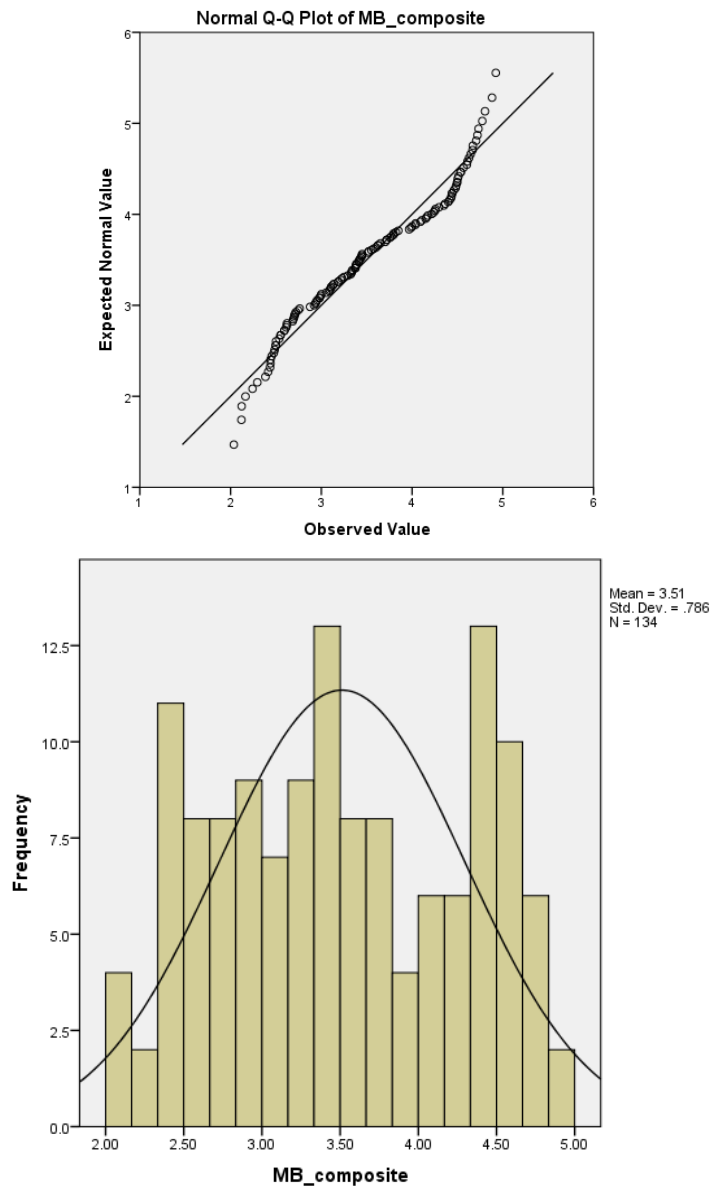
**FIGURE 11 Q-Q PLOT and HISTOGRAM for ALTRUISTIC**



**FIGURE 12: Q-Q PLOT and HISTOGRAM for SOCIAL INNOVATION**



**FIGURE 13 Q-Q PLOT and HISTOGRAM for MARKET ENTRY BARRIERS**



The primary data plotted to extract the Q-Q Plots and the histograms falls along the straight line and where there is some deviation, it is so slight so that the assumption for asymmetry is evident in the pattern in each plot. In addition, the histograms displaying the normal curve for each of the variables indicates no skewness to the left or right. Therefore, even though the Kolmogorov-Smirnoff and Shapiro-Wilk tests have p values greater than 0.05, the Q-Q plots and the histograms provide evidence that the assumption for normality in the data is not

violated and that the data is suitable for the regression analyses tests for the research hypotheses.

### ***Multicollinearity Test***

The test for multicollinearity results with variable inflation factor more than five implies a high multicollinearity, while VIF ranging between one and five implies moderate correlation and when  $VIF = 1$  there is no correlation. With a VIF value greater than ten with a tolerance level less than 0.1 means that there is multicollinearity that needs to be addressed. The multicollinearity test results are reported in Table 18 for the study variables.

**TABLE 18 MULTI-COLLINEARITY REPORT ON THE EXTRACTED COMPONENT BASIS**

| <b>Variable</b>                                                                                                       | <b>Tolerance</b> | <b>VIF</b> |
|-----------------------------------------------------------------------------------------------------------------------|------------------|------------|
| It affects me very much when one of my colleagues is upset                                                            | 0.404            | 2.477      |
| I get very upset when I see someone cry                                                                               | 0.453            | 2.21       |
| I am not always interested in sharing others' happiness                                                               | 0.263            | 3.806      |
| Followers around me have a strong influence on my mood                                                                | 0.321            | 3.113      |
| I tend to get emotionally involved with other employee's problems                                                     | 0.281            | 3.559      |
| I am empathetic with what happens to other people                                                                     | 0.468            | 2.137      |
| I am good at understanding how my team members are feeling and what they are thinking                                 | 0.384            | 2.607      |
| My team members feel comfortable sharing their problems with me as their leader                                       | 0.385            | 2.6        |
| I am able to rapidly and intuitively tune into how my team members feel                                               | 0.33             | 3.035      |
| I am sensitive to the feelings of my team members and colleagues                                                      | 0.279            | 3.584      |
| I try as much as possible to avoid hurting other people's feelings                                                    | 0.276            | 3.618      |
| I enjoy caring for others                                                                                             | 0.28             | 3.575      |
| I consider each side to an argument before making a decision                                                          | 0.534            | 1.873      |
| I strive to see how it would feel to be in someone else's situation before criticizing them                           | 0.35             | 2.856      |
| I consider myself to be good at predicting what we will take                                                          | 0.323            | 3.092      |
| I always offer compelling reasons to get my team members to do things.                                                | 0.35             | 2.861      |
| I encourage team members to dream "big dreams" about the organization.                                                | 0.334            | 2.991      |
| I am very persuasive when handling staff                                                                              | 0.343            | 2.917      |
| I easily convince my team members to do the things required for their job.                                            | 0.415            | 2.411      |
| Others consider me to be well gifted when it comes to persuading others.                                              | 0.412            | 2.429      |
| I consider myself to be well gifted in persuading other people.                                                       | 0.28             | 3.578      |
| I hold the department's employees to high ethical standards.                                                          | 0.454            | 2.201      |
| I endeavor to do what I promise to my team members                                                                    | 0.211            | 4.736      |
| I do not compromise ethical principles in order to achieve success                                                    | 0.248            | 4.038      |
| I seek to always be honest                                                                                            | 0.166            | 6.029      |
| I value honesty more than profits                                                                                     | 0.327            | 3.057      |
| I sensitize my team to be very sensitive to ethical problems                                                          | 0.307            | 3.262      |
| I emphasize that in my department team members think of their own welfare first when faced with a difficult decision. | 0.335            | 2.984      |
| I have ensured a work environment in which both the leader and followers around here have                             | 0.426            | 2.346      |

|                                                                                                                                                                                                                  |       |       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|
| a strong sense of responsibility to society and humanity.                                                                                                                                                        |       |       |
| I have sensitized My team to demonstrate sensitivity to ethical problems                                                                                                                                         | 0.502 | 1.994 |
| I have ensured that in my department team members are willing to break the rules in order to advance in the company.                                                                                             | 0.227 | 4.396 |
| I have nurtured a team of followers who are such that no matter how much people around here are provoked , they always are responsible for whatever they do.                                                     | 0.369 | 2.713 |
| I put the interests of my team members ahead of mine,                                                                                                                                                            | 0.236 | 4.231 |
| I do everything I can to serve my team members                                                                                                                                                                   | 0.251 | 3.979 |
| I sacrifice my interests to meet the needs of others.                                                                                                                                                            | 0.141 | 7.106 |
| I always go beyond the call of duty to meet the needs of others.                                                                                                                                                 | 0.24  | 4.169 |
| I make a lot of personal sacrifice for my team members.                                                                                                                                                          | 0.183 | 5.479 |
| I have endured many hardships to defend my team members.                                                                                                                                                         | 0.325 | 3.076 |
| Sensitize the community in the informal settlement areas to be more aware of their needs at individual and community level.                                                                                      | 0.202 | 4.943 |
| Provide solutions for bringing about social change to the community.                                                                                                                                             | 0.188 | 5.315 |
| Deploy new techniques to increase the innovative capacity of the employees.                                                                                                                                      | 0.258 | 3.883 |
| Come up with ideas to increase social participation in society                                                                                                                                                   | 0.267 | 3.741 |
| Programs to promote environmental conservation                                                                                                                                                                   | 0.15  | 6.655 |
| Programs to promote social values                                                                                                                                                                                | 0.152 | 6.571 |
| Programs to promote safe drug consumption behaviors                                                                                                                                                              | 0.205 | 4.877 |
| Target to change the community's social norms that hinder its development                                                                                                                                        | 0.141 | 7.074 |
| Reduce street children behaviour                                                                                                                                                                                 | 0.108 | 9.236 |
| promote girl child education                                                                                                                                                                                     | 0.147 | 6.792 |
| Promote youth sports programs                                                                                                                                                                                    | 0.117 | 8.568 |
| Promote Social change                                                                                                                                                                                            | 0.167 | 5.998 |
| Increase the community's innovative capacity.                                                                                                                                                                    | 0.268 | 3.73  |
| Enhance Social participation.                                                                                                                                                                                    | 0.217 | 4.61  |
| Promote social values                                                                                                                                                                                            | 0.203 | 4.932 |
| Gaining access to distribution and/or sales channels is very difficult.                                                                                                                                          | 0.383 | 2.614 |
| Raising enough capital for the business is not easy.                                                                                                                                                             | 0.522 | 1.916 |
| It is difficult to perceive the optimal scale of production (where costs per product/service are lower).                                                                                                         | 0.396 | 2.524 |
| Complying with industry-specific regulations is a challenge ( Such as specific licenses, environmental requirements, etc.)                                                                                       | 0.332 | 3.011 |
| It is difficult to get enough profit (to survive as a firm).                                                                                                                                                     | 0.231 | 4.326 |
| Access to specific technologies is not easy.                                                                                                                                                                     | 0.272 | 3.677 |
| New entrants have a cost disadvantage compared to the established firms.                                                                                                                                         | 0.357 | 2.801 |
| The market is characterized by significant product/service differentiations.                                                                                                                                     | 0.254 | 3.941 |
| The switching costs that consumers have to bear when switching to new business products/service are high.                                                                                                        | 0.398 | 2.514 |
| The firms in the market incur high R & D expenditures making the market less attractive.                                                                                                                         | 0.407 | 2.454 |
| Firms in the market incur high expenses in advertising and promotional campaigns.                                                                                                                                | 0.389 | 2.571 |
| New entrants have a cost advantage in obtaining required capital compared to the established ones(High interest rates, more guarantees, etc).                                                                    | 0.314 | 3.186 |
| New entrants face a greater financial risk (They are more likely to lose a lot of money ).                                                                                                                       | 0.33  | 3.027 |
| Established firms offer many different product/services thus making it difficult for new entrants to create a new market (There are no more niches).                                                             | 0.401 | 2.492 |
| Established firms in the market create the impression that they will have a reaction against the entry of new entrant in the market through the media and other means, with the intention of discouraging entry, | 0.309 | 3.234 |
| Established firms in the market set a lower price than the ones that would be more profitable, to discourage the entry of new entrants in the market.                                                            | 0.284 | 3.519 |
| Established firms try to prevent the profitability of their activities from becoming visible,                                                                                                                    | 0.385 | 2.597 |

---

which makes the attractiveness of the market less visible.

Established firms patent their knowledge and discoveries which allows them to obtain exclusivity.

0.261 3.831

Established firms ensure access to raw materials and intermediate products. They also restrict and make it difficult for new entrants to access these resources.

0.233 4.3

Established firms offer exclusive contracts to distributors so as to restrict new firm's access to those channels (for example through exclusive contracts).

0.22 4.542

Established firms make price agreements and other strategies with their competitors.

0.411 2.431

**Source : (Survey Data 2024)**

The results show that the multi collinearity assumption has been satisfied for all the study variables.

#### **4.4.2. Linearity Test**

The test was ensured through correlation analysis. The Pearson correlation output showing the correlations among the study variables and the statistical significance is presented in Table 19

**TABLE 19 CORRELATION ANALYSIS**

| <b>Variable</b>                  | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
|----------------------------------|----------|----------|----------|----------|----------|
| 1.Empathy                        | 1.000    |          |          |          |          |
| 2. Persuasive mapping            | .0552**  | 1.000    |          |          |          |
| 3. Ethical servant leadership    | .484**   | .554**   | 1.000    |          |          |
| 4. Altruistic Servant Leadership | .387**   | .463**   | .606**   | 1.000    |          |
| 5, Sustainability                | -.0230*  | -0.043   | -.104    | -0.072   | 1.000    |

\*\*. Correlation is significant at the 0.01 level (2-tailed).

The correlation values among the variables are within the acceptable range to uphold the hypothesis for linearity. The assumption for linearity in the data is therefore confirmed and qualifies the data for further analysis in answering the research hypotheses.

### ***Homoskedasticity Diagnostic Test***

The homoskedasticity diagnostic test was performed using the Breusch-Pagan and Koenker test. The statistical output is presented in Table 20

**TABLE 20 : BREUSCH-PAGAN and KOENKER TEST**

---

The tests use the scaled residuals from the original OLS above with no adjustment to standard errors.

R-square  
.018

----- ANOVA TABLE -----

|          | SS       | df       | MS     | F         | Sig       |
|----------|----------|----------|--------|-----------|-----------|
| Model    | 3.1647   | 4.0000   | .7912  | .4928     | .0214     |
| Residual | 176.5935 | 110.0000 | 1.6054 | -999.0000 | -999.0000 |

----- Breusch-Pagan and Koenker test statistics and sig-values -----

|         | LM     | Sig   |
|---------|--------|-------|
| BP      | 1.5824 | .8120 |
| Koenker | 2.0246 | .7312 |

Null hypothesis: heteroskedasticity not present (homoskedasticity).

If sig-value less than 0.05, reject the null hypothesis.

Note: Breusch-Pagan test is a large sample test and assumes the residuals to be normally distributed.

----- END MATRIX -----

---

The Breusch-Pagan and Koenker values for homoskedasticity are assessed on the basis of the level of significance. For the confirmation that the assumption is complied with, the corresponding p-value should be greater than 0.05. This requirement has been satisfied in the data used for the test; thus, confirming the assumption for homoskedasticity has not been violated.

### **Findings on Test of Hypotheses**

The conceptualization of the study was guided by three types of hypotheses; direct effects, mediating and moderated effects hypotheses. The adopted research paradigm of positivism required that the hypotheses be tested using quantitative techniques. The literature review on the state of previous research work on the independent variable had pointed out

that in the transition of the scholarship on servant leadership to the third phase, more rigorous statistical analysis is required in advancing knowledge development on the area of servant leadership (Eva *et.al*, 2019). On this basis, the SEM Approach was adopted to serve the dual purpose of conforming to the epistemological paradigm adopted in the study and secondly responding to the identified calls of adopting more robust and rigorous statistical methods in the continuing research on servant leadership. Thus, the data obtained was subjected to the rigorous and robust statistical analysis using the IBM SPSS AMOS Version 21 software for the three types of hypotheses that guided the study.

The robustness of the analysis first extracted the relevant set of components comprising each variable in the study. The set of components extracted and their retained factors based on factor loadings provided the relevant set of variables that were used for the different hypotheses the study sought to answer. In each of the hypothesis, the SEM approach obtained the regression output statistics so as to enable the researcher to derive the effect as represented by the regression coefficients for each of the variables. In addition, the software provided the model fit statistics to guide the researcher in making the decision as to whether the constructed model from the data meets the statistical threshold for its adoption in making inferences and conclusions on the patterns observed from the data. Lastly, the analysis provided the path diagram which serves the role of the constructed model demonstrating the path analysis with causal effects of the predictor on the criterion variables. The path diagram is considered critical to the advancement of scholarship in servant leadership as it offered an opportunity to understand the covariances among the dimensions that comprise servant leadership as well as their relative contribution to the composite factor of servant leadership. Further to this, the path diagram permits the researcher to break the criterion construct into its components so as to permit the researcher to discern how both the composite of the criterion

as well as its components are contributed to by the respective components of the predictor construct.

In order to achieve these intended goals for this research and in an endeavour to satisfy the quest for advancement of valid authentic scientific knowledge on servant leadership, the study undertook the analysis in sequences of steps to permit the researcher the opportunity to understand the effect of the composite predictor on the composite criterion in the first instance, while in the second instance that of the components of the predictor on the components of the criterion. Through this, the study was able to interrogate deeper the effects brought about by the observed and latent variables studied as enabled by the path analysis outputs on effects and covariance among the predictor construct components.

### **Findings on Test of Direct Effects Hypotheses**

The first set of hypotheses the study investigated were those seeking to explain the direct effect of servant leadership on sustainability of pharmaceutical distributors in Nairobi County. The Predictor construct in the hypotheses of Servant Leadership was measured in this study as comprised of four dimensions that served as the independent variables. These were Empathic Servant Leadership, Ethical Servant Leadership, Persuasive Mapping Servant Leadership and Altruistic Servant Leadership. The criterion construct of sustainability comprised three components of People, Planet and Profit. The analysis of the data testing these hypotheses were performed in several steps. In the first step, SEM is performed to bring out multiple regression results suitable to explain how the four components of servant leadership predict sustainability as a composite as well as when it is broken down into its three components. This permitted the researcher the opportunity to generate the overall multiple regression statistical model for predicting the effect of servant leadership on sustainability in the context of pharmaceutical distributors.

In the second step, each of the independent variables was regressed against both the composite and components of the criterion construct to permit the researcher the opportunity to interrogate the causal effect brought about by each dimension of servant leadership based on the set of components extracted and retained factors to each component. The section first reports the SEM outputs that satisfy the requirements for the multiple regression model estimation, then followed by outputs of analysis on each of the dimensions of servant leadership based on extracted components and retained factors. The decision on each hypothesis is done based on the multiple regression results obtained using the combined set of variables and those undertaken using each component and its extracted factors.

### ***The Direct Effects of Servant Leadership on Sustainability***

In order to understand the effect of Servant Leadership on Sustainability in the Pharmaceutical distribution industry, the four dimensions of servant leadership were regressed on sustainability first, as a composite, and secondly with its components of People, Planet and Profit. The SEM outputs comprised the model summary, the regression outputs and the constructed SEM path analysis. Each of the outputs in the analysis are presented together with a brief comment on the interpretation of the contents of the statistical outputs.

### **Model Fit Summary**

To determine whether the constructed SEM Model fits the data, several parameters for determining the suitability of the model based on the conceptual nature for the operation and interpretation of SEM results were summarized in table 21.

**TABLE 21: COMBINED SEM MODEL FIT for SERVANT LEADERSHIP COMPONENTS**

| Model Fit Statistics        |      |       |         |       |              |      |
|-----------------------------|------|-------|---------|-------|--------------|------|
| CHI.Square likelihood       | CFI  | RMSEA | NCP     | FMIN  | PCFI<br>PNFI | NFI  |
| 75.115<br>DF =6<br>P = .371 | .045 | .407  | 169.115 | 1.030 | .027<br>039  | .064 |

**TABLE 22: REGRESSION COEFFICIENTS for SERVANT LEADERSHIP COMPONENTS**

| Regression Coefficients-Unstandardized |      |        |          |      |        |      |
|----------------------------------------|------|--------|----------|------|--------|------|
|                                        |      |        | Estimate | S.E. | C.R.   | P    |
| Sustainability composite               | <--- | EmpC   | -.262    | .088 | -2.982 | .003 |
| Sustainability composite               | <--- | ETcomp | -.175    | .091 | -1.927 | .045 |
| Sustainability composite               | <--- | PMcomp | .071     | .073 | .971   | .332 |
| Sustainability composite               | <--- | ALcomp | .057     | .059 | .973   | .330 |
| Regression Coefficients -Standardized  |      |        |          |      |        |      |
|                                        |      |        | Estimate |      |        |      |
| Sustainability composite               | <--- | EmpC   | -.220    |      |        |      |
| Sustainability composite               | <--- | ETcomp | -.142    |      |        |      |
| Sustainability composite               | <--- | PMcomp | .071     |      |        |      |
| Sustainability composite               | <--- | ALcomp | .072     |      |        |      |

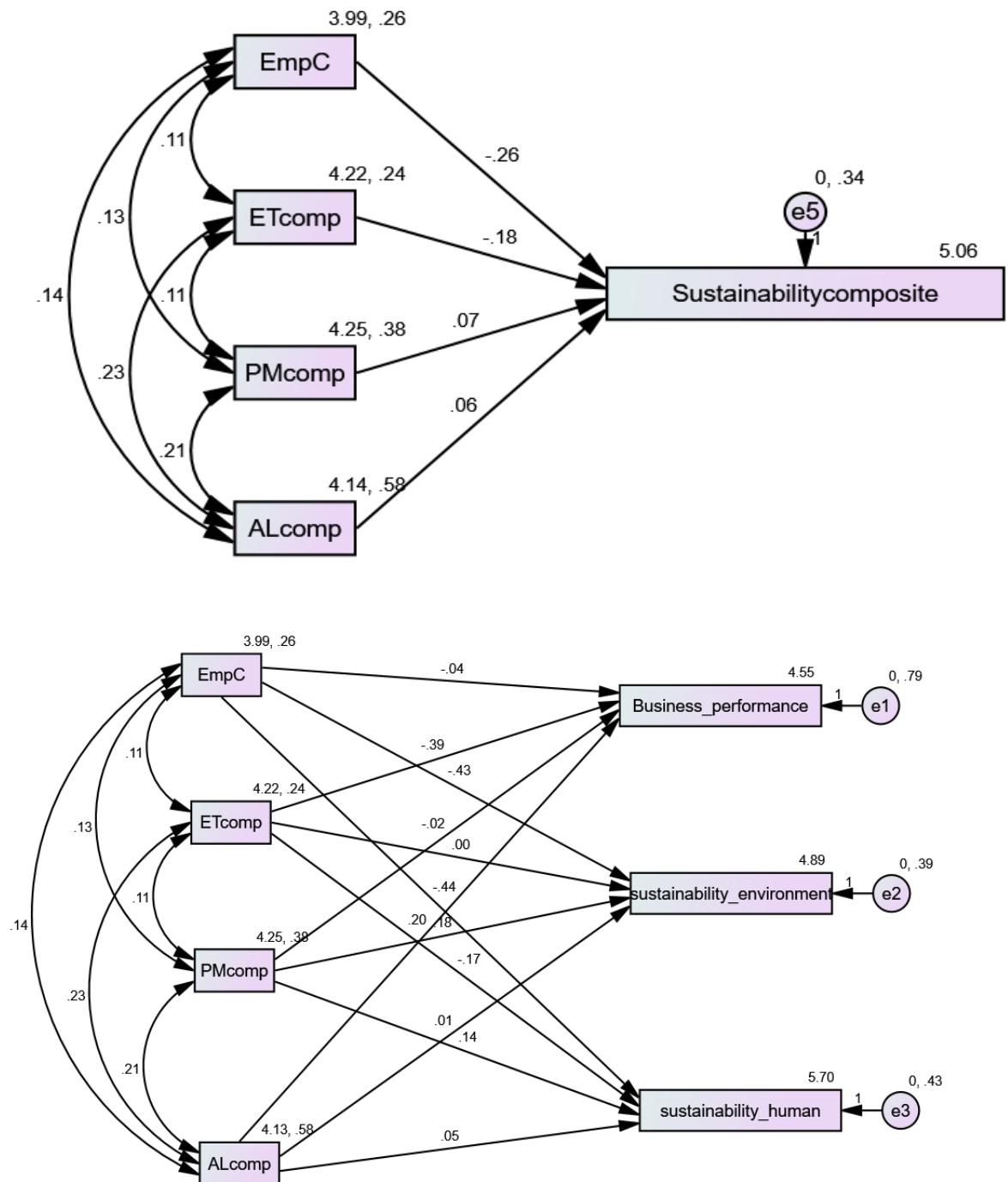
Based on the statistical thresholds for the interpretation of the parameters for determining the model fit in an SEM output, scholars advise on the need to use diverse measures in arriving at the decision. The p value for the maximum likelihood score  $p=0.371$  satisfies the threshold for  $p>0.05$ ; the CFI value is different from 0 but tending towards 1 while the PCFI and PNFI values are closer to the required threshold. Thus, the constructed SEM model predicting the effect of Servant Leadership on Sustainability is good based on these goodness of fit parameters.

### Path Analysis for Causal Effects

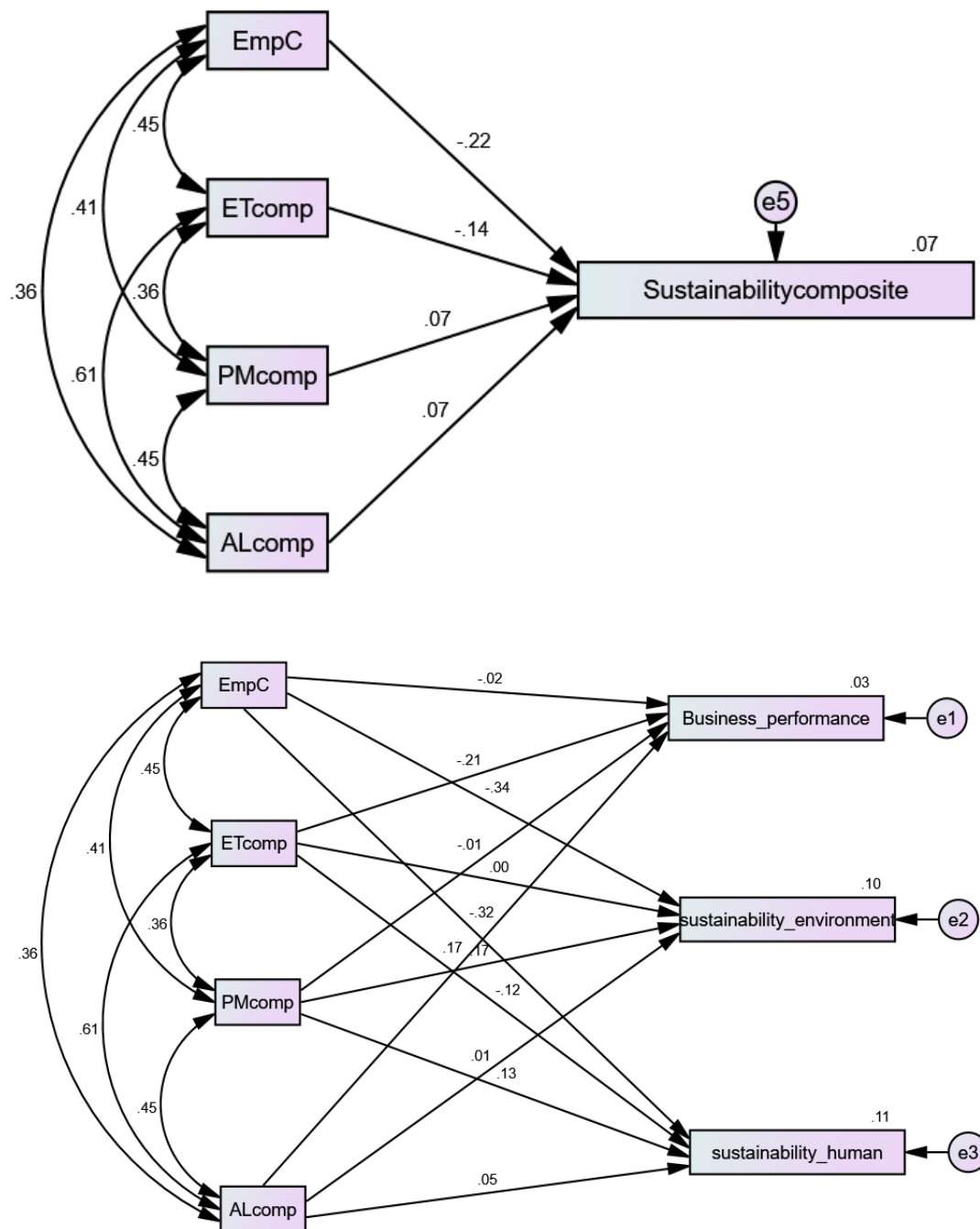
The SEM path analysis diagram constructed by the software to show the relationship between the independent and the dependent variable was done in two stages. In stage 1, the regression output produced the path diagram for the unstandardized regression parameters which was then followed by stage 2 that produced the path diagram with the standardized regression parameters. The diagram with the results for the two stages are presented in Figures 14-15 showing the path analysis on the causal effects of the components of servant leadership investigated in the study on the composite of the dependent variable and the relationship when the components of servant leadership are regressed against the three components of the dependent variable.

The diagram with the unstandardized regression results indicates that the coefficients for the independent variables are as follows:  $\beta$  Empathy=-.026;  $\beta$  Ethical= -.018;  $\beta$  Persuasive= 0.07 ;  $\beta$  Altruistic= 0.06 and the  $R^2 = 5.06$ . The covariance matrix showing the correlations among the independent variables indicates there is a positive correlation among the components of the independent variable at a relatively low level as: Empathy to ethical, persuasive mapping and to Altruistic correlation as 0.11, 0.13 and 0.14 respectively. When the independent variables were regressed on the components of the dependent variable, the path diagram indicates that the effects of the dimensions of servant leadership on those of sustainability are as: Empathy effects on profit, planet and people  $\beta = -0.4; -0.43; -0.44$  respectively; ethical effects on profit, planet and people  $\beta = -0.39; 0; -0.17$  respectively; persuasive mapping effects on profit, planet and people  $\beta = -0.02; -0.18$  and  $-0.17$  respectively; Altruistic effects on profit, plant and people  $\beta = 0.20; 0.01; \text{and } 0.05$  respectively.

**FIGURE 14 PATH ANALYSIS DIAGRAM with UNSTANDARDIZED RESULTS**



**FIGURE 15 PATH DIAGRAM for STANDARDIZED COEFFICIENTS**



The path diagram with the standardized regression results on the other hand indicates that the respective  $\beta$  Coefficients for Empathy, Ethical Persuasive Mapping and Altruistic are

-0.22, -0.14, 0.07 and 0.07 respectively. The R square value declines to 0.07. When each of the independent variables was regressed on the components of the dependent variable, the effects were as follows: Empathy effects on profit, planet and people  $\beta = -0.02; -0.34; -0.32$  respectively; Ethical effects on profit, planet and people  $\beta = -0.21; 0; -0.12$  respectively; persuasive mapping effects on profit, planet and people  $\beta = -0.01; -0.17$  and  $0.13$  respectively; Altruistic effects on profit, plant and people  $\beta = 0.17; 0.01; \text{ and } 0.05$  respectively. The covariance matrix reflected in the path diagram showing the correlations among the independent variables shows a moderate level of correlations among the variables as: empathy to ethical, persuasive and altruistic as 0.45, 0.41 and 0.36 respectively.

The multiple regression results obtained from the SEM analysis when all the components of the independent variable were regressed on the composite of the dependent as well as its components were used to guide the researcher in answering the research questions by way of explaining how the findings on each of the independent variables affects sustainability. In order to offer a comprehensive explanation on the effect brought about by the dimensions of servant leadership used in the study, for each of the direct effects hypotheses, the results of the multiple regression were further explained using the components to each of the variables extracted through exploratory factor analysis. Since the variables had varying number of components extracted, a regression analysis involving the respective components extracted for each variable was performed and the results discussed in comparison with the multiple regression outputs presented in table 21-22 and figures 14-15.

### ***Effect of Empathy Servant leadership on Sustainability***

The first objective of the study sought to establish the effect of empathy as a component of Servant Leadership on Sustainability of Pharmaceutical distributors targeting Informal Settlement areas in Nairobi City County. The procedures for the test of the

hypotheses described in Chapter 3 of the dissertation were followed in applying the SEM Model to obtain the relevant outputs suitable to establish whether the data obtained would enable the researcher answer the research objective. The SEM test results involving the components of Empathy that were extracted are presented in three parts to show the model fit, regression outputs and the path analysis diagram. The interpretation on each of the three outputs is provided so as to shed light on the suitability of the data obtained, validity of the findings reported and nature of effect of the independent variable and its components on both the composite of the dependent and its components. The model fit regression statistics are summarised in Table 24.

**TABLE 24: MODEL FIT STATISTICS for EMPATHY**

| Chi. Square<br>likelihood | CFI  | RMSEA | NCP    | FMIN | PCFI | PNFI | NFI  |
|---------------------------|------|-------|--------|------|------|------|------|
| 80.164                    | .773 | .167  | 66.164 | .472 | .386 | .374 | .749 |
| DF =14                    |      |       |        |      |      |      |      |
| P = 0.000                 | .715 | .147  | 18.454 | .138 | .238 | .235 | .706 |

The SEM model predicts several outputs suitable to test the model fit for this hypothesis the outputs are summarized in table 24. The PNFI and PCFI values are close to the acceptable value as per the rule of the thumb stating that .6 values are acceptable model fit. The NCP values range in between 190.7 and 202.8 which are too high.. The population of NCP for default model and independent model are between 18 low boundary and 66 high boundary with a confidence level of approximately 90%. The model is not acceptable fit. The Function Minimum Fit Function (FMIN) is a measure of model fit in SEM that represent the difference between the observed and predicted in a covariance matrix. From the table, the fit index of the FMIN Model is between .138 low bound and .472 upper bound with a confidence level of

approximately 90% which is a good fit. The RMSEA value is .167 which indicates that the fit index is not adequate. The root mean square error of approximation RMSEA for the given model is between .54 and .686 with a confidence level of approximate 90% which represents a fit of the model.

### **Path Analysis**

The independent variable comprised four extracted components from the EFA labelled EC 3, EC5, EC8, and EC 9, while the dependent variable comprised three components as performance (profit),environment(planet) and social(people). In order to explain the cause effect, SEM produced the path diagram shown in figure 18 below. The four components extracted were named for the purpose of interpretation and discussion of the findings as:

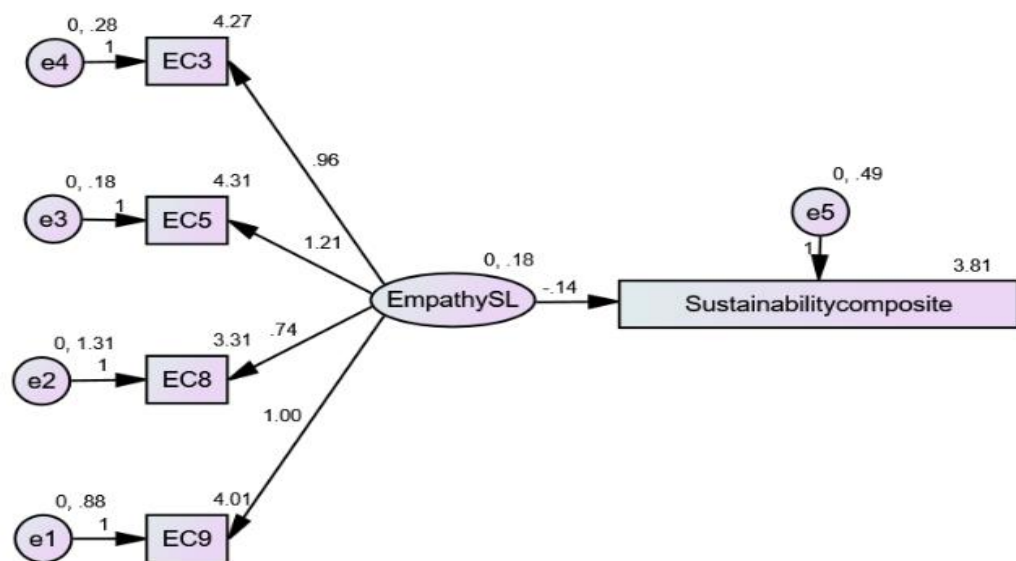
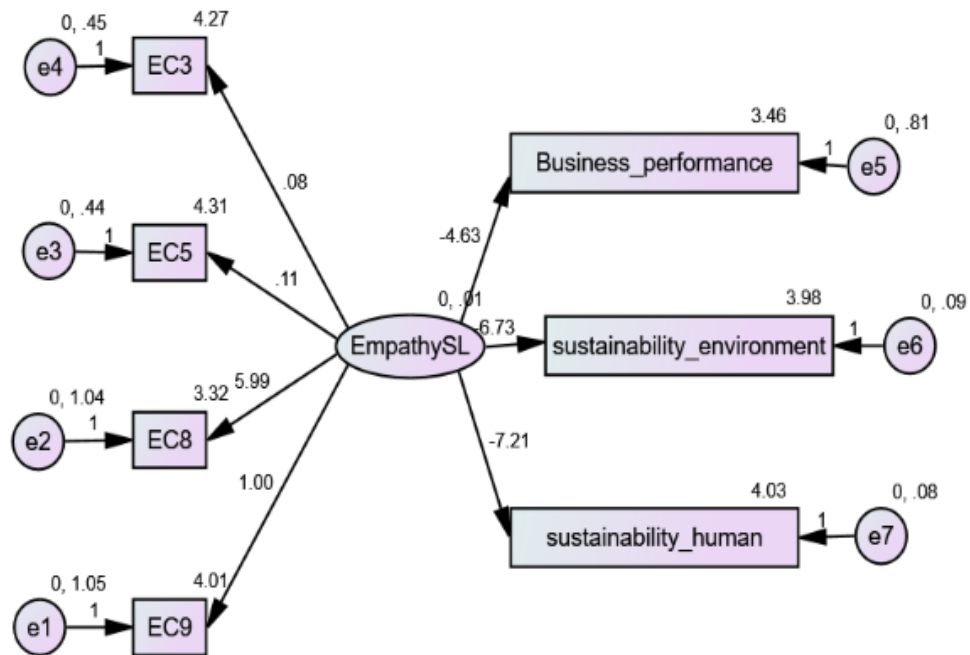
EC3 – Feeling for others

EC 5 – Others thoughtfulness

EC8 – Detached personality

EC9- Troubled

**FIGURE 18 : PATH ANALYSIS DIAGRAM for EMPATHY COMPONENTS**



The results show the standard regression weights empathy which has a moderate estimate to the trend of behavior as an exogenous variable towards the sustainability human, sustainability environment and a low value on business performance as endogenous variables.

The regression outputs and the path analysis diagrams show that the beta value for the composite of empathy when applied alone in absence of the other dimensions of servant leadership is negative with  $\beta = -0.14$ . In the multiple regression analysis when combined with the other dimensions of servant leadership, the  $\beta = -0.22$ . This leads to the conclusion that empathy component of servant leadership has a negative statistical effect on sustainability of pharmaceutical distributors in Nairobi county. Thus, hypothesis 1 of the study is supported. The researcher explains this conclusion in terms of the conceptual, theoretical and empirical literatures as well as the descriptive behavior of the variable in the context of the investigation.

The focus of this hypothesis was to provide an explanation on how empathy as a component of servant leadership affects sustainability of pharmaceutical distributors targeting informal settlement areas in Nairobi City County. Empathy was regressed against sustainability using its components that were extracted through the exploratory factor analysis to show how it would affect sustainability.

In view of the above set of findings, the study null hypothesis that empathy component of servant leadership does not have a significant effect on sustainability of pharmaceutical distributors in Nairobi County is not supported. The conclusion the study makes; thus, is that there exists a significant negative statistical effect of Empathetic Servant Leadership on Sustainability of Pharmaceutical Distributors in Nairobi County. The study explains this conclusion on the basis of the conceptual characteristics of the construct of

empathy, sustainability, the anchoring theory, context of investigation and previous researches.

In terms of the characteristics of the construct, empathy is an essential component of servanthood that has been considered by the proponents of servant leadership. The construct when applied by people would require them to understand others' needs, their concerns as well as challenges in order to customize their attention given to the others. It is included in this style of leadership since it provides a key aspect of the leadership process through which the servant leader influences the followers to get work done. The research instrument used to obtain primary data on this construct presented several statements that were condensed into four components of feeling for others, others thoughtfulness, detached personality and being troubled over others issues. The descriptive data on how each of these were rated among the sampled respondents indicated that they were embraced at the level of mean of 4.34, 4.21, 3.05, and 4.01 respectively implying that the respondents agreed on 3 of the components while indifferent on one of them. The fact that these are practiced at that high extent yet lead to a negative effect on sustainability raised concern. Thus, an explanation is required on how high levels of practice of empathy would lead to a negative contribution towards organizational outcomes.

In practice, the nature of the construct components extracted of; feeling for others, being thoughtful of others, detached personality and being troubled of others circumstances are such that they consume much time and resources of a leader. As the leader gives attention to these, one may find themselves shifting attention to non-productive issues/areas. In turn, the end result is a decline in sustainability affected by the components of empathy. It is observed that the people component is most affected at  $\beta = -7.21$  followed by planet at  $\beta = -6.73$  and profit at  $\beta = -4.63$ .

According to the proponents of servant leadership, the theoretical arguments have presented servant leadership as an “other oriented” approach in which the leader prioritizes individual followers’ needs as identified from the work of Greenleaf, (1997), and Eva *et al.* (2019). The theory on servant leadership argues in this manner as an appropriate way for leaders to enhance productivity through their followers. Considering the findings reported, the results contrast the theoretical propositions of the Leadership Theory. The LMX Theory which the study relied on to complement the Servant Leadership Theory was premised on a relational approach to build social exchanges with each follower with the aim of impacting follower attitude and work outcomes of employee satisfaction and organizational performance. While this may theoretically hold water, the findings reported on a negative effect point to the need for an alternative explanatory approach on how servant leadership would positively contribute to organizational outcomes.

As part of the researchers quest for knowledge development in servant leadership, the attempts to provide the needed explanation drawn from this finding based on extant literature, found suitable logic of explanation from the Leadership Grid Model of Mouton and Blake. The researcher opted for this model since the Leadership Grid Model of Blake’s and Mouton (1962;1964) offers a more balanced approach on the leader- follower relationship in the context of a work situation which would enable leaders to give attention to followers but not at the expense of productivity. The model is a mental frame work and graphic that is used to help leaders identify their own leadership style as well as those of their subordinates. In its presentation, the two main leadership points of focus are plotted on a Cartesian plane comprising of the X and Y axes where the X represents concern for production and the Y representing concern for people. The Grid Model offers a chance for leaders to evaluate the leadership style most appropriate using the scenarios resulting from the horizontal axis and

people-oriented' styles in meeting the concerns of the horizontal axis of concern for production. Combining the two results in four quadrants with different points of focus.

At the middle of the road management location in the grid where according to the scale it is rated at 5.5, managers or leaders give adequate attention to organization performance through balancing the necessity to get work output while maintaining morale of people at a satisfactory level. Servant leadership interpreted in terms of this leadership grid, would be categorized at the country club zone where management gives thoughtful attention to the needs of people for satisfying relationships thus leading to a comfortable, friendly organizational atmosphere and work tempo.

The context in which the study was done comprises of organizations that are doing pharmaceutical distribution with the intended purpose of generating profits. Even though they are supplying to the informal settlement areas, they are considering this as a business undertaking that should result into profitable transactions. Thus, it would be justified when the high level of practice of servant leadership negatively affects business sustainability. The research instrument used indicators of the independent variable were operationalized such that the sampled leaders in this sector were required to give their opinions which reflected their attitudinal inclination towards adoption and practice of diverse dimensions of servant leadership. The dependent variable on the other hand was operationalized to be measured in terms of the actual achievements on the various aspects of sustainability.

The reported findings on this hypothesis, contrast those of Amelia, *et. al.* (2020), Ienna *et. al.*(2021), Knop. (2019), Worku, (2020), and Bernard, (2019). These studies investigated effects of empathy on diverse outcomes such as service quality, customer satisfaction, performance, and pro- environmental behavior. Even though the current study had sustainability as its dependent variable, the indicators of sustainability in the areas of

people, profits and planet, have some aspects that connect closely with some of the measured outcomes in the previous researches. Since the current study was done in Kenya, due to earlier calls made by Eva *et.al* (2019) to extend research on servant leadership into more contexts especially in the emerging economies, the current findings were also compared against recent scholarly attempts on the construct of servant leadership in Kenya. Ogochi (2022) dissertation investigated the effects of servant leadership on policy implementation in the context of religious non-governmental organizations. The extracted factor of empowerment that had included several components of both affective and behavioral elements of empathy, though practiced to a high extent was not statistically significant. Though the findings on hypothesis 1 contrast findings on researches done in other contexts, it agrees with those that have been done in the Kenyan context in finding that empathy as a component of servant leadership does not yield a significant statistical effect on organizational outcomes.

In view of this observation, the study interpreted the implications of the conclusion in terms of the attributes of empathy that would lead to more favorable outcomes by causing a positive effect on organizational outcomes. The study observed that the conceptual literature identified a number of practices alongside deployment of empathy that would have positive effects. These touch on practices that bring about manifestation of the leadership process of providing direction and influence on followers by motivating them to work willingly and enthusiastically. The study therefore in considering the four components of empathy extracted, and the high extent of practice as demonstrated by the mean score, raises an important concern as to how the leaders in the pharmaceutical industry deployed empathy and the focus they gave attention to. For empathy, to bring about favourable effects, it would require the leader to demonstrate it as part of the process of directing followers and

motivating them towards productivity desired ends. This rhymes well with the earlier observations from the leadership grid by Mouton and Blake on the most appropriate manner for deployment of empathy. According to Mouton and Blake (1962;1964), at the middle of the road management where, balance is given between concern for the worker and concern for productivity, it becomes possible to deploy the component of empathy to be directed towards desired organizational productivity outcomes.

The findings and explanations of hypothesis 1 raise two implications. First, the appropriate theoretical anchorage for its optimal deployment in practice. Though servant leadership has mostly been anchored on the Servant Leadership Model by Greenleaf, the interpretations to hypothesis one points to the need to integrate other theoretical reasonings for its optimal deployment when it is meant to provide the needed leadership for directing and inspiring followers towards attaining productivity. The explanations have raised the need for integration of the LMX Theory and the Mouton and Blake leadership grid model. Second, there is an implication regarding an insight into the manner in which empathy needs to be deployed by leaders to bring about desired positive productivity outcomes. The explanations have indicated that empathy is not just deployed for the sake of it, but should be deployed to trigger a sense of direction and the needed motivation level to direct followers towards desired goals on productivity.

In conclusion therefore, the findings and discussion on hypothesis 1 make several contributions to knowledge not only in servant leadership but also on leadership in general. First, for the organizations, the study provides understanding on how empathy as a component of servant leadership can be integrated into the leadership process to bring about beneficial outcomes for organizations in the manner in which it influences, motivates and directs follower behaviours towards desired organizational goals. Secondly, the findings

provide useful insights on the weaknesses of the Servant Leadership Model and the set of relevant theories on leadership and management that can complement its weaknesses in applying empathy in organizations. Towards this, the study pointed to the role played by the LMX and the Mouton and Blake Leadership Grid Model.

### ***Effect of Ethical Servant leadership on Sustainability***

The second hypothesis of the study sought to determine the effect of Ethical Servant Leadership on Sustainability of Pharmaceutical distributors in Nairobi City County. The hypothesis (H02) was stated as: there is no statistically significant effect of ethical servant leadership on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi County.” The focus of this hypothesis was to provide an explanation on how ethical leadership as a component of servant leadership affects sustainability of pharmaceutical distributors targeting informal settlement areas in Nairobi City County. The steps the study adopted for the test of the direct effect hypotheses described in tables 21-22 and figures 14-15 were followed to arrive at the decision on the hypothesis based on the results presented and those of the specific contribution of the extracted components of ethical servant leadership on both the composite and components of sustainability. The section first presents model fit statistics and the path analysis for the components of ethical servant leadership which are then followed by the decision on the findings on the test for hypothesis 2. The explanation and discussion of the conclusion on the hypothesis is presented afterwards.

### **Regression Model Fit**

The model fit test for the suitability of the regression model in describing the data used to test hypothesis 2 are summarised in Table 25.

**TABLE 25: MODEL FIT STATISTICS for ETHICAL SERVANT LEADERSHIP**

| Chi-square<br>likelihood | CFI  | RMSEA | NCP    | FMIN  | PCFI | PNFI | NFI  |
|--------------------------|------|-------|--------|-------|------|------|------|
| 9.431                    | .994 | 0.032 | 1.431  | 0.055 | .284 | .276 | .965 |
| DF =8                    | .494 | .148  | 18.708 | .139  | .165 | .181 | .544 |
| P = 0.307                |      |       |        |       |      |      |      |

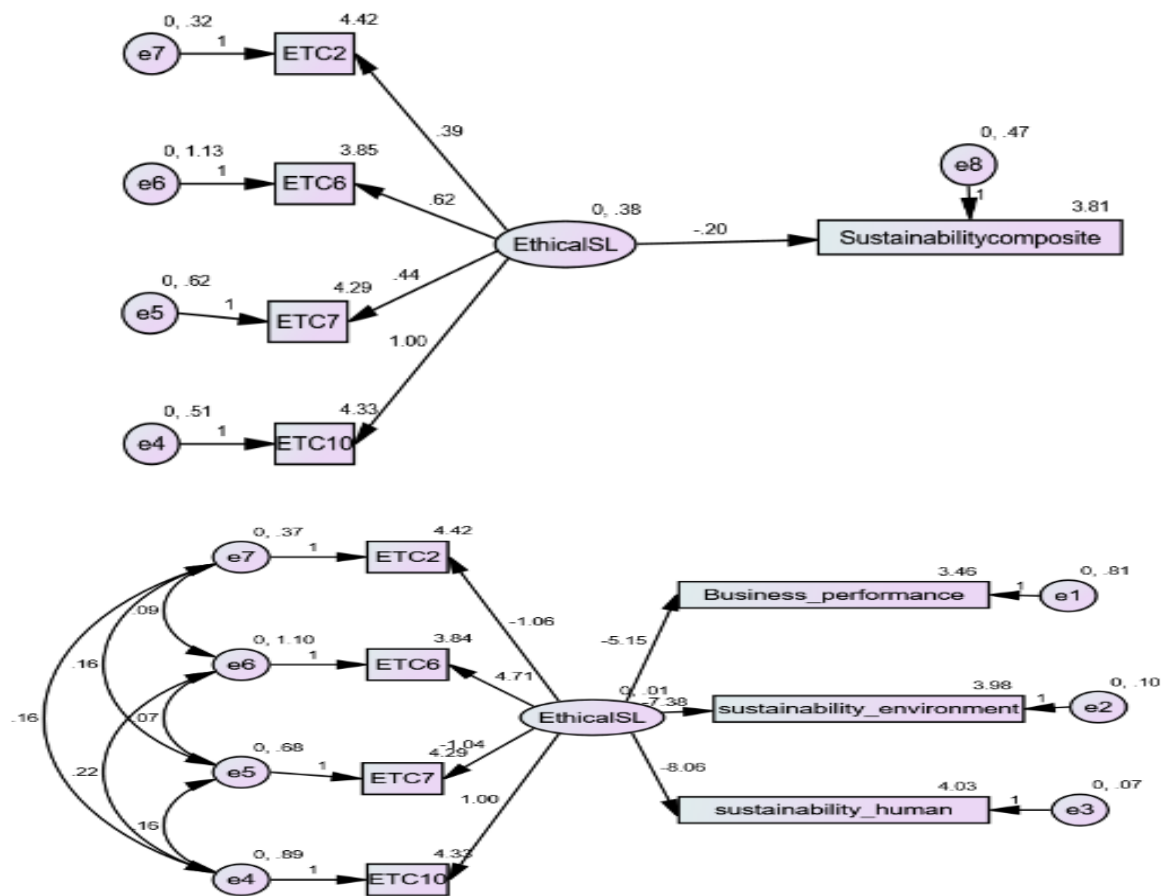
The results presented in the table are interpreted on the basis of the various parameters in the regression outputs. The Model Fit output parameters based on the RMSEA, NCP, FMIN, PCFI and PNFI show satisfactory model fit.

### **Path Analysis for Ethical Servant leadership Components**

As indicated in the introduction to the hypothesis 2, the second step of the analysis focused on the path diagram showing the specific contribution of the components of ethical servant leadership extracted through EFA. This was considered necessary to explain the causal effect of the extracted components on the composite and dimensions of sustainability. The EFA extracted four components from list of items presented in the questionnaire to the respondents SEM produced the path diagram shown in Figure 19 below.

**FIGURE 19 : PATH DIAGRAM for ETHICAL SERVANT LEADERSHIP**

**\COMPONENTS**



*Source: Survey Data, 2024*

**Key:**     *ETC2=Honesty*     *ETC 6=Follower Welfare*     *ETC 7=Societal Sensitivity*  
*ETC10: Personal Responsibility*

From the path analysis, it is observed that the p- values for all the endogenous variables are significant implying that the degree to which the dependent variables are associated with independent variable is relatively close. The estimate may determine the trend of the data under the study. The results for standardized (total or direct effects) show

the direction of the sustainability of planet, people and profit are in opposite direction though insignificant. The  $\beta$  value for the composite of ethical servant leadership when supported by the four extracted components is negative ( $\beta=-0.2$ ), while the  $\beta$  values for each of the three components of sustainability are all negative with people attaining the highest effect followed by planet and then profit (-7.36, -5.06, 5.15 respectively). In terms of how each of the components contributed towards ethical servant leadership when causing the effect on sustainability, honesty had the highest contribution followed by personal responsibility, societal sensitivity and the least being follower welfare (4.42, 4.33, 4.29 and 3.84 respectively). In the multiple regression, when ethical is regressed when the other components of servant leadership are present (figure 14, 15; table in 21-22) the  $\beta$  values for Ethical servant leadership both the unstandardized and standardized are negative at 0.2 and 0.14 respectively and the p-value is 0.045.

The findings show that  $\beta$  is -0.202, the critical ratio (C.R) or  $t$  value is -1.358, while  $P$  is  $>0.05$  at 0.174. Therefore, the  $\beta$  value of -0.202 means that a unit increase in ethical servant leadership results in a decrease of 0.202 points in the efforts by pharmaceutical distributors to attain sustainability. In view of these findings, the study concludes that ethical servant leadership has a negative statistical effect on sustainability of pharmaceutical distributors in Nairobi City County which is not statistically significant. The null hypothesis two is therefore not supported and the alternate is adopted. The study therefore concludes that Ethical Servant Leadership has a statistically significant negative effect on Sustainability of Pharmaceutical distributors in Nairobi City County.

The findings leading to the conclusion on hypothesis two of the study present useful insights on the continuing scholarship on servant leadership. The study relied on the results

obtained from the path analyses in the multiple regression model and that obtained using the EFA four components of ethical servant leadership in explaining the findings coupled with the extant theoretical, conceptual and empirical literatures.

The factor analysis extracted four components comprising ethical servant leadership. These were honesty, follower welfare, societal sensitivity and personal responsibility. The Path analysis diagram shows that each of the four components contributed towards sustainability to varying degrees. Ethical servant leadership had the highest contribution to the people component of sustainability followed by planet and the least being profit. The contributions were negative, implying that for every unit increase in ethical servant leadership, there would be a decline in sustainability. It is also observable that in spite of the negative contribution to sustainability, the covariance matrix shows that the extracted components are positively correlated among themselves.

The hypothesis reports negative contribution of ethical servant leadership on sustainability. The nature of the component of ethical leadership as conceptualized in the literature has some aspects that would justify the negative effect. The argument in the literature had indicated that the servant leader would be driven by personal moral values and would seek to increase ethical sensitivity as they are driven by behaviours that seek to enhance virtuousness and value for morality. These practices when assessed from the view point of business goals are likely to bring about an effect of slowed decision-making process, more time taken to arrive to a decision and embracing an attitude tending towards risk aversion for fear of violating ethical requirements or standards. This would most likely lead to fewer transactions, and communicating with sincerity in every aspect of business. Some attributes of ethical servant leadership more likely to bring about positive outcomes are those

that are practised to connect with the followers and provide direction. They touch on how to treat followers with fairness, treating them with honesty and transparency and creating an environment of honesty, fairness, respect and trust. The study was anchored on the arguments of Servant Leadership Model by Robert Greenleaf. Among the key tenets of this theory is the emphasis on ethical behaviour by leaders.

The previous researches done on ethical servant leadership are in agreement with the findings of the current study to some extent. Among those that found a significant negative effect are those that were done by Khazzaka (2019), Erete (2018), Onyango *et. al* (2018) and Adam *et. al* (2018). These were done in other contexts besides that considered for this study. That which has been done in a similar context to the current study is that done by Ogochi, (2022) in which morality was extracted as one of the factors comprising servant leadership. This study found a positive but non- significant statistical effect on policy implementation. This then leads to a series of mixed non conclusive findings on the contribution of Ethical servant leadership. The current research undertook to interrogate the possible cause of this mixed set of findings based on the nature of the construct, the context in which it was investigated and the manner in which it ought to be deployed.

In terms of the nature of ethical leadership as a component of servant leadership, the study draws from the postulates of the Servant Leadership Model by Greenleaf. According to Greenleaf, the ethical aspect of servant leadership is characterised by honesty, caring and being principled in making balanced decision. The model also indicates that the ethical servant leader communicates with followers about ethics and emphasizes the importance of ethical standards. The ethical servant leader will do so to create an ethical climate and culture to be the distinguishing characteristics of the prevailing situations in which leadership is

exercised. By creating this climate and culture, the leader opts to influence followers so that they can identify with the leader and emulate their behaviour rather than promote a simple economic exchange. This therefore, would indicate that where ethical servant leadership is embraced, both the leaders and the followers will not consider economic outcomes as the most critical point of focus for an organization. This logic from Greenleaf, has been argued to be a major characteristic of servant leadership in much more recent work by Eva *et al.* (2019) where they observed that the ethical behaviour in servant leadership, seeks to achieve the effectiveness of servant leadership by attaining followers' identification with the organization and their job satisfaction. From a behavioural lens, attaining identification with an organization and follower job satisfaction may not necessarily lead to attainment of productivity related goals. In line with this logic from the servant leadership model, it is possible to further explain the findings of hypothesis two by understanding the manner of its deployment.

According to Greenleaf, deployment of ethical servant leadership entails a combination of ethical decision making and ethical behaviour which requires a leader to have a clear set of core values and the courage to live by them in all areas of their lives as their common goal. This is found true, in the manner in which the extracted components of ethical leadership were found to behave in the context where the study was carried out. The extracted factors were, honesty, concern with follower welfare, demonstrating societal sensitivity and exercising personal responsibility. The descriptive statistics on these components showed that the respondents perceived them to be of relevance to a high extent with the mean values ranging between 3.6 – 4.4.

When this manner of its deployment is interrogated in relation to the context of investigation, it is possible to find more justifying facts for the conclusions on hypothesis 2. The pharmaceutical distributors, even though operating in a sector that is more concerned with humanistic goals, they are designed to operate as profit oriented concerns. In spite of the sector having a high dominance of health professionals, the sector attracts a large percentage of investment from profit-oriented investors whose goal is profit maximization. Under such a setting; therefore, an investor would be interested in deploying servant leadership to bring about attainment of economic interests. The path diagram indicated that as a result of the manner in which ethical servant leadership was deployed, the people component obtained the highest contribution then followed by the planet factor, the lowest contributed was the profit. The extracted factors for ethical servant leadership explaining this varying contribution to sustainability, indicated that those that addressed the people factor, of honesty and follower welfare were embraced at mean scores of 4.43 and 3.85 respectively. That which focused on environment, described as societal sensitivity scored a mean of 2.29, however, that addressing behavioural aspects likely to address profit which was described as personal responsibility was rated at a mean of 3.64.

In view of these discussions, the study identifies a number of implications. The first implication regards the focus that leaders need to give attention to when deploying ethical servant leadership so as to obtain desired positive outcomes. The study indicated that more attention has been given to deploying ethical leadership to bring about follower related outcomes such as individual follower job satisfaction. Leaders would better connect ethical servant leadership with organizational desired goals if the focus extends beyond individual follower outcomes to also address in equal measure desired organizational goals. Secondly,

there is an implication arising out of the context where the study was done. It is observed that the characteristics of this pharmaceutical industry by its nature is designed to operate with high level of ethical practice. When it comes to deploying ethical servant leadership, this design may condition the manner in which ethical servant leadership is deployed, such that, it may fail to address desired business goals. Thus, it may be necessary for the leaders in the industry to be sensitised on the manner in which leadership ought to be deployed to bring about influence on the part of followers towards desired organizational goals.

In conclusion therefore, the findings and discussions on hypothesis 2 make several contributions to knowledge not only in servant leadership but also on leadership in general. First, the study provides useful insights on the process through which ethical servant leadership may predict or explain organizational outcomes. The findings of the study pointed to the role of the climate created by the leader when influencing followers, and how that climate becomes a fertile ground for ethical aspects of leadership to explain organizational outcomes. Secondly, the findings point leaders and managers of organizations to the need to expand the scope of the attention given to application of ethical servant leadership from individual level outcomes to organizational level outcomes. That way, the attained individual level outcomes can be used as a form of capability to drive and sustain desired organizational goals.

### ***Effect of Persuasive Mapping Servant Leadership on Sustainability***

Hypothesis 3 of the study sought to explain the effect of Servant Leadership on Sustainability of Pharmaceutical distributors in Nairobi County. The null hypothesis was stated as: H<sub>04</sub>: Persuasive Mapping Servant Leadership does not have a significant statistical effect on sustainability of pharmaceutical distributors in Nairobi County. The findings on the

hypothesis are reported and interpreted using statistical tests presented in Section 4.5.1 Tables. 21-22 and those performed to establish the model fit and path analysis using the EFA extracted factors for the construct of Persuasive Mapping Servant Leadership. Table 21-22 and Figures 14 and 15 presented the statistical outputs for the combined analysis when Persuasive servant leadership is operating in conjunction with the other components of servant leadership. The model fit output and the path analysis diagram constructed using the EFA extracted factors are presented and briefly discussed before the decision on the test of the hypothesis and the corresponding interpretation.

### Model Fit Summary

The SEM model fit statistical parameters for the Persuasive Leadership and the extracted factors are summarized in Table 27.

**TABLE 27 :MODEL FIT STATISTICS for PERSUASIVE MAPPING**

| Chi square<br>likely hood | CFI  | RMSEA | NCP     | FMIN  | PCFI PNFI | NFI  |
|---------------------------|------|-------|---------|-------|-----------|------|
| 251.744                   | .482 | .221  | 224.744 | 1.481 | .289 284  | .474 |
| DF=27<br>P=000            | .913 | .092  | 20.194  | .201  | .452 434  | .869 |

The model fit output for persuasive mapping servant leadership show that the Chi-square value for the maximum likelihood does not meet the threshold for  $p > 0.05$  indicating that the model fit is not good. The CFI values also are close to 1 and indicate a good fit. The RMSEA values are less than 1 and tend towards 0; thus, indicating an acceptable fit level. The PCFI and PNFI values though falling below the threshold of 0.6 are significantly different from 0 and above the 50% of the threshold on the basis of which the model fit is considered good.

### **Path Analysis**

The path analysis diagram constructed by SEM relied on the six components that EFA retained to comprise persuasive mapping servant leadership. The section of the data collection instrument presented to respondents had eight statements out of which 6 were retained during factor analysis. The factors were labeled as:

C 41=Persuasive in handling staff

C 42=Gifted in Persuading others

C 43=How well gifted in persuading

C 44=Holding others Accountable

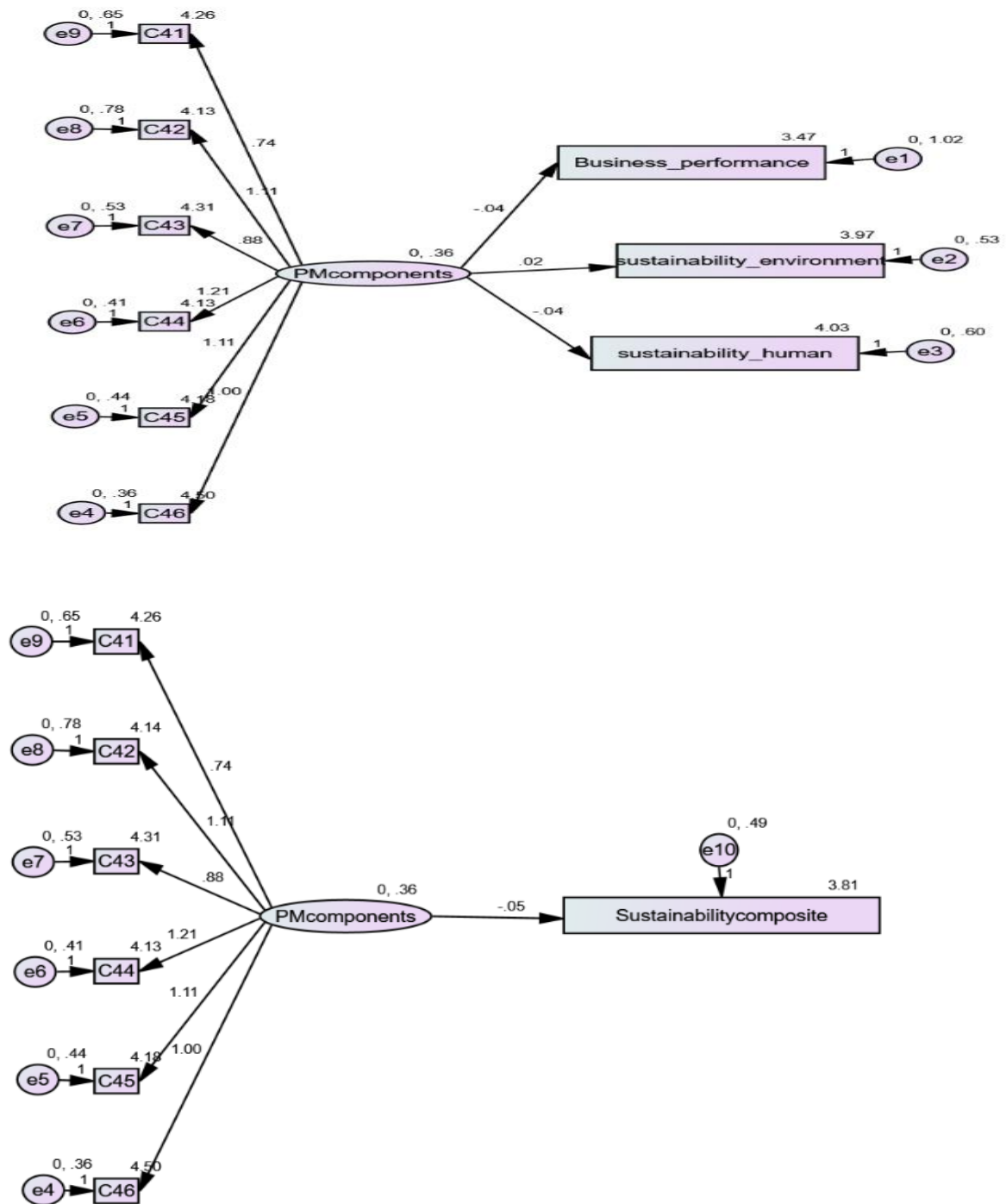
C 45=Persuasive towards Staff

C 46=Convincing Team Members

### **Path Analysis**

The SEM constructed path analysis diagram showing the effect of the components of persuasive mapping on the components of sustainability is presented in Figure 21.

**FIGURE 21: PATH DIAGRAMS RELATING PM with INDICATORS and COMPOSITE OF SUSTAINABILITY**



The path analysis results for Persuasive Mapping Servant leadership when supported by the six components extracted indicates that it causes a mixed effect on the three components of sustainability with the profit and people being negatively affected while planet is positively affected (-0.04,-0.04 and 0.02 respectively). When persuasive mapping servant leadership is regressed on sustainability when combined with the other components of servant leadership as presented in Tables 21-22 and figures 14-15, the results show that the  $\beta$  value for persuasive is positive ( $\beta=0.07$ ;  $p>0.05$ ). The variable causes positive effects on each of the three components of sustainability with the highest effect being on people and the least on profit ( -0.13, 0.17 and -0.01 respectively). The  $\beta$  value of 0.07 implies that the increase in persuasive mapping servant leadership variable is associated with an increase in sustainability efforts though at an insignificant extent of 0.07 points.

Based on these findings, though persuasive mapping servant leadership has a positive effect on sustainability; this effect is not statistically significant. The null hypothesis three is supported and the alternate is not adopted in the study. In view of these findings, the researcher fails to reject the null hypothesis, implying that servant leadership by persuasive mapping has no significant effect on sustainability of pharmaceutical distributors in Nairobi County. The conclusion therefore on the finding on hypothesis six is that though there exists a positive statistical effect of Persuasive Mapping Servant Leadership on Sustainability, this effect is not significant. The study explains the conclusion on the findings on hypothesis four on the basis of the descriptive characteristics, the conceptual and theoretical nature of the construct and the previous studies.

The findings reported on hypothesis 4 relied on one component of persuasive mapping that was extracted as supported by six items that were retained from the original set

of items in the research instrument. The items include being persuasive in dealing with staff, being gifted in persuading others and holding others to high ethical standards. The aggregate mean for this component is 4.24, while the individual items were rated at mean values of 4.13, 4.18 and 4.5 respectively. The mean is high and one can infer that most respondents rated the three items under the component highly, which means that they agree to a relatively high degree that the respondents demonstrated persuasive mapping, while carrying out work tasks and in their interaction with followers. How the leaders sampled would achieve this is illustrated in the manner the construct was conceptualized and operationalized in the study. The study conceptualized persuasive mapping from the view point of how it enables leaders to interact with followers in a way that they buy into the reasons provided by the leader as the leader engages them to obtain their willingness. Through the engagement process, the leader demonstrates persuasion skills, sound reasoning in problem analysis, and provides followers with a direction on how to solve challenges (Barbuto & Wheeler, 2006; Mansyah & Rojuaniah, 2021 ; Rashid *et al.* 2019; Page & Wong, 2000).

In comparison with previous researches, the study notes that even though extant empirical research on the role of persuasion in enhancing sustainability efforts is limited, the few studies done so far can be clustered into two streams . The first stream of these studies is based on those that have reported a positive effect of persuasion on its organizational outcomes. Among these are the studies by Nanteza (2018), Hailu *et al.* (2021), and Yohaness (2017) who reported that when leaders use persuasive mapping, this would lead to positive organizational outcome. For example, Hailu *et al.* (2021) found that participation in company sponsored continual medical education and access to information from medical representatives resulted in more consumers subscribing or buying the product, resulting in increased sales. Similarly, Yohaness (2017) concluded that Continuing Medical Education

(CME) was positively correlated with the sales of pharmaceutical products. These studies demonstrate the need for servant leaders to use persuasive mapping when working with their followers.

The second cluster of studies is based on those that have reported non-significant effect of persuasive mapping on organizational outcomes. Several studies in this category concur with this study's results that there is no statistically significant effect of servant leadership by persuasive mapping on the sustainability of pharmaceutical distributors in the informal settlement areas in Nairobi County. Although Karanja *et al.* (2021) found that leaders with high levels of persuasive mapping were better at conceptualizing issues and compelling others to do things, this did not translate to enhanced sustainability. Further, Kennedy *et al.* (2022) noted that despite access to Pre-Exposure Prophylaxis (PrEP) medication for people in Kenya, the uptake was low. Individuals were unwilling to pay for the product, which was priced at USD 5 per month, making it difficult to meet the financial sustainability requirements for a PrEP pharmacy model (Kennedy *et al.*, 2022). In addition, Manji *et al.* (2020) noted that leadership issues related to management, bureaucracy, personnel, and supervision contributed to patients' access to cardiovascular medication.

Based on these empirical studies, it can be deduced that despite leaders employing persuasion when leading their teams, other factors resulted in decline in levels of sustainability attained. From the work of Greenleaf, leaders need to rely on persuasion instead of position power or authority. The servant leader uses persuasive mapping to persuade rather than coercing followers into action. Greenleaf argues that by embracing persuasion the leader will not be able to take advantage of their power and status to coerce followers into compliance. The manner in which persuasive mapping will operate, is through

building group consensus through gentle but clear and persistence persuasion without exerting group compliance through position power.

The study finds that the basis used by Greenleaf limited to some extent in offering explanation as to how leadership would offer direction and influence through persuasion. The limitation arises from the arguments by Greenleaf advancing the process of leadership influence on the basis of one source of power, namely persuasion. Extant literature highlights several sources of power at the disposal of a leader for application depending on the situation they find themselves in. These are referent, position, expert, coercive and legitimate. In the logic of the contingency school of leadership, the leader will go through different situations as well as experience different contingencies that will require evaluation in the process of influence when exercising leadership. Among the situations and contingencies are those that may raise implications on how to obtain organizational results, as a result of behaviors exhibited by followers whose behaviour tends towards those corresponding to the characteristics of McGregor's theory X . McGregor's theory X and Y finds its relevance in the operation of persuasive servant leadership. Theory X points out that employees lack motivation and will require some measure of coercion to direct them towards desired goals.

Arising from this explanation and comparison with the previous researches, the study observes that three lessons may be drawn from the findings arising from these two clusters on the manner of the application of persuasive mapping as a technique to influence and direct followers. The first, is based on efficacy of persuasive mapping in directing followers towards desired organizational goals based on its nature and conceptualization. Regarding its conceptualization, persuasive mapping fails to comprehensively deploy all the bases of power at the disposal of the leader based on the contingencies they find themselves in. Secondly, based on this weakness in its conceptual focus when deploying servant leadership as

anchored on persuasive mapping, the servant leader will need to embrace a more pragmatic approach in order to excise the leadership process in order to properly direct follower efforts towards productivity-oriented concerns. Based on this call for a more pragmatic approach, the study raises the third lesson which is based on the call to identify complimentary leadership theories that will complement the postulates of the servant leadership model to be better anchored and practiced in other contexts that are profit oriented in nature. The discussions have raised the relevance of the arguments found in the contingency school of thought, situational leadership and McGregor Theory X & Y on motivation.

In conclusion therefore, the findings and discussion on hypothesis 3 make several contributions to knowledge, not only in servant leadership, but also on leadership in general. First, the hypothesis offers insights on how leadership can deploy persuasive mapping to achieve greater efficacy. The study pointed at the limitations of deploying persuasive mapping as the main basis for influence in complete absence of other sources of power. Due to the behavioral nature of human beings, which may manifest through behaviors tending towards those suggested by McGregor in Theory X and Y, persuasive mapping would be more effective when it taps into the other basis of power such as, legitimate, referent power, position power, coercive power and expert power. Second, the findings of the study help in identifying supportive theoretical base for explaining how the efficacy in persuasive mapping can conceptually and theoretically be attained. The weakness associated with persuasive mapping, invites a case for integrations of other relevant theories in leadership and management when applying persuasive Mapping over and above the model by Greenleaf. The study identifies existing complementarity between the servant leadership model and the Contingency Theory of Leadership and Macgregor Theory X and Y of motivation.

### ***Effect of Altruistic Servant leadership on Sustainability***

Hypothesis 4 of the study sought to explain the effect of Altruistic Servant Leadership on Sustainability of Pharmaceutical distributors in Nairobi County. The null hypothesis was stated as:  $H_{03}$ : Altruistic Servant Leadership does not have a significant statistical effect on sustainability of pharmaceutical distributors in Nairobi City County. The findings on the hypothesis are reported and interpreted using statistical tests presented in, Tables 26, figure 20 and those performed to establish the model fit and path analysis using the EFA extracted factors for the construct of Altruistic Servant Leadership. Tables 21-22 and Figures 14-15 presented the statistical outputs for the combined analysis when altruistic servant leadership is operating in conjunction with the other components of servant leadership. The model fit output and the path analysis diagram constructed using the EFA extracted factors are presented and briefly discussed before the decision on the test of the hypothesis and the corresponding interpretation.

### **Model Fit Summary**

The SEM model fit statistical parameters for the Altruistic Leadership and the extracted factors are summarized in Table 26

**TABLE 26: MODEL FIT STATISTICAL OUTPUT for ALTRUISTIC SERVANT LEADERSHIP**

| CHI.Square<br>likelihood | CFI  | RMSEA | NCP    | FMIN | PCFI | PNFI | NFI  |
|--------------------------|------|-------|--------|------|------|------|------|
| 17.427                   | .987 | 0.066 | 7.427  | .103 | .274 | .270 | .965 |
| DF =10                   | .897 | 0.154 | 36.151 | .266 | .384 | .376 | .544 |
| P = 0.065                |      |       |        |      |      |      |      |

The model fit output for altruistic servant leadership shows that the Chi-square value for the maximum likelihood meet the threshold for  $p > 0.05$  indicating that the model fit is good. The CFI values also are close to 1. The RMSEA values are less than 1 and tend towards 0 thus indicating an acceptable fit level. The PCFI and PNFI values though falling below the

threshold of 0.6 are significantly different from 0 and above the 50% of the threshold on the basis of which the model fit is considered good.

### **Path Analysis**

The path analysis diagram constructed by SEM relied on the five components that EFA found to comprise Altruistic Servant leadership. The section of the data collection instrument presented to respondents had five statements that were all retained during factor analysis. The factors were labeled as:

AC 11=Putting the interests of others ahead of the leaders own interests

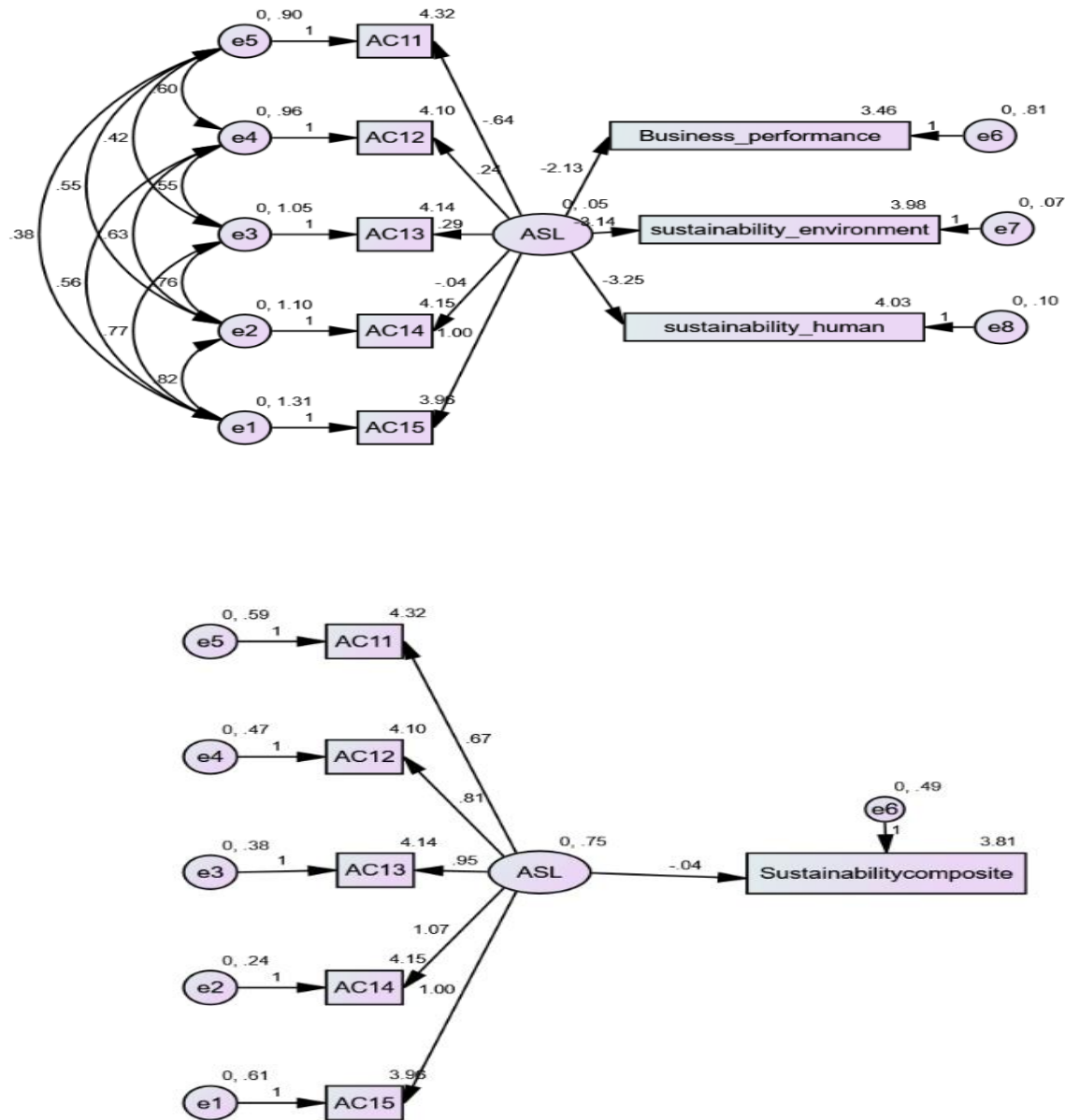
AC 12=Serving followers at all costs

AC 13=Self sacrifice

AC 14=Going beyond the call of duty

AC 15=Going through hardships at all costs to defend team

FIGURE 20: PATH ANALYSIS for ALTRUISTIC SERVANT LEADERSHIP



The path analysis results for Altruistic Servant leadership when supported by the four components extracted indicates that it causes a negative effect on the three components of

sustainability with the highest being on people and the lowest on profit(4.03,3.98 and 3.36 respectively). The covariance matrix with the correlations among the five extracted components comprising altruistic servant leadership indicates that the components had a moderate to high correlations ( $.36 < r < .61$ ). When Altruistic servant leadership is regressed on sustainability when combined with the other components of servant leadership as presented in Table 21-22 and figures 14-15, the results show that the  $\beta$  value for Altruistic is positive ( $\beta=0.07$ ;  $p>0.05$ ). The variable causes positive effects on each of the three components of sustainability with the highest effect being on profit and the least on planet (0.17, 0.05 and 0.01 respectively). Based on these findings, though Altruistic Servant leadership has a positive effect on sustainability, this effect is not statistically significant. The null hypothesis three is supported and the alternate is not adopted in the study. The conclusion therefore on the findings on hypothesis three is that though there exists a positive statistical effect of Altruistic Servant Leadership on Sustainability, this effect is not significant.

The study offers explanations on the conclusion on hypothesis 3 based on the theoretical nature of Altruistic Servant leadership, its observed behaviour in the context of investigation and the previous researches. The previous researches were those by Shavabari, (2018), Li *et al* (2019) , Ndomodo *et al.*, (2020), Yang *et al* (2021) and Kerr *et al*, (2022). All these previous researchers found a positive relationship between altruism and organizational outcomes. The current study is similar to the previous researches in terms of the context of investigations and the independent variable of altruism. In spite of the similarities, the findings of the current study differ from those of the previous in that it reports a non-significant positive effect of altruistic servant leadership on sustainability.

Considering the findings by these previous researches, it is important for the research to bring out comprehensive explanations on the possible cause of the non-significant effect.

A consideration of the focus and attention given to the measurement of the construct of Altruism in the previous researches offers some insights on the possible cause of the departure on the findings reported in this study. It is observed that the empirical studies focused on altruistic behaviours practiced in the pharmaceutical sector. The researchers noted that the pharmaceutical companies strive to provide free drugs to the underprivileged as noted by scholars such as Harindranath and Sivakumaran, (2021); Albarq and Suleiman, (2021), and (Baker, 2021). Sometimes, drugs provided for donations may have a short shelf life, and would otherwise go to waste if not utilized within specific timelines. The pharmaceutical sector also undertakes diverse sponsorship in trainings and conferences for specific target groups. Scholars have noted sponsorship and free medical camps were considered as altruistic behaviours in the industry (Bero & Parker, 2021; Lau *et al.*, 2018; Vishavadia & Solanki, 2021). The sponsorship could be with respect to the training materials such as books, travel, and tuition fees. Even though such acts of altruism may have no financial benefit for the sponsor, they are likely to improve the community or benefactor's situation such that the altruistic actions bring about positive effects on the organization's performance.

Over and above this explanation based on the focus given by the researchers, it is also observed that the characteristics of the context of the pharmaceutical confirm this focus given by the researchers. The pharmaceutical industry operates in a manner such that altruism is a core component of the behavioural practices by professionals in this industry. At the clinical level of practice, the health professionals embrace a great deal of altruism in their daily practice as they deal with clients most of whom are patients whereby altruism will

automatically find its deployment in the ordinary cause of the work of the medical professionals. According to (Bero & Parker, 2021; Lau *et al.*, 2018; Vishavadia & Solanki, 2021) altruistic behaviour is examined in the pharmaceutical distribution business as an essential part of the motivation for the pharmaceutical business.

In view of this, Baker, (2021), Harindranath and Sivakumaran, (2021), Albarq and Suleiman (2021), note that altruistic behaviour has been the force behind some of the practices leading to provision of free drugs to the unprivileged, sponsorship for trainings and conferences, medical camps and supply of other pharmaceutical branded items such as lab coats, stationeries and pens. Sharabati (2018) reported in an empirical study, some practices that impacted on sustainability of pharmaceutical distributorship to include; hiring of people with special needs, supporting of educational activities in the community, building physical infrastructure with community and distributing eco-friendly products. Le *et al* , also reported of similar practices touching on support to elderly persons living alone, emergency disaster relief and free medical insurance. In Kenya, Karanja, Were and Muturi (2021), pointed to the role of servant leadership in the public service as a form of calling that is driven by altruistic attributes.

In the current study, Altruistic Servant Leadership was operationalised and measured using perceptual indicators that display the philosophical nature of Altruistic servant leadership. The construct of altruistic servant leadership was measured using five indicators that were retained in the EFA output. They comprised putting team interest ahead of the leader's, sacrificing one's interests for others sake, going beyond the call of duty to meet others' needs, making personal sacrifices for team members, and enduring hardships to defend team members. The aggregate mean for the Altruistic variable based on these

measured attributes is 4.11. The mean is high and one can infer that most respondents rated the five items under the variable highly, which means that they philosophically agreed with the attitudinal and cognitive aspects of the personality related features that distinguish altruistic driven servant leader. The items comprising altruistic component had their means ranging between 3.96 and 4.26, implying that the component was embraced to a high extent among the sampled respondents.

The nature of altruism is such that altruistic behaviours will manifest through actions that are intentional and voluntary, are undertaken with a view of enhancing the welfare of other persons without any anticipation for reciprocal payments, and are linked to servant leaders Yang *et al.* (2021); Darvishmotevali and Altinay (2022); Pressentin (2022); Tantri *et al.*, (2022). Theoretically, the construct of altruistic servant leadership is anchored in the Model of Servant Leadership by Greenleaf. The model presents altruistic behaviours as one of the key defining characteristics of servant leadership. The attribute of altruism is embedded in servant leadership to bring about behaviours that are intentional and voluntary in nature, with the aim of enhancing the welfare of other persons without anticipation for reciprocal payment. Conceptually, altruistic leadership demonstrates some features that would explain how its application will lead to negative organizational culture. It is based on holding communities' interest ahead of those of one's own and focuses on followers needs primarily while those of the company are peripheral. It is the best description of servant leadership in the belief that focus should be service to others first. It has been presented as the leading motivating factor for servant leaders so that in practice, it would provide a model to followers in humility and empathy.

In view of this theoretical nature, having reported findings that show insignificant statistical effect on sustainability, it would be of interest for scholarship to offer explanation as to how it may be applied in practice for better outcomes in organizations. The study found a suitable explanation drawn from the behavioural science perspective on how it has been applied in motivation. The study opted for this given the central role that motivation plays in the leadership process.

The role of altruism in behavioural studies traces origin in behavioural studies that link the motivation process to organizational performance. Porter and Lawler (1968) considered it as a factor that when combined with others in the organization to direct and influence followers, would lead to enhanced organizational citizenship behaviour (Porter & Lawler 1968). According to the model of extra role performance proposed by Porter and Lawler, altruistic attributes of a worker would combine with courtesy, sportsmanship, civic virtues and conscientiousness to bring about organizational citizenship behaviour. In order for altruism to bring about the desired levels of organizational outcomes, leadership is required to play an important role in bringing about the necessary levels of follower motivation so that the follower can generate a sufficient level of effort which would bring about the desired organizational outcomes. Thus, in the current study, while different components of altruistic servant leadership were perceived to be of relevance to a high degree, there is still a dilemma arising with regard to whether altruistic servant leadership was deployed to influence the followers so that they are motivated to generate a sustained effort directed towards desired organizational outcomes.

It is observed that the five components of altruistic servant leadership that were retained from the original set of items, had strong correlations among themselves. In addition,

when deployed in the manner demonstrated by the characteristic behaviour of each of the components, the profit component of sustainability was the highest contributed to followed by people and the least contributed to was the planet. Out of the components of altruistic servant leadership, those that focused on the people were the majority in the list retained and each scoring a mean score of slightly above 4. Those that focussed on supporting team work had a mean score measuring slightly below 4.0.

The study, relying on these arguments, makes several implications. The first implication arises from its nature and how it needs to be applied in the context of leadership to bring about desirable organizational outcomes. Its main focus is that of service to others and it needs to be deployed in combination with other organizational factors in order for it to bring about positive outcomes. The explanations given pointed to the need to combine it with behavioural aspects that would better align it with the leadership process so that it can be part of leadership process of causing influence and providing directions. Secondly, in order to attain the expectations of the first implication, the study raises the second implication based on the need for integration of behavioural science models that explain the linkage between the motivation process, leadership needs to initiate in the design of work programmes so as to incorporate altruism in combination with relevant behavioural attributes of courtesy, civic virtues and conscientiousness.

In conclusion therefore, the findings and discussion on hypothesis 4 make several contributions to knowledge, not only in servant leadership, but also on leadership in general. The first contribution arises from the understanding provided on the theoretical and conceptual nature on how altruism as a component of leadership can predict organizational outcomes. The findings and the explanations have indicated that the manner in which it

emphasizes service to others first, needs to be complemented with by attributes obtained from the motivational process that would better align altruism with the leadership process. Secondly, the study and the explanations given on this hypothesis, provides a theoretical and conceptual link between altruism and the motivation process at the practical level of its application, as a component of leadership.

### **Test of Mediating Effect Hypothesis**

Hypothesis five of the study tested the mediating effect of social innovation on the relationship between servant leadership and sustainability. The criteria used for this hypothesis relied on the approach by Baron and Kenny (1986) which outlined four steps. The steps measured the direct effects of the composite independent variable on both the composite and components of the dependent variable. The summary of the SEM outputs for each of the steps showing the model fit, regression analysis and the path analysis are presented in Tables 28-31 and Figures 22-25.

#### **Step 1**

The first step of procedure for testing for the mediating effect of Social Innovation required that the independent variable is regressed on the dependent variable. The composite of Servant Leadership was regressed on the composite of sustainability with the model fit, regression parameters and the path analysis structure presented in Tables 28-31 and Figure 22.

**TABLE 28: MODEL FIT OUTPUT for COMPOSITE OF SERVANT LEADERSHIP**

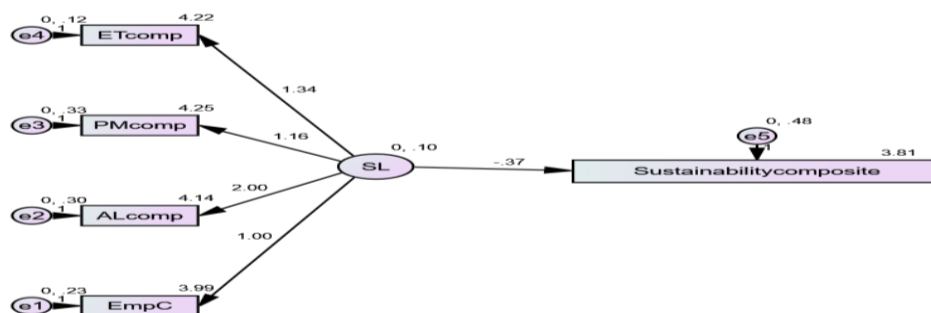
|         |   | CFI  | RMSEA | NCP    | FMIN | PCFI | PNFI | NFI  |
|---------|---|------|-------|--------|------|------|------|------|
| STEP    | 1 | .908 | .120  | 12.161 | .101 | .303 | .294 | .883 |
| 17.161  |   |      |       |        |      |      |      |      |
| DF=5    |   |      |       |        |      |      |      |      |
| P=0.004 |   |      |       |        |      |      |      |      |

The model fit parameter values for CFI, FMIN, PCFI and PNFI meet the threshold required for model goodness of fit. The model for the first step of the mediating effect hypothesis test satisfies the criteria and thus the model is suitable.

**TABLE 29: REGRESSION OUTPUT for STEP 1 OF MEDIATING EFFECT HYPOTHESIS**

| Unstandardized Coefficients |      |    | Estimate | S.E. | C.R.   | P    | Label |
|-----------------------------|------|----|----------|------|--------|------|-------|
| EmpC                        | <--- | SL | 1.000    |      |        |      |       |
| ALcomp                      | <--- | SL | 2.004    | .369 | 5.429  | ***  | par_1 |
| PMcomp                      | <--- | SL | 1.160    | .253 | 4.586  | ***  | par_2 |
| ETcomp                      | <--- | SL | 1.340    | .247 | 5.433  | ***  | par_3 |
| Sustainabilitycomposite     | <--- | SL | -.369    | .227 | -1.623 | .105 | par_4 |
| Standardized Coefficients   |      |    | Estimate |      |        |      |       |
| EmpC                        | <--- | SL |          |      |        |      |       |
| ALcomp                      | <--- | SL |          |      |        |      |       |
| PMcomp                      | <--- | SL |          |      |        |      |       |
| ETcomp                      | <--- | SL |          |      |        |      |       |
| Sustainabilitycomposite     | <--- | SL |          |      |        |      |       |

**FIGURE 22: PATH ANALYSIS DIAGRAM for SERVANT LEADERSHIP and SUSTAINABILITY**



#### KEY

ETcomp- Ethical

PMcomp-persuasive Mapping

ALcomp- Altruistic leadership

## EmpC- Empathy

### SL-Servant Leadership

In step one, the composite of servant leadership was regressed on the composite of sustainability and showed the beta coefficient with a negative value of -0.37, further the components of servant leadership, contributed to varying degrees with Altruistic making the highest contribution (2.0), followed by ethical (1.34) then persuasive mapping (1.16) and empathy (1.00) having the lowest. The adjusted  $R^2$  value is 0.381.

### Step 2

In step 2, the composite of Servant Leadership was regressed against Social Innovation. Two components were extracted for the mediating variable from the EFA output which were also included in the regression analysis in step 2. The model fit summary, regression parameter outputs and the path analysis are presented in Tables 30-31 and Figure 23.

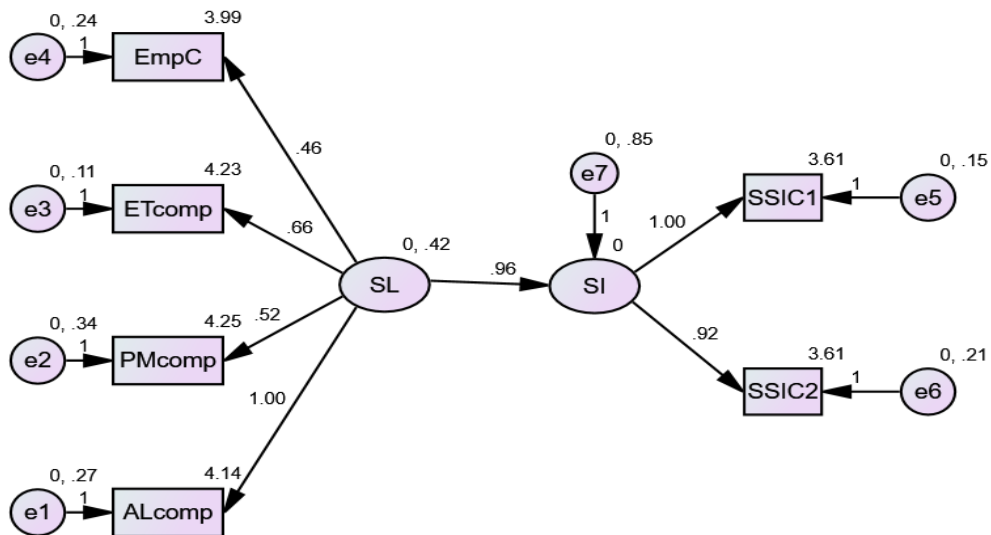
**TABLE 30: MODEL FIT STATISTICS for STEP 2 of MEDIATING TEST**

|                     | CFI  | RMSEA | NCP    | FMIN | PCFI | PNFI | NFI  |
|---------------------|------|-------|--------|------|------|------|------|
| STEP 2 –<br>104.835 | .899 | 0.096 | 68.835 | .617 | .558 | .528 | .850 |
| DF – 41             |      |       |        |      |      |      |      |
| P= 0.001            |      |       |        |      |      |      |      |

The model fit parameter values for CFI, RMSEA, FMIN, PCFI and PNFI show that the regression model for step 2 meets the required threshold for a good fit and therefore suitable for the regression analysis.

**TABLE 31: REGRESSION COEFFICIENTS**

| Unstandardized Coefficients |      |    |          |      |                  |
|-----------------------------|------|----|----------|------|------------------|
|                             |      |    | Estimate | S.E. | C.R. P Label     |
| SI                          | <--- | SL | .956     | .171 | 5.596 *** par_5  |
| ALcomp                      | <--- | SL | 1.000    |      |                  |
| PMcomp                      | <--- | SL | .523     | .099 | 5.311 *** par_1  |
| ETcomp                      | <--- | SL | .662     | .087 | 7.567 *** par_2  |
| EmpC                        | <--- | SL | .459     | .085 | 5.410 *** par_3  |
| SSIC1                       | <--- | SI | 1.000    |      |                  |
| SSIC2                       | <--- | SI | .917     | .089 | 10.270 *** par_4 |
| Standardized Coefficients   |      |    |          |      |                  |
|                             |      |    | Estimate |      |                  |
| SI                          | <--- | SL | .560     |      |                  |
| ALcomp                      | <--- | SL | .781     |      |                  |
| PMcomp                      | <--- | SL | .503     |      |                  |
| ETcomp                      | <--- | SL | .788     |      |                  |
| EmpC                        | <--- | SL | .521     |      |                  |
| SSIC1                       | <--- | SI | .946     |      |                  |
| SSIC2                       | <--- | SI | .912     |      |                  |

**FIGURE 24: PATH ANALYSIS DIAGRAM for SERVANT LEADERSHIP and SOCIAL INNOVATION**

KEY

ETcomp- Ethical Servant Leadership

PMcomp-Persuasive Mapping Servant Leadership

**ALcomp- Altruistic Servant leadership**

**EmpC- Empathy Servant Leadership**

**SL-Servant Leadership**

**SI- Social Innovation**

**SSIC1- Social innovation component 1:Promoting Social Values**

**SSIC2- Social innovation component 2:Community Empowerment**

The results presented in the path analysis indicate that the  $\beta$  value for Servant Leadership is 0.96 implying that servant leadership has a positive effect on social innovation. Altruistic has the highest contribution to servant leadership (1.00) followed by Ethical (0.66), Persuasive Mapping (0.52) and the lowest is Empathy (0.46). The two components of Social innovation were contributed at an equal level ( $R^2=3.61$ ).

### **Step 3**

Step 3 tested the effect of social innovation on sustainability. The model fit statistics, regression coefficients and path analysis diagram are presented in Tables 32-33 and Figure 25.

**TABLE 32: MODEL FIT STATISTICS FOR STEP 3 of MEDIATING TEST**

|            | CFI   | RMSEA | NCP   | FMIN | PCFI | PNFI | NFI  |
|------------|-------|-------|-------|------|------|------|------|
| Chi        | 1.000 | 0.000 | 0.000 | .018 | .267 | .265 | .993 |
| Likelihood |       |       |       |      |      |      |      |
| 3.011      |       |       |       |      |      |      |      |
| DF – 4     |       |       |       |      |      |      |      |
| P= .556    |       |       |       |      |      |      |      |

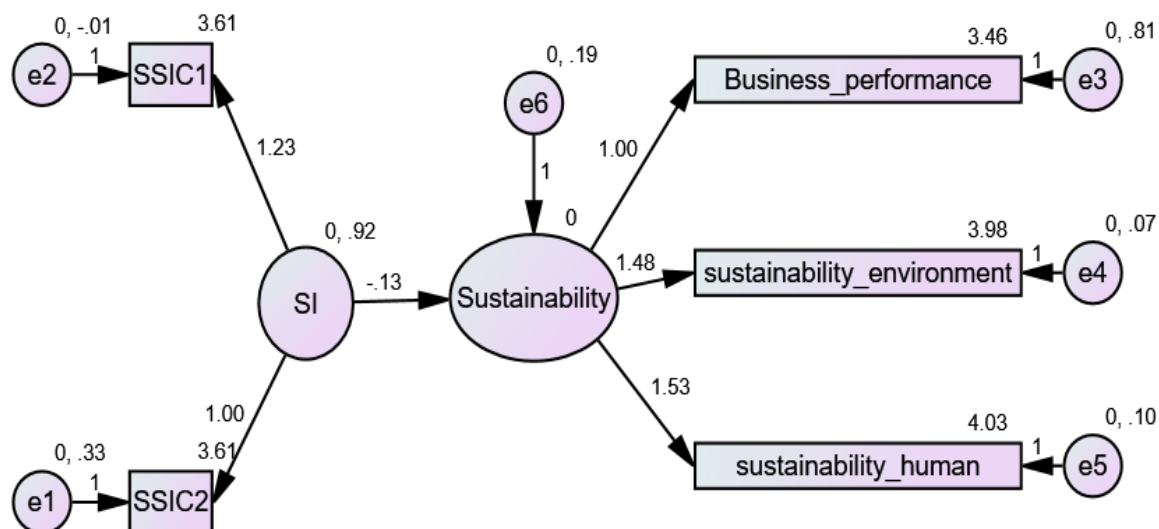
The parameter values for Chi- square likeli hood. CFI, RMSEA,NCP, FMIN, PCFI and PNFI meet the requirement for a model goodness of fit. The regression model is suitable for the intended analysis purpose.

**TABLE 33: REGRESSION COEFFICIENTS for STEP 3**

| Unstandardized Coefficients |      |                |  | Estimate | S.E. | C.R.   | P    | Label |
|-----------------------------|------|----------------|--|----------|------|--------|------|-------|
| Sustainability              | <--- | SI             |  | -.134    | .048 | -2.816 | .005 | par_4 |
| SSIC2                       | <--- | SI             |  | 1.000    |      |        |      |       |
| SSIC1                       | <--- | SI             |  | 1.231    | .233 | 5.286  | ***  | par_1 |
| Business_performance        | <--- | Sustainability |  | 1.000    |      |        |      |       |
| sustainability_environment  | <--- | Sustainability |  | 1.478    | .277 | 5.326  | ***  | par_2 |
| sustainability_human        | <--- | Sustainability |  | 1.534    | .286 | 5.365  | ***  | par_3 |

|                            |      |                |  | Standardized Coefficients |  |  |  |       |
|----------------------------|------|----------------|--|---------------------------|--|--|--|-------|
|                            |      |                |  | Estimate                  |  |  |  |       |
| Sustainability             | <--- | SI             |  |                           |  |  |  | -.280 |
| SSIC2                      | <--- | SI             |  |                           |  |  |  | .859  |
| SSIC1                      | <--- | SI             |  |                           |  |  |  | 1.005 |
| Business_performance       | <--- | Sustainability |  |                           |  |  |  | .454  |
| sustainability_environment | <--- | Sustainability |  |                           |  |  |  | .929  |
| sustainability_human       | <--- | Sustainability |  |                           |  |  |  | .915  |

**FIGURE 25: PATH ANALYSIS DIAGRAM for SOCIAL INNOVATION and SUSTAINABILITY**

KEY

**SI- Social Innovation****SSIC1- Social innovation component 1: Promoting Social Values**

### SSIC2- Social innovation component 2: Community Empowerment

The Beta coefficient has a negative value of -0.13 implying that social innovation has a negative statistical effect on sustainability. The people component was the highest contributed ( $R^2=4.03$ ) followed by planet ( $R^2=3.98$ ) and the lowest being profit ( $R^2=3.46$ )

#### Step 4

Step 4 of the mediating effect analysis tested the effect of servant leadership on sustainability when the mediating factor of social innovation was present. The model fit output, regression coefficients and the path analysis diagram are presented in Tables 34-35 and Figure 26.

**TABLE 34: MODEL FIT STATISTICS for STEP 4 of MEDIATING TEST**

|          | CFI  | RMSEA | NCP    | FMIN | PCFI PNFI | NFI  |
|----------|------|-------|--------|------|-----------|------|
| STEP 4 – | .939 | 0.093 | 34.955 | .347 | .483.501  | .905 |
| 58.955   |      |       |        |      |           |      |
| DF – 24  |      |       |        |      |           |      |
| P= 0.000 |      |       |        |      |           |      |

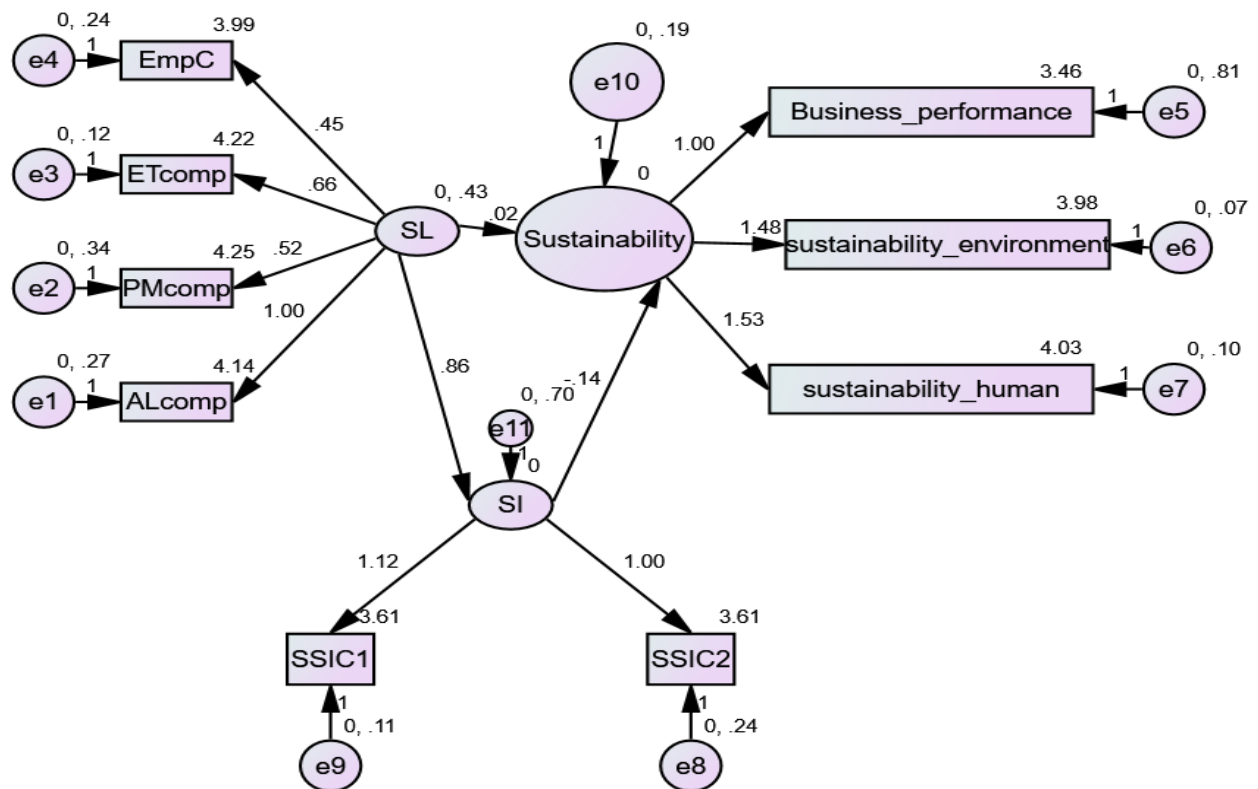
The model fit parameter values for CFI, RMSEA, FMIN, PCFI and PNFI meet the requirements for a good fit. The model is suitable for the intended purpose of analysis.

**TABLE 35: REGRESSION COEFFICIENTS for STEP 4**

| Unstandardized Coefficients |      |                |          |      |        |      |       |
|-----------------------------|------|----------------|----------|------|--------|------|-------|
|                             |      |                | Estimate | S.E. | C.R.   | P    | Label |
| SI                          | <--- | SL             | .857     | .159 | 5.378  | ***  | par_8 |
| Sustainability              | <--- | SL             | .023     | .086 | .266   | .791 | par_7 |
| Sustainability              | <--- | SI             | -.140    | .058 | -2.428 | .015 | par_9 |
| ALcomp                      | <--- | SL             | 1.000    |      |        |      |       |
| PMcomp                      | <--- | SL             | .521     | .098 | 5.319  | ***  | par_1 |
| ETcomp                      | <--- | SL             | .655     | .087 | 7.572  | ***  | par_2 |
| EmpC                        | <--- | SL             | .454     | .084 | 5.393  | ***  | par_3 |
| Business_performance        | <--- | Sustainability | 1.000    |      |        |      |       |
| sustainability_environment  | <--- | Sustainability | 1.484    | .280 | 5.307  | ***  | par_4 |
| sustainability_human        | <--- | Sustainability | 1.534    | .286 | 5.358  | ***  | par_5 |
| SSIC2                       | <--- | SI             | 1.000    |      |        |      |       |
| SSIC1                       | <--- | SI             | 1.120    | .101 | 11.121 | ***  | par_6 |
| Standardized Coefficients   |      |                |          |      |        |      |       |
|                             |      |                | Estimate |      |        |      |       |
| SI                          | <--- | SL             | .557     |      |        |      |       |

| Unstandardized Coefficients |      |                |          |      |      |   |       |
|-----------------------------|------|----------------|----------|------|------|---|-------|
|                             |      |                | Estimate | S.E. | C.R. | P | Label |
| Sustainability              | <--- | SL             |          |      |      |   | .033  |
| Sustainability              | <--- | SI             |          |      |      |   | -.307 |
| ALcomp                      | <--- | SL             |          |      |      |   | .785  |
| PMcomp                      | <--- | SL             |          |      |      |   | .503  |
| ETcomp                      | <--- | SL             |          |      |      |   | .784  |
| EmpC                        | <--- | SL             |          |      |      |   | .519  |
| Business_performance        | <--- | Sustainability |          |      |      |   | .453  |
| sustainability_environment  | <--- | Sustainability |          |      |      |   | .931  |
| sustainability_human        | <--- | Sustainability |          |      |      |   | .913  |
| SSIC2                       | <--- | SI             |          |      |      |   | .900  |
| SSIC1                       | <--- | SI             |          |      |      |   | .959  |

**FIGURE 26 PATH ANALYSIS FOR SERVANT LEADERSHIP, SOCIAL INNOVATION AND SUSTAINABILITY**



**ETcomp- Ethical**

**PMcomp-persuasive Mapping**

**ALcomp- Altruistic leadership**

### **EmpC- Empathy**

### **SL-Servant Leadership**

### **SSIC1- Social innovation component 1**

### **SSIC2- Social innovation component 2**

The beta coefficient for Servant Leadership with the effect on Sustainability is positive at 0.02, while that of servant leadership affecting social innovation is positive at 0.86. The Coefficient for Social Innovation is negative at -0.14. In terms of the components of the independent variable, altruistic had the highest contribution followed by ethical, persuasive then empathy. For the mediating variable, component one on promoting social values had the highest contribution followed by component 2 on community empowerment. For the dependent variable the people component was the highest contributed to ( $R^2=4.03$ ), followed by environment ( $R^2=3.98$ ) and profit being the least ( $R^2=3.46$ ).

The decision on whether Social Innovation mediates the relationship is based on the criteria by Baron and Kenny (1986), and MacKinnon *et.al* (2007) .It is observed from the SEM results that when Social Innovation is introduced, the effect of Servant Leadership on Sustainability, changes by 0.39 from negative -.37 to .02 in this case the coefficient of servant leadership has changed but it is significantly different from zero 0 , which provided evidence of partial mediation, thus the study concludes that social innovation has a significant partial mediating effect on the relationship between Servant Leadership and Sustainability of pharmaceutical distributors servicing the informal settlement areas in Nairobi county. The null hypothesis is not supported and the researcher fails to reject the alternate hypothesis 4 that Social Innovation has a significant statistical mediating effect on the relationship between Servant Leadership and Sustainability. Thus, the observation of the study is that the strength of the relationship between Servant Leadership and Sustainability, partially depends

on the level of Social Innovation, initiated by the leadership in the pharmaceutical distributors in Nairobi.

The findings on this hypothesis leading to the conclusion made, makes an important contribution towards scholarship on servant leadership and its outcomes. In steps 1 and 3 of the hypothesis's tests, the effects of servant leadership and social innovation on sustainability were observed to be negative, the same was noted in the direct effect hypothesis where two of the four components of servant leadership affected sustainability in a negative way. From a business point of view, the negative effects raise concerns, since, hosting servant leadership in an organization incurs economic resources. The interest of any organization is to obtain positive returns from every unit of economic resource invested into business. With the precedence of a negative effect, in the direct effects hypothesis, two concerns would arise, first, should servant leadership however promising it may be, be adopted as an appropriate style for practice in organizations, given that its effect is negative. Second, if management chooses to embrace servant leadership, then under what conditions should it be deployed to offer positive returns.

The findings on hypothesis five, help to address this dilemma. From the theoretical and conceptual literature, the proponents of servant leadership, recommend its adoption with the indication that it will enhance attainment of positive outcomes through the direct effect it would accomplish on followers. What is now emerging from this hypothesis provides some light on how this positive effect can be realized in considering the role played by the components of servant leadership as it was observed in all the steps for mediating effects analysis. Two of the components loaded relatively higher than the others mainly altruistic leadership and ethical leadership. On the other side of the dependent variable the people

component and environmental were contributed to by servant leadership relatively higher. On the part of the mediating variable, one component focusing on promoting social values loaded relatively high on social innovation. The researcher explains the role of these two components of servant leadership to bring out a case on the circumstances in which servant leadership would make a positive contribution towards organisational outcomes.

The first point of explanation arises from the nature of social innovation and how it might emerge from servant leadership. Mugo and Macharia (2021) observed that innovation is an integral social process that is supported by networking, formation of groups and facilitates interactions among the people in a system. The networking process has a psychological effect on the part of followers on the one hand when the servant leader demonstrates concerns for followers' welfare, which enables the followers to develop a positive self-concept of themselves which is likely to motivate them to engage in innovative behaviours likely to address social challenges. This is in line with the view by Sijabat (2016) who considered social innovation from the viewpoint of innovative activities undertaken to fulfil social needs in society which in real life situations addresses ways of overcoming social challenges.

Moulaert *et. al* (2005), Adam and Hass (2008) indicated how deployment of servant leadership would bring about social innovation and ultimately affect organizational outcome in a positive way. In their model, of social innovation they highlighted the role of social innovation in enhancing the capacity of a community to satisfy human needs through change in social relations, which may be brought about by the enhanced capacity of individuals and community to serve as social engines.

In addressing the question as to how servant leadership may be deployed to bring about positive outcomes and the role that social innovation plays in such a setting, the study makes four observations. First, deployment of servant leadership attributes produce positive outcomes when linked to the intermediate construct of social innovation. According to Paratepe and Aboramadan (2020), servant leadership creates an environment for members and teams to exercise creativity and innovative practices in their work environment. It is observed from the path diagram in both step 2 and 4, the coefficient for Servant Leadership in relation to social innovation is positive. In addition, when servant leadership is operating to influence sustainability when social innovation is present, the effect also is positive. It is also observed that two components of servant leadership load relatively high while the profit component attains a higher level of effect. Altruistic leadership and ethical leadership load more highly on servant leadership. At the same time the profit component which was least contributed to in the direct effect hypothesis, gets better contributed to than the people to come second after planet.

Second, servant leadership creates an element of trust in the work environment which further leads to innovative practices. It is observed from the path diagram the 2 components of social innovation that is promoting social values and community empowerment have loaded highly when servant leadership is regressed on social innovation and the same obtains when servant leadership is regressed against sustainability when social innovation is present. Thirdly, servant leadership can lead to innovation by enhancing customer orientation among team members. Fourth, servant leadership leads to innovation through prioritization of employee development in task efficiency, community stewardship and self-motivation

aspects thereby, enabling employees to create a higher sense of work purpose and commitment.

Finally, in the context of the pharmaceutical distributors, social innovation will be able to respond to persistent issues by enabling social change in policy decisions and creation of relevant infrastructure. When social innovation is introduced, both as an independent and as mediating variable, there is significant contribution towards sustainability on the three components of planet, people and profit. Thus, by introducing the mediating variable of social innovation, the study indicates that in the application of servant leadership, organizations will need to first connect it to an aspect of business related outcome in order for it to make a positive contribution to the attainment of organizational goals. When social innovation was connected to servant leadership, it enabled the organizations to create the needed environment for catalysing the influence process through the motivation of followers.

These findings, conclusions and explanations on hypothesis five, present several implications. The first implication arises from the role played by social innovation in catalysing the influence servant leadership has on sustainability as an organizational outcome. It is observed that when social innovation is introduced, the effect of servant leadership changes from being negative to being positive. The second implication rises from the manner in which social innovation brings about this catalytic role. The conceptual and theoretical literature were used to indicate that the presence of social innovation in the relationship between servant leadership and sustainability helps to create the climate of trust which offers suitable ground for leaders and followers to initiate social innovation activities. In addition to this climate, it has also been demonstrated that the presence of social innovation brings in an element of customer orientation which helps to focus organizations attention to business

related outcomes, thereby, resulting to better performance. Thirdly, there is an implication arising from two dimensions of servant leadership when social innovation has been introduced. The study observes that the altruistic and ethical components of servant leadership loaded relatively higher in steps 2 to 4 of the mediating effect analysis. This would imply that when social innovation is playing its catalytic role, the two components of servant leadership would be critical in enabling social innovation to bring about positive results at the community level.

These explanations provide useful insights considered as important contributions to knowledge. First, the behaviour of the variables involved in the mediating effect hypothesis, provide understanding on how servant leadership can be deployed in organizations to bring about positive effects on sustainability. The findings have provided evidence that when social innovation is related to servant leadership and sustainability, it brings about positive effect. Secondly, the finding helps in explaining the specific attributes of social innovation in servant leadership that brings about the catalytic role for the effect to be positive. The explanation pointed to the critical role played by the climate of trust focused on customer orientation and input of altruism and ethics. Lastly, the findings serve to strengthen the call for adoption of servant leadership as an appropriate leadership style in organizations. The reported findings in the mediating test effects strengthens the case for the adoption of servant leadership in organization.

### **Test of Moderating Effect Hypothesis**

The last hypothesis of the research investigated the moderating effect of Market Entry Barriers on the relationship between Servant Leadership and Sustainability among pharmaceutical distributors in Nairobi City County. The moderating factor of Market Entry Barriers was considered relevant because of the challenges most of the pharmaceutical distributors face generally when entering the pharmaceutical distributors business and more specifically when accessing informal settlement areas. The test of the hypothesis followed the guidelines by Baron and Kenny (1986) to perform the test in three steps. Each of the steps are summarized together with the corresponding SEM outputs.

#### **Step 1**

In this step, the composite of servant leadership was regressed against the composite of sustainability and the results noted. In order to help the researcher provide explanation based on the behavior of the variables in the test, the components of both the independent and the dependent were included and the summary of the regression outputs showing the model fit and path diagram are summarized in Tables 28-29 and Figure 22. The beta coefficient has a negative value of -0.37, with the components of servant leadership, contributed to varying degrees whereby Altruistic makes the highest contribution, followed by ethical then persuasive mapping and empathy having the lowest. The resulting R square is 0.381.

#### **Step 2**

In the second step the same procedure as was applied in step 1, was followed to regress servant leadership on sustainability when the moderating variable has been introduced. Further, the components of each of the three variables are introduced to help the researcher offer explanation on the behavior of the variables. The SEM outputs showing the model fit and the path analysis are summarized in Tables 36-37 and Figure 27.

**TABLE 36: MODEL FIT RESULTS for MODERATING TEST STEP 2**

| Chi<br>Likelihood | CFI  | RMSEA | NCP    | FMIN | PCFI PNFI | NFI  |
|-------------------|------|-------|--------|------|-----------|------|
| 104.835           | .899 | 0.096 | 68.835 | .617 | .558 .528 | .850 |
| DF – 41           |      |       |        |      |           |      |
| P= 0.000          |      |       |        |      |           |      |

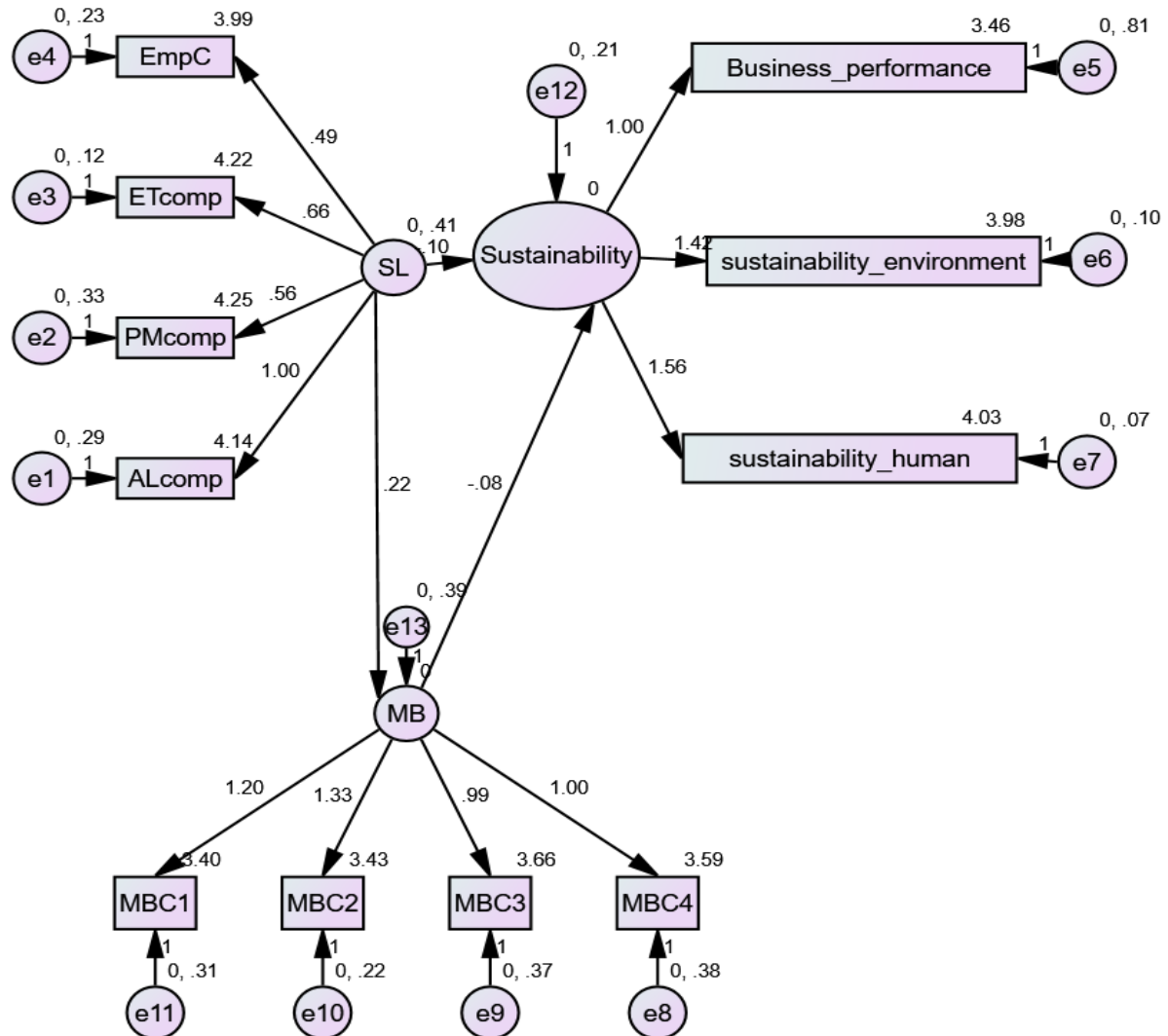
The parameter values for CFI, RMSEA and FMIN indicate that the model fit is good and suitable for the intended analysis purpose.

**TABLE 37: REGRESSION COEFFICIENTS for MODERATING TEST STEP 2**

| Unstandardized Coefficients |                     |  |          |      |                    |
|-----------------------------|---------------------|--|----------|------|--------------------|
|                             |                     |  | Estimate | S.E. | C.R. P Label       |
| MB                          | <--- SL             |  | .222     | .103 | 2.152 .031 par_11  |
| Sustainability              | <--- SL             |  | -.098    | .076 | -1.292 .196 par_9  |
| Sustainability              | <--- MB             |  | -.078    | .072 | -1.085 .278 par_10 |
| ALcomp                      | <--- SL             |  | 1.000    |      |                    |
| PMcomp                      | <--- SL             |  | .560     | .104 | 5.363 *** par_1    |
| ETcomp                      | <--- SL             |  | .664     | .098 | 6.779 *** par_2    |
| EmpC                        | <--- SL             |  | .489     | .090 | 5.442 *** par_3    |
| Business_performance        | <--- Sustainability |  | 1.000    |      |                    |
| sustainability_environment  | <--- Sustainability |  | 1.421    | .261 | 5.446 *** par_4    |
| sustainability_human        | <--- Sustainability |  | 1.565    | .295 | 5.302 *** par_5    |
| MBC4                        | <--- MB             |  | 1.000    |      |                    |
| MBC3                        | <--- MB             |  | .990     | .125 | 7.898 *** par_6    |
| MBC2                        | <--- MB             |  | 1.331    | .144 | 9.231 *** par_7    |
| MBC1                        | <--- MB             |  | 1.199    | .137 | 8.734 *** par_8    |

| Standardized Coefficients  |                     |  |  | Estimate |
|----------------------------|---------------------|--|--|----------|
|                            |                     |  |  |          |
| MB                         | <--- SL             |  |  | .223     |
| Sustainability             | <--- SL             |  |  | -.136    |
| Sustainability             | <--- MB             |  |  | -.107    |
| ALcomp                     | <--- SL             |  |  | .767     |
| PMcomp                     | <--- SL             |  |  | .528     |
| ETcomp                     | <--- SL             |  |  | .775     |
| EmpC                       | <--- SL             |  |  | .546     |
| Business_performance       | <--- Sustainability |  |  | .458     |
| sustainability_environment | <--- Sustainability |  |  | .901     |
| sustainability_human       | <--- Sustainability |  |  | .942     |
| MBC4                       | <--- MB             |  |  | .720     |
| MBC3                       | <--- MB             |  |  | .720     |
| MBC2                       | <--- MB             |  |  | .874     |
| MBC1                       | <--- MB             |  |  | .806     |

**FIGURE 28: PATH ANALYSIS DIAGRAM for SERVANT LEADERSHIP, MARKET ENTRY BARRIERS and SUSTAINABILITY**



**ETcomp- Ethical**

**PMcomp-persuasive Mapping**

**ALcomp- Altruistic leadership**

**EmpC- Empathy**

**SL-Servant Leadership**

**MB- Market entry barriers**

**MBC1- Market entry barrier component 1:Market Entry Barrier**

**MBC2- Market entry barrier component 2:Competitive Barrier**

**MBC3- Market entry barrier component 3:Financial Risk Barrier**

**MBC4- Market entry barrier component 4:Product Differentiation Barrier**

It was observed from the regression analysis that the coefficients of servant leadership when relating to Sustainability and market entry barriers were positive at 0.1 and 0.22 respectively while that of market entry barriers was negative at .08. The contribution towards the different components of Sustainability varied with the R squared values for people, planet and profit being 4.03, 3.98 and 3.46 respectively stands at 5.25 thus in step 2, the effect of servant leadership improves by 0.47 such that its effects is much greater. The contribution of the different components of servant leadership recorded the highest from Altruistic (1.00), while the lowest was Empathy at 0.49. Ethical and persuasive mapping each recorded a contribution 0.66 and 0.56 respectively. It is also observed that, the components of Market entry barriers touching on the market and the competitive barriers had the highest loadings of 1.2 and 1.33 respectively which were followed by product differentiation barriers and financial risk barriers at 1.00 and 0.99 respectively.

### Step 3

The last step of moderating effect involved regressing the composite of servant leadership on sustainability when the moderating variable market entry barriers and its interaction term are introduced. The results are summarised in Tables 38-39 and Figure 29.

**TABLE 38: MODEL FIT RESULTS for MODERATING TEST STEP 3**

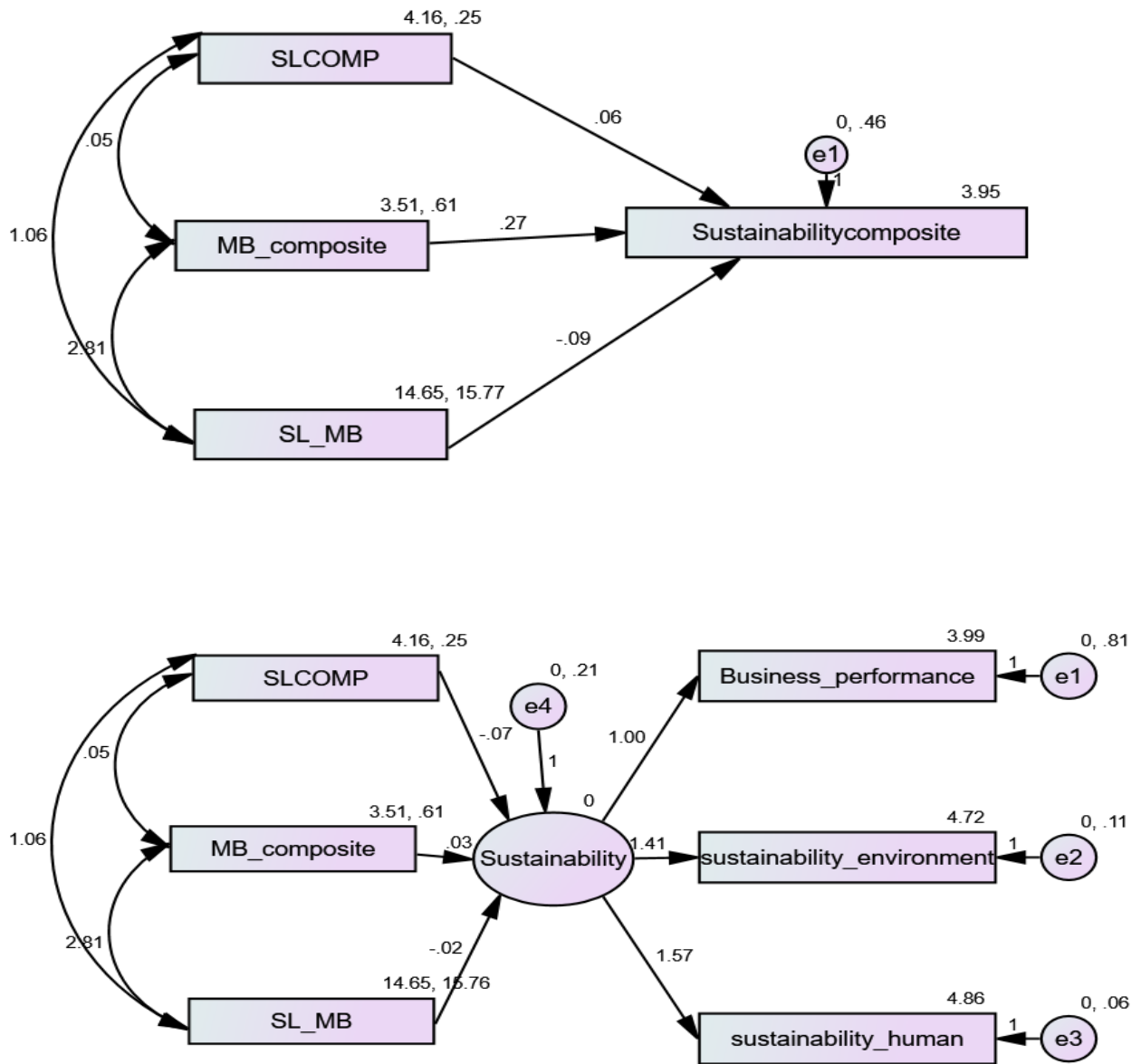
| Chi<br>Likelihood | CFI  | RMSEA | NCP  | FMIN | PCFI | PNFI | NFI  |
|-------------------|------|-------|------|------|------|------|------|
| 6.489             | .999 | 0.022 | .489 | .038 | .286 | .283 | .992 |
| DF – 6            |      |       |      |      |      |      |      |
| P= 0.371          |      |       |      |      |      |      |      |

All the parameter values in the model fit output point to a good fit situation. The model is suitable for the intended analysis purpose.

**TABLE 39: REGRESSION COEFFICIENTS for MODERATING TEST STEP 3**

| Unstandardized             |      |                | Estimate | S.E. | C.R.   | P    | Label |
|----------------------------|------|----------------|----------|------|--------|------|-------|
| SI                         | <--- | SL             | .840     | .156 | 5.397  | ***  |       |
| Sustainability             | <--- | SL             | .134     | .088 | 1.529  | .126 |       |
| Sustainability             | <--- | SI             | -.159    | .058 | -2.734 | .006 |       |
| Sustainability             | <--- | SL_MB          | -.043    | .013 | -3.397 | ***  |       |
| Sustainability             | <--- | MB             | .150     | .062 | 2.418  | .016 |       |
| ALcomp                     | <--- | SL             | 1.000    |      |        |      |       |
| PMcomp                     | <--- | SL             | .516     | .096 | 5.399  | ***  |       |
| ETcomp                     | <--- | SL             | .637     | .083 | 7.642  | ***  |       |
| EmpC                       | <--- | SL             | .435     | .082 | 5.285  | ***  |       |
| SSIC2                      | <--- | SI             | 1.000    |      |        |      |       |
| SSIC1                      | <--- | SI             | 1.125    | .100 | 11.215 | ***  |       |
| Business_performance       | <--- | Sustainability | 1.000    |      |        |      |       |
| sustainability_environment | <--- | Sustainability | 1.450    | .248 | 5.858  | ***  |       |
| sustainability_human       | <--- | Sustainability | 1.535    | .262 | 5.852  | ***  |       |
| MBC1                       | <--- | MB             | 1.000    |      |        |      |       |
| MBC2                       | <--- | MB             | 1.158    | .112 | 10.305 | ***  |       |
| MBC3                       | <--- | MB             | .836     | .100 | 8.396  | ***  |       |
| MBC4                       | <--- | MB             | .882     | .100 | 8.815  | ***  |       |
| Standardized               |      |                | Estimate |      |        |      |       |
| SI                         | <--- | SL             |          |      |        |      | .557  |
| Sustainability             | <--- | SL             |          |      |        |      | .181  |
| Sustainability             | <--- | SI             |          |      |        |      | -.324 |
| Sustainability             | <--- | SL_MB          |          |      |        |      | -.341 |
| Sustainability             | <--- | MB             |          |      |        |      | .226  |
| ALcomp                     | <--- | SL             |          |      |        |      | .799  |
| PMcomp                     | <--- | SL             |          |      |        |      | .507  |
| ETcomp                     | <--- | SL             |          |      |        |      | .775  |
| EmpC                       | <--- | SL             |          |      |        |      | .505  |
| SSIC2                      | <--- | SI             |          |      |        |      | .898  |
| SSIC1                      | <--- | SI             |          |      |        |      | .961  |
| Business_performance       | <--- | Sustainability |          |      |        |      | .482  |
| sustainability_environment | <--- | Sustainability |          |      |        |      | .928  |
| sustainability_human       | <--- | Sustainability |          |      |        |      | .932  |
| MBC1                       | <--- | MB             |          |      |        |      | .784  |
| MBC2                       | <--- | MB             |          |      |        |      | .886  |
| MBC3                       | <--- | MB             |          |      |        |      | .708  |
| MBC4                       | <--- | MB             |          |      |        |      | .740  |

**FIGURE 31: PATH ANALYSIS DIAGRAM for SERVANT LEADERSHIP, MARKET ENTRY BARRIERS and SUSTAINABILITY**



Key

SLCOMP- servant leadership composite

MB\_composite- Market entry barrier composite

SL\_MB- interaction term ( Servant leadership\*Market entry barriers)

The regression results in step 3 show that the coefficients for servant leadership and that of interaction term stand at 0.06 and -0.09 respectively. The coefficient for the moderating factor market entry barrier is positive at 0.27. This indicates that when the moderating factor and interaction term are present, the effect of servant leadership on sustainability changes from being negative to positive. The people component of sustainability is the highest contributed to ( $R^2=4.86$ ) followed by environment ( $R^2=4.72$ ) and finally profit ( $R^2=3.99$ ). Based on these findings, the study finds that the requirements for hypothesis 6 are satisfied as there is evidence of moderating effect arising from Market Entry Barriers. The Null hypothesis, is not supported and the study concluded that there is a significant statistical moderating effect of Market Entry Barriers on the relationship between Servant leadership and sustainability in the pharmaceutical distributors targeting informal settlements in Nairobi City County.

The findings leading to this study conclusions are considered important in the continuing scholarship on the contribution of servant leadership to the success of organizations. The study conceptualized that servant leadership would make a significant contribution to sustainability of organizations and the healthcare sector specifically. In this study, when servant leadership was tested against the dependent variable of sustainability, the results indicated a negative effect. This would raise concerns to organizations as to whether servant leadership should be adopted as a suitable leadership style for organizations in this industry. In considering the underpinning theory for servant leadership, Greenleaf argued that, when servant leadership is adopted in organizations to pursue business interests, it calls upon the leaders to operate as servant entrepreneurs. In this capacity as servant entrepreneurs, they are expected to go beyond the dynamics of supply and demand, in order to use the enterprise to serve others. This logic was applied in this study to provide an explanation on

how the presence of Market Entry Barriers would cause servant leadership to have a positive effect on sustainability. Using this lens provided by Greenleaf, servant leadership brings in some capacity of entrepreneurial focus where the servant leader focuses on emerging or available opportunities for them to serve various market places. Thus, though market entry barriers are conceptually considered as challenges, the servant entrepreneur translates it as an opportunity for service.

According to Spears (2010), an aspect of servant leadership that would further explain this is that which is based on building relationships with stakeholders. Spears had observed that relationships are considered more important for the servant leader than results. In this pursuit, the servant entrepreneur applying servant leadership tries to serve the interest of the stakeholders among whom are customers in the contexts of the prevailing market entry barriers. It is observed that in all the three stages of the tests of moderating effects, the component of sustainability based on people and the environment, were the highest contributed to and in the series of moderating tests, the level of contribution was highest in the third step when servant leadership was acting on sustainability when both the moderating factor and interacting term were present.

The underpinning theory for the moderating variable further provided useful insights that helped to explain the manner in which servant leadership would make a positive contribution. The study relied on the three cycle model of social innovation. The postulates of this theory indicate that when a servant entrepreneur is confronted by challenges emanating from market entry barriers, due to their strong desire to serve, the servant entrepreneur results to creative social strategies that seek to address the needs of communities in a way that enhances their capacity. Through social innovation, the servant entrepreneur is able to solve persistent issues by initiating social change effected through a variety of programs. And due

to the possible constraints likely to be sustaining the barriers arising from economic, cultural and political factors, the process invites multi-level engagements which seek to embed social innovation institutionally. As the roots of the three-cycle model of social innovation are based in the institutional theory of organizations, it provides useful basis for explaining the phenomenon in which the servant leader transforms an organization to serve as servant entrepreneurship agent to bring about development at the community level to enhance need satisfaction.

The previous researches focusing on market entry barriers found a positive influence on organizational outcomes. The study had relied on works by Chitra and Kumar (2020), Newham *et al.* (2018), Maini and Pammoli (2020), Godman *et al.* (2020) and Olk and West (2020). To some extent the current study findings agree with those previous researches, however, the current study used market entry barriers as a moderating factor and not an independent.

The findings raised several implications touching on first, the integration of social innovation into servant leadership practice as a strategy in addressing the challenge arising from market entry barriers. Second, the behavior of servant leadership when confronted by situational challenges in a context where it is applied. Third, the role of institutionalism in the application of servant leadership in contexts where businesses face challenges arising from market entry. It is observed that while the conventionally the theory and conceptualization in business perceives market entry barriers as challenges, servant leadership considers it from an entrepreneurial lens as an opportunity to serve.

From the summary of the three moderating analysis steps, it is noted that the effect of servant leadership is negative before the moderating factor is introduced, but makes a positive effect on sustainability when the moderating factor is introduced. When the interaction term

is introduced, the effect of servant leadership on sustainability improves by 0.3 points to - 0.07. This implies that the contribution of servant leadership to sustainability is much stronger when leadership of the pharmaceutical distributor is aware of the variety of the market entry barriers they have to deal with.

It is observed that in terms of how servant leadership contributes to the three dimensions of sustainability, when market entry barriers is introduced, the planet component is the component with the highest contribution followed by people and the least is profit. The components of market entry barriers that contributed more were component 2 and 1 which focused more on the perceptions of the leaders on the structural and strategic barriers aspects that deal with market related factors of marketing, patenting, accessibility to inputs and cost of doing business in the respective industry. On the part of servant leadership, altruistic component had the highest contribution. Further, the market entry barriers had a high correlation with interaction term of market entry barriers and servant leadership.

The findings on hypothesis six make an important contribution to knowledge in leadership. First, the findings have served to provide an avenue for extant theoretical and conceptual literature to explain how servant leadership is conditioned by contingent factors of the context to bring about positive effects on sustainability. The study has offered explanations using the model of servant leadership to demonstrate that when servant leadership confronts situational challenges, by its nature of serving others, it transforms the leadership in place to exhibit entrepreneurial behaviors that enhance the organizations ability to respond to the situational challenges. Secondly, the study has offered not only theoretical and conceptual insights but also practical insights on the connection between market entry barriers and social innovation when approached from the lens of servant leadership. Using the postulates of the three-cycle model, the research offered explanation that indicated the market

entry barriers faced by the pharmaceutical distributors would require an internally generated response through social innovation. The findings further provide sufficient explanations which serve to strengthen the call and case of the adoption of servant leadership in organizations.

#### **Summary of Chapter Four**

This chapter consist of the research based on the data that was obtained from the field work. The chapter first presented the demographic characteristics of the respondents and those of the organizations that was sampled for the study. Factor analysis results were presented on all the extracted factors for the study variable together with the corresponding measure of central tendency and dispersion. Interpretation for this were provided based on the 5 point Likert scale based on primary data. Diagnostic tests were performed to ascertain compliance of the data to multiple regression assumptions were reported and where no conformity was found, alternative mitigation measures of Q-Q plots and histograms with the corresponding normal distribution curves included for purpose of normality. Inferential analysis was undertaken to test the hypothesis and answer the research question which were reported using analysis obtained from structural equation modeling. The findings on each of the hypothesis used the model fit and confirmatory factor analysis outputs of regression coefficients and path analysis diagrams. For each of the hypothesis the regression parameters where interpreted and implications raised based on extant conceptual, theoretical and empirical literature. Useful insights on new knowledge were generated to demonstrate how the findings addressed the research gaps.

## **Chapter Five: Summary, Discussions and Conclusions**

### **Introduction**

This chapter provides a summary, conclusion and recommendations of the study. The purpose of the study was to determine the mediating and moderating effects of social innovation and market entry barriers respectively on the relationship between servant leadership and sustainability of pharmaceutical distributors targeting the informal settlement areas in the Nairobi City County. The first four objectives of the study investigated the effect of four dimensions of servant leadership, namely Empathy, Ethical, Persuasive Mapping and Altruistic servant leadership on sustainability of pharmaceutical distributors in Nairobi City County. Objectives five and six investigated the mediating and moderating effects of social innovation and market entry barriers respectively on the relationship between servant leadership and sustainability of pharmaceutical Distributors in the informal settlement areas in Nairobi City County.

The study recorded a response rate of 80% whereby 168 respondents drawn from 30 pharmaceutical distributors serving the various informal settlement areas in Nairobi City County. The respondents provided primary data that was analyzed and presented in chapter four of the study. The data provided information on the characteristics of the respondents as well as the study variables. The data was also used to provide insights into how it conformed to the assumptions underlying the inferential statistical analytical techniques used in the form of diagnostic tests. The inferential analyses undertaken helped in answering the research objectives through the test of the direct effects, the mediated effect and the moderated effect hypotheses. The findings reported in chapter four using this data are summarized, discussed and emerging implications leading to conclusions presented in this chapter.

### **Summary of Findings**

The study was quantitative in nature and obtained research data using structured questionnaire on a five-point Likert scale. The data obtained was analyzed using quantitative techniques that involved descriptive and inferential statistics. The biographic data on the characteristic of the respondents and the organizations from where the sample was obtained, were analyzed and reported using frequencies, percentages and frequency tables. The characteristics of the research variables were analyzed using measures of central tendency of the mean and dispersion of standard deviation. Exploratory Factor analysis was also applied to extract factors from each of the research variables. The inferential analysis was done through structural Equation Modeling so as to bring out the model fit results and the path analysis structural model. The analyzed data according to these statistics were presented in the previous chapter and summary of the main highlights of the different types of findings are presented in the remaining subsections of this section.

### ***Summary of Findings on Descriptive Characteristics***

The research obtained responses from 168 respondents drawn from 30 pharmaceutical distributors. The respondents comprised of CEO's, Pharmacists, sales and marketing professionals, logistics and supply chain professionals, finance, HR and administration managers. In terms of gender, male respondents dominated while the female ones were a minority. In terms of other demographic attributes, the higher percentage of the respondents had acquired education from the levels of undergraduate to post graduate. The pharmaceutical distributors they worked for were also reported to have ongoing business activities in the informal settlements in Nairobi at the time of the survey.

Exploratory Factor Analysis extracted several factors for each of the study variables. The independent variable servant leadership section of the research instrument, had 39 statements which were clustered into 4 factors namely; Empathy, persuasive mapping, ethical and altruistic. The respective components extracted for these were 4, 1, 4, and 1 respectively and the mean values indicated that the extracted components were practiced to a level of high extent with a relative high degree of uniformity across the pharmaceutical distributors. The mediating variable of social innovation had 2 factors that were extracted focusing on promoting social values and community empowerment. The moderating variable on the other hand had four components extracted focusing on Market Entry Barriers, competitive barriers, financial risks and product differentiation. The descriptive statistics indicated that the level of constraints experienced by the pharmaceutical companies was perceived to be at a moderate level. The dependent variable of sustainability had 3 indicators of planet, people, and profit. The descriptive statistics indicate that the level of achievement in each of these was rated at high extent

### ***Summary of findings on effect of Empathic Servant Leadership***

The first objective of the study sought to determine the effect of Empathic Servant Leadership on sustainability of pharmaceutical distributors in Nairobi City County. To answer the objective, hypothesis 1 of the study was tested which found that there was a negative effect of empathic servant leadership on sustainability of pharmaceutical distributors. The researcher explained the finding on this hypothesis based on the anchoring theory, conceptual nature of the construct of empathy and the previous researches. The study relied on the argument of the Greenleaf Model of Servant Leadership and the LMX Theory. The study argued that the postulates of these theories would not sufficiently explain the

behavior of the effect of empathy on sustainability in a business context and so raised the need for integration of the Mouton and Blake leadership Grid Model. In terms of the conceptual nature of the construct of empathy, the research explained the findings based on the defining attributes of feeling for others, which was at the centre of the four components that were extracted and found to be practiced at a level of high extent. As a result, the study observed that the attribute of feeling for others even though it contributed to sustainability in general, it however contributed more to the people component of sustainability. In terms of the previous researches, the research findings were not consistent with similar studies done in other contexts in the developed world. It was however found to have similarities with one previous research in Kenya focusing on the relationship between servant leadership and policy implementation among religious non-governmental organization (Ogochi, 2022).

The findings on hypothesis 1 of the study raised implications on the manner in which empathy would be integrated into the leadership process to bring about positive outcomes as well as the need for extending the scope of the theories anchoring its application beyond the Greenleaf Model and LMX Model to include the Mouton and Blake Leadership Grid. The findings on this objective provided insights suitable to offer understanding on the role of empathy in leadership in managing organizations. In addition, the research through this construct of empathy provided an opportunity to replicate existing scales on measurement of leadership on this dimension that had been piloted in other contexts and shed light on the current situation of empathic servant leadership in an emerging economy context.

### ***Summary of Findings on Effect of Ethical Servant Leadership***

The second objective of the study sought to determine the effect of ethical servant leadership on sustainability of pharmaceutical distributors. Hypothesis 2 that was formulated to answer this objective found a significant negative statistical effect on sustainability. The

study offered explanations on the findings on this hypothesis based on three bases; namely, the conceptual and the theoretical nature of the construct of ethical servant leadership, the characteristics of the context of the study and previous researches done on ethics.

In terms of the conceptual nature of ethical servant leadership, the construct of ethical servant leadership was supported by 4 components that were extracted of honesty, follower welfare, societal sensitivity and personal responsibility. The path diagram indicated that these components of ethical servant leadership had strong correlations amongst themselves and were also embraced to a high extent. As a result, ethical servant leadership had the highest contribution to sustainability out of all the 4 components of servant leadership. The anchoring theory, the Servant Leadership Model by Greenleaf offered an insightful explanation as to how ethical servant leadership would affect sustainability. The study relied on the argument that it contributes by creating a climate or culture within which followership is influenced. In terms of the context of the study, the research observed that ethical behaviors are core components of the expected behavior of the professionals in the pharmaceutical industry. As a result the manner in which ethical leadership is practiced may not be in line with the expectation of the practice of leadership to operate in a way that it causes influence directing followers towards attainment of business oriented goals.

The previous researches used to explain the findings on hypothesis 2 were categorized into two; first, those that were done in other contexts and second, those that were done in the local context. The study found that the findings on the hypothesis are inconsistent with those done in the local context. The findings raised two implications. The first regards the focus that should be given to the application of ethical servant leadership as a component of servant leadership and secondly, how the context of the pharmaceutical distribution stands to condition application of servant leadership and the need to raise awareness among practicing

managers so as to sensitize them on how best to apply ethical servant leadership. The findings reported on hypothesis 2 contribute towards understanding how ethical servant leadership can be configured in leadership to bring about desirable business outcomes and secondly, how to embed it in a context where ethics is part of the ordinary professional practice.

### ***Summary of Findings on Effect of Persuasive Mapping Servant Leadership***

The third objective of the study focused on determining the effect of persuasive mapping on sustainability of pharmaceutical distributors. The findings reported a non significant positive statistical effect of Persuasive mapping on Sustainability of pharmaceutical distributors. Three bases were used to explain the findings on this hypothesis, namely; the conceptual nature of the construct of persuasion, the theoretical anchorage of the hypothesis, and the previous researches.

The conceptual explanation relied on the perspective of persuasion embraced by the proponents of servant leadership mostly focusing on persuasion as the basis of the power put into effect to influence and direct followers. Three components extracted were found relevant in explaining the role of persuasive mapping, which touched on generally being persuasive and practicing the same when dealing with staff and when holding others to high ethical standards. The anchoring theory, was the model by Greenleaf, which proposes persuasion as a useful source of power that servant leaders need to use. Due to the non significant effect reported, the study argued that there is need to combine persuasive mapping with other bases of power, such as referent, expert, coercive, position and legitimate so as to deal with the many contingencies that the leader experiences. Thus, the study argued that the current theoretical base of applying persuasive mapping inching on servant leadership alone, requires input drawn from complementary theories in leadership whose postulates can better address the efficacy of persuasive mapping as an attribute of servant leadership. The study

therefore suggested that the Servant Leadership Model can borrow from McGregor's Theory X and Y and the contingency theory when applying persuasive mapping to influence and direct followers.

The findings of the current research on objective 4, were compared against previous researches whose findings were clustered into two categories. The first category comprised previous researches that showed significant positive effect of persuasive mapping to which the current research findings were found to be inconsistent. Secondly, there is the category of researches that found a non significant effect, which were found to agree with the current study's findings.

These findings reported on objective 3, raised three implications touching on measures that need to be taken to enhance the efficacy of persuasive mapping, the call to integrate other bases of power and the need to integrate arguments drawn from the contingency and McGregor Theory X and Y in complementing the Model of Servant Leadership by Greenleaf. The reported findings on hypothesis 3 and the explanations were found to contribute to knowledge in leadership by providing insights on how persuasion can be optimally deployed in leadership to influence and direct followers so as to bring about positive outcomes in organizations.

### ***Summary of Findings on Effect of Altruistic Servant Leadership***

Objective four sought to determine the effect of altruistic servant leadership on sustainability of pharmaceutical distributors in Nairobi City County. The corresponding hypothesis tested the effect of altruistic servant leadership on sustainability and found a positive statistical effect but was not significant. The study offered explanations on the findings based on the conceptual nature on the construct of altruism, relevant supporting theories and the previous researches. The conceptual literature relied on the key attribute of

altruistic servant leadership on service to others first. In line with this attribute four components of altruism were found critical based on the EFA components extracted. The four components comprising this construct were; team interest, self sacrifice, going beyond call of duty and enduring hardship to defend the team. All these were found to be embraced at a level of high extent.

The anchoring theory, was the model by Greenleaf, whose main point is that of service to others beyond the call of duty. The study observed that the postulates of this theory may not be sufficient to offer full explanation on the manner in which altruism would bring about positive outcomes to organizations. The study observed that the arguments of the theory require a behavioral science lens, which is obtained from behavioral science knowledge on the relationship between motivation and extra role performance whereby, altruism is one of the contributing factors. Thus, the model by Porter and Lawler (1968) was used to offer explanation on the combination of organizational factors required to deploy altruism for positive outcomes when viewed from a leadership process. The model suggested the role of civic virtue, conscientiousness and courtesy as possible factors that can be paired with altruism to influence organizational citizenship behaviors in a leadership process.

The previous researches relied on were found to focus on the manner in which altruism has been practiced in the pharmaceutical industry through donations and sponsorship. The findings based on this kind of practice, were inconsistent with the findings on the current research due to the manner in which the current research operationalized and measured altruism. The findings on this hypothesis raised two implications. The first implication touched on the manner of deployment of altruism as a construct for the leadership process while the second touched on the need for integration of behavioral science models

that anchor altruism into the leadership process using models of motivation suitable for application in the design of work programs.

### ***Summary of Finding on Mediating Role of Social Innovation***

Objective five of the study focused on testing the mediating effect of social innovation on the relationship between servant leadership and sustainability. The mediating effect hypothesis that addressed the objective followed the statistical procedures in the guidelines by Baron and Kenny (1986) and Mackinnon *et. al.* (1995) The study found evidence of partial mediating effect of social innovation on the relationship between servant leadership and sustainability. The test of this hypothesis was argued to be critical in addressing the concern by the management of organizations as to whether to adopt servant leadership, and how to do it in a manner that brings positive organizational outcomes. The study observed that when the mediating variable was introduced the effect of servant leadership was positive.

The explanation justifying this relied on the theoretical and conceptual nature of the two constructs in the hypothesis , the independent and mediating. In terms of the independent variable, the study noted that, two components of servant leadership had relatively high loading in the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> steps of the mediating process. Altruistic servant leadership and Ethical servant leadership were considered to be part of the explanation leading to servant leadership having positive statistical effect on sustainability when social innovation is introduced. On the other hand, the mediating factor was found to influence through its nature of promoting social values which was argued to be linked to social innovation. The study using the argument of the Three Cycle Model, indicated that the focus on promoting social values when combined with social innovation, helps an organization to generate capacity for

need satisfaction at the societal level thus, enhancing the ability of organizations to be sustainable.

The findings and explanations raised several implications touching on the role of social innovation in catalyzing the effect of servant leadership through two attributes of altruism and ethical leadership. Secondly, the study also raised an implication on the catalytic role of social innovation in the manner in which it helps to create a climate characterized by trust and customer focus by which servant leadership better responds to societal needs. The findings on the mediating effect help to strengthen the case for the adoption of servant leadership in an organization and in that way helps management of the pharmaceutical organizations in decision making on the suitable leadership styles to embrace.

#### ***Summary of Findings on Moderating Role of Market Entry Barriers***

The last objective of the study tested the moderating effect of market entry barriers on the direct effect of servant leadership on sustainability. The hypothesis was tested using the guidelines obtained from Baron and Kenny (1986). The study reported that when the moderating factor of market entry barriers was introduced into the relationship, the effect of servant leadership on sustainability, changes from being negative to being positive. The moderating effect was statistically significant. The study found evidence of moderating effect of market entry barriers on the relationship between servant leadership and sustainability.

The study explained the findings and conclusions on this hypothesis using the conceptual and theoretical nature of the independent and the moderating constructs. Using the logic of the model by Greenleaf, the study pointed to the manner in which servant leadership conceptually transforms when faced by situational challenges so as to bring about entrepreneurial behaviors when servant leadership is in operation to confront the market entry barriers. Using the three-cycle model, the study also pointed to the manner in which market

entry barriers when present in an environment where servant leadership is in operation, how it provides conditions that work to catalyze the role of servant leadership in manifesting entrepreneurial behaviors. The entrepreneurial behaviors are those that condition servant leadership to become more innovative in initiating social change in the quest to serve others and satisfy societal needs. Through this the study pointed that when market entry barriers were introduced, its presence catalyses servant leadership to engage in relationship building initiatives and multi- level engagement with stakeholders at the community level when bringing about social change so as to raise the capacity of the community to satisfy their needs.

The findings on this hypothesis, raised a number of implications. First, is the identified complementarity at the conceptual and theoretical level. At the conceptual level the study indicated that there is complementarity between the mediating variable of social innovation and moderating variable of market entry barriers. At the theoretical level, the study pointed to the complementarity between Servant Leadership Theory, the Three Cycle Model and the Institutional Theory. These findings provide an understanding into the manner in which servant leadership would deliver positive beneficial outcomes to organizations on the one hand and on the other strengthen the case for the adoption of servant leadership as a suitable leadership style in an organization.

### **Implications of the Findings**

The research findings reported, concluded and explained raised several implications. The study identifies three areas in which the implications are discussed; namely, based on research in leadership, the theory underpinning servant leadership and the practice of servant leadership. The first implication on research in leadership is drawn from the comparison between the findings reported in this research and those done previously. The previous

researches were clustered into two categories. First, those done in other contexts and those done in the local context. The direct effects hypotheses findings reporting negative effect were inconsistent with those done in other contexts. Even though those done locally are relatively few, the study found that the current findings were consistent with the findings reported by Ogochi (2022). Based on the study constructs operationalizing servant leadership, the research finds an implication touching on the role of the context of application of servant leadership in relation to desired organizational outcomes. The study suggests that, the characteristics of the Kenyan context being that of an emerging economy could be presenting distinct characteristics that may be conditioning the operation of servant leadership to bring about outcomes that are inconsistent with those reported in findings from research conducted in developed economies. This would therefore imply that in designing empirical investigations to explain the role of servant leadership, researchers may require to integrate the context of investigation in their conceptualization and measurement. This is consistent with some previous calls that suggested the need to investigate the behavior of servant leadership in other contexts Eva *et al.*, (2019).

The second implication, arises from the servant leadership model by Greenleaf. The study noted that much of the documented theoretical and empirical work has largely relied on the postulates of this model. In the current study, while relying on this model, the components comprising servant leadership were found to have mixed effects on sustainability ranging between negative to positive. The study therefore, questioned the adequacy of the postulates of this theory in positioning servant leadership for adoption in organizations especially where there are profit oriented concerns. In addressing these concerns, the study pointed to the need to identify other complementary theories that would provide a more practical way of applying the dimensions of servant leadership to better align with the leadership process so that it can

bring about positive productivity related outcomes. Thus, the study raised the need for complimenting the postulates of the servant leadership model with those drawn from leadership in general and the behavioral sciences. To this end, the study identified the useful contributions from Mouton and Blake's Leadership Grid, LMX, the Porter and Lawler Model, McGregor Theory X and Y, Contingency Theory, and Institutional Theory.

The third implication the study identified arises from the practice of servant leadership. The study used the findings from the direct effect hypotheses to make this implication. Having found the surprising mixed statistical effect of servant leadership on sustainability, the study considered the manner in which the components of servant leadership investigated in the study were packaged and applied in the context of investigation. The study noted that the components on their own, in their natural state may not bring about the desired positive organizational outcomes but rather, they need to be constructed to apply in a manner that serves the role of the leadership process. The study in offering explanations, observed that the components of the independent variable may not have been properly aligned to serve the expected role of a leadership process so as to motivate, influence and direct followers towards the desired productivity outcomes. This observation confirms the observations by Dierendnock (2011) that most measurement scales on servant leadership focused more on the people aspect than the leadership aspect. Given the findings of the study reported, the explanations offer insights on how servant leadership dimensions need to be designed and packaged for application in practice to serve their expected role in leadership. Thus, for servant leadership to drive organizational goals, the dimensions of this leadership style, would need to be packaged for application as drivers of the leadership process in the respective organizations where they are deployed.

## Conclusions

The focus of the study was to determine the mediating and moderating effects of social innovation and market entry barriers respectively on the relationship between servant leadership and sustainability of pharmaceutical distributors measured in terms of three metrics of profit, people and planet. The primary data obtained was analyzed using both descriptive and inferential statistics and findings reported, explained and discussed in this study. From the findings and explanations, the study makes several conclusions. First, servant leadership has been practiced in the sampled pharmaceutical distributors to a high level of extent. This extent of practice gave rise to a corresponding high level of social innovation which in turn, yielded a high level of sustainability of the pharmaceutical distributors. The level of practice of servant leadership bringing about these outcomes, was practiced in a context where the respondents drawn from the pharmaceutical distribution felt it is faced with a high level of market entry barriers.

Second, empathy and ethical servant leadership have a significant negative statistical effect on sustainability of pharmaceutical distributors. Each of the two components of servant leadership; namely, empathy and ethics though varying in their respective degree of effects on the components of sustainability, produced negative statistical effects, due to the manner in which each was deployed to serve as a catalyst of the leadership process to bring about outcomes in the pharmaceutical distributors sampled. This research attributes this negative effect to the fact that there is lack of proper alignment in deploying each of the two components to serve a catalytic role of driving the leadership process. Thus, alignment of the operation of empathic and ethical servant leadership to serve as a driver for the leadership process in addressing follower motivation, influence and direction towards productivity

related organizational goals would offer a better chance for attaining desired positive organizational outcomes.

Thirdly, the study concludes that, the negative effect of Servant Leadership on Sustainability is partially mediated by Social Innovation. It was observed that when Social Innovation was introduced into the relationship, the manner of operation of Servant Leadership when bringing about Sustainability outcomes changed from being negative to a positive one. The presence of the mediating factor of social innovation, served to provide the conditions in which servant leadership needs to be deployed in organizations to direct follower behaviors towards desired organizational productivity related goals, such as innovation. In this manner, the role of social innovation in the deployment of Servant Leadership is not only to strengthen the relationship between Servant Leadership and Sustainability but also to alter the direction of the effect Servant Leadership brings about on Sustainability. Therefore, the strength of the effect of Servant Leadership on Sustainability depends on the level of Social Innovation followers derive from the level of deployment of Servant Leadership. This in effect serves to strengthen the case for the adoption of servant leadership as a suitable leadership style in organizations.

The last conclusion the study makes is that market entry barriers has a statistical moderating effect on the relationship between servant leadership and sustainability. When market entry barriers was introduced into the relationship, similar to the observed change on how Servant Leadership affects Sustainability when social innovation was introduced, the negative effect of servant leadership on sustainability changed from that of a negative to a positive one. The presence of market entry barriers conditioned the operation of servant leadership based on its core defining feature of service to others to operate in a manner manifesting entrepreneurial behaviors that translate the challenges brought about by the

market entry barriers into opportunities for relationship building and engagement with community based stakeholders to bring about social change for enhancing the capacity of the community to satisfy their needs. Thus, market entry barriers serve to condition the operation of servant leadership to bring about positive organizational outcomes by enabling Servant Leadership to unleash its core nature of service to others in a way that identifies opportunities arising from the challenges brought about by market entry barriers. The presence of market entry barriers conditions Servant Leadership to operate in a manner that influences followers to exhibit behaviors that promote entrepreneurial purposes for organizations in a way that enhances their productivity related outcomes.

### **Contribution to Knowledge**

The findings of this study make several contributions to knowledge based on the context of investigation, conceptualization and practice of leadership. The first contribution the study makes is contextual in nature. The study was conceptualized to respond to identified gaps in knowledge on the scope of contexts in which servant leadership has been studied and the corresponding call to extend scholarship into new contexts. By undertaking the study in the pharmaceutical industry in Kenya, the study extends the existing scholarship on servant leadership into new contexts in response to calls made by other scholars such as Eva *et al* (2019) and Ogochi, (2022). The findings of this study provide an understanding on the relevant set of servant leadership dimensions practiced in line with the unique nature of the industry. Through application of the EFA approach used to extract the components of servant leadership that are practiced in the pharmaceutical industry, the study findings add to the existing stock of knowledge not only on the scope of the contexts but also on the extent of servant leadership practice. The extracted factors used to perform the SEM analysis further serve to provide insights on the behavior of servant leadership in the pharmaceutical industry.

Thus the study not only fills the contextual gap but also initiates a scholarly journey towards understanding of the behavior of servant leadership in this sector which has previously been understudied.

Alongside the contextual contribution, the findings reported in the study have achieved useful contributions that enrich the conceptual rigor of servant leadership. One of the conceptualization issues that underpinned the study was that based on the manner in which servant leadership has been conceptualized for measurement to contribute to the leadership process. In reference to the work of Diederonck (2011), the focus of the measurement of servant leadership has given more attention to the people aspect and failed to link it to the leadership process. The findings reported and discussed on hypotheses 1-4 of the study offered an opportunity to identify how and why the practice has continued over the period servant leadership scholarship has been in existence. The current study provided insights into issues touching on the design and deployment of servant leadership dimensions that have missed to link its practice with the leadership process. In addition, the study offered suggestions based on extant theoretical work in the behavioral sciences that need to be integrated into the manner in which servant leadership dimensions are conceptualized and applied in organizations by leaders to better direct, influence and motivate followers towards achievement of desired productivity goals in organizations. Towards this end, the study identified specific concepts drawn from a variety of relevant theoretical frameworks for integration with servant leadership when applied in organizations to provide a viable leadership style.

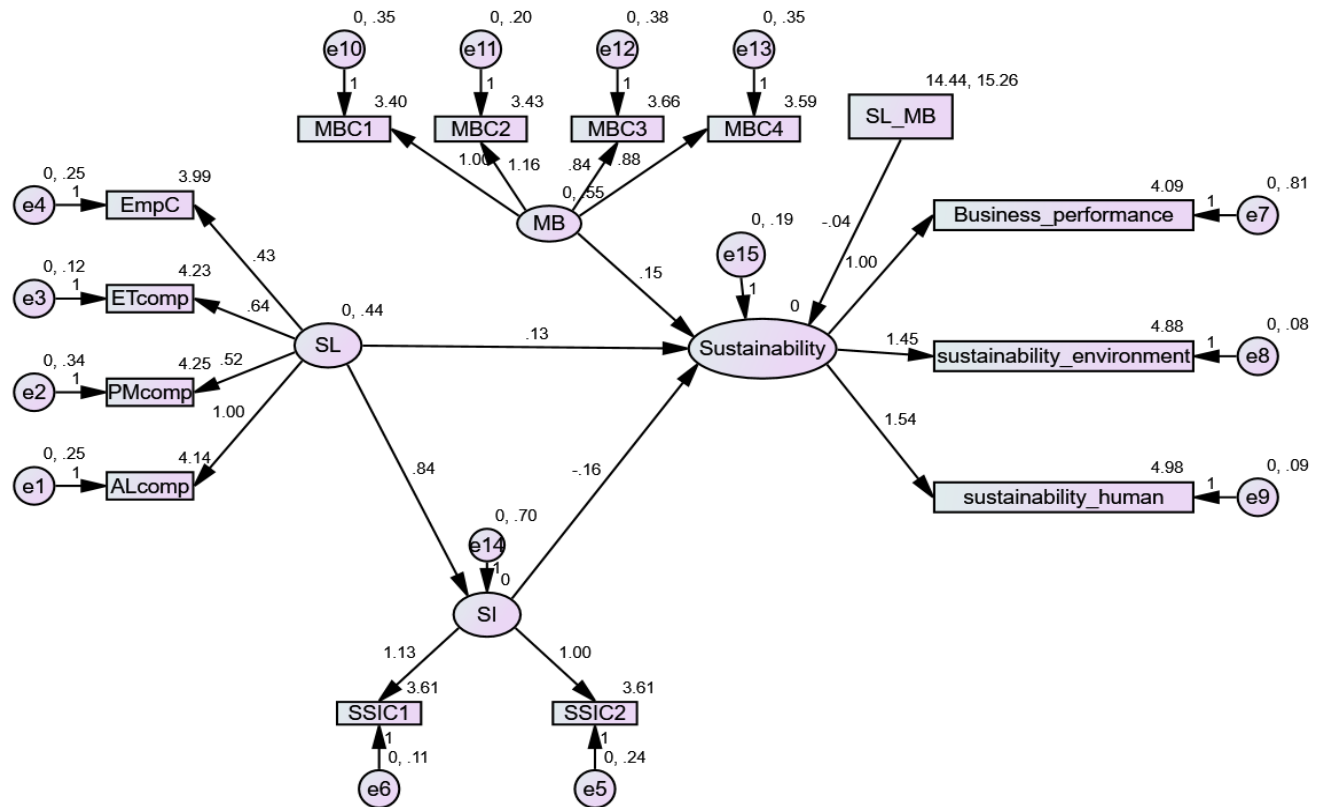
A third contribution the study makes is on the theoretical approach to the adoption and application of servant leadership. The interpretation on both the direct effects and indirect effects hypotheses raised the need for a wider scope in theorizing when applying the servant

leadership model due to its limitations that tended to produce negative and non-significant positive effects. The arguments advanced presented well-reasoned justifications for scholars and practitioners to apply servant leadership dimensions from a wider set of theoretical lenses. Thus, the roles to be played by the LMX, Blake and Mouton Grid, Porter and Lawler Model of Motivation, Theory X and Y, Contingency Theory and the Three Cycle Model in the application of servant leadership according to the Greenleaf Model have been suggested. By making this suggestion, the study not only identifies limitations of the Greenleaf Model but also identifies areas of complementarities between this model and other supporting theories drawn from leadership and the behavioral sciences.

The methodological rigor adopted for the study leading to the conclusions arrived is an important contribution that deserves mention. Previous scholarship on servant leadership that indicated that the state of the scholarship was moving towards its third phase of development called on scholarship to consider enhancing the methodological rigor. The design of the study adopted a quantitative orientation that obtained data suitable for analysis using advanced statistical techniques. Besides, the data on the independent variable relied on existing instruments that have been used in other contexts with satisfactory results. The study analyzed both descriptive and inferential data obtained using these replicated scales using robust statistical techniques powered by SEM methods that advance the statistical rigor above those of the ordinary regression analysis. The SEM approach was able to provide authentic outputs that pass the test of the limitations arising from ordinary regression analysis in explaining cause effect analysis through path analysis diagrams and model fit analysis from multiple statistical parameters as permitted by the robust nature of the SEM approach. The findings reported in the study thus raise the bar in the statistical rigor required in investigating complex phenomena typical of behavioural science research.

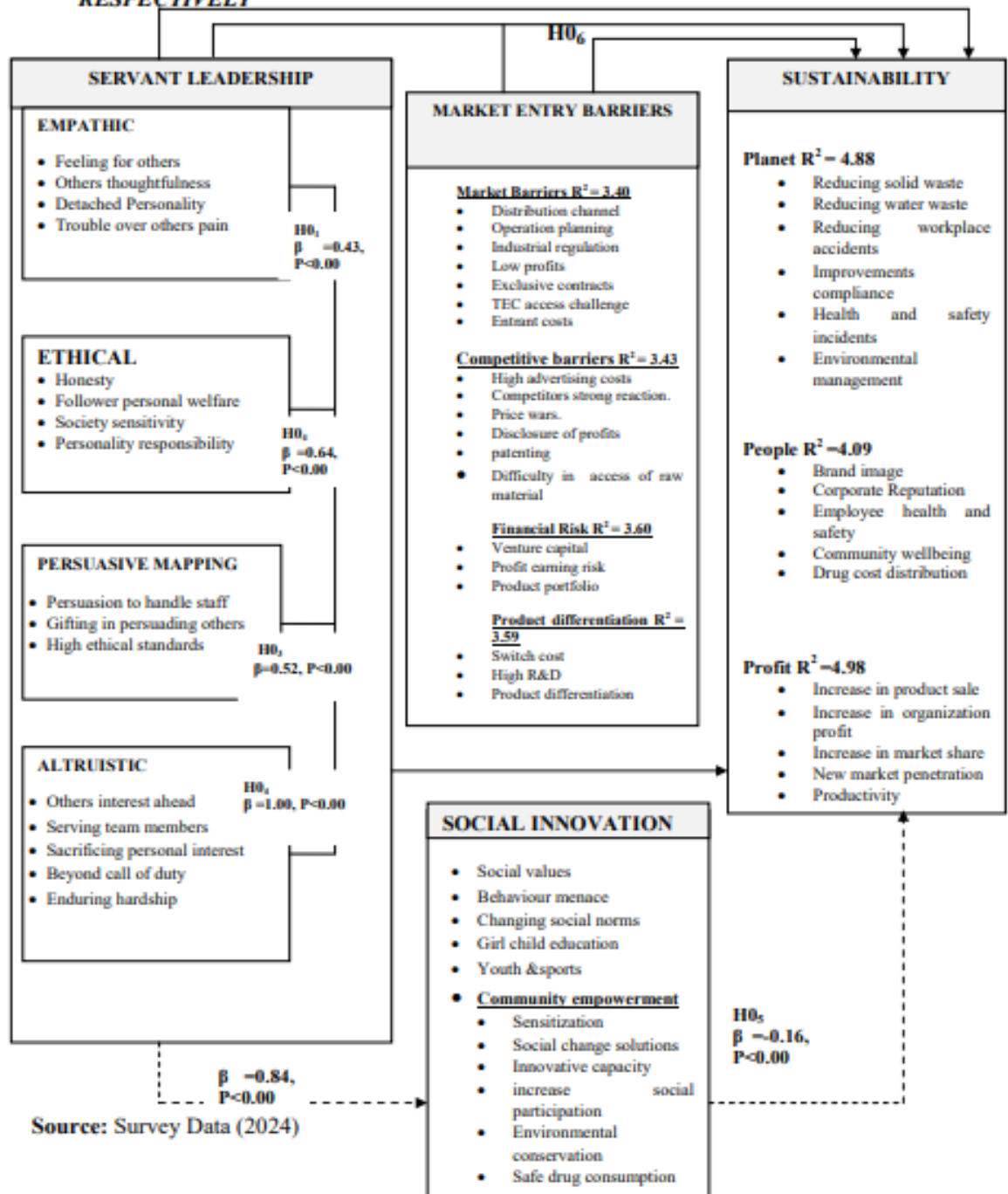
Lastly, the study makes a contribution suitable to inform the practice of leadership in organizations and society. Given the mixed experience registered in the study from the direct effects hypotheses which may lead to question the viability of servant leadership when adopted as a style of leadership, the explanations offered to argue on the possible reason for such findings tend to demonstrate the relevance of servant leadership in organizations. In addition, the introduction of the mediating and moderating variables helped to shed light on how organizations can apply servant leadership to make a positive contribution towards organizational outcomes that may relate with business performance goals such as entrepreneurial based social innovations. Towards this, the conceptual model adopted for the formulated hypotheses, and subjected to a rigorous statistical test through the structural equation modeling produced the path diagrams that support the logic and provides a framework in a validated form for application. Thus, the tested and validated conceptual framework is attached to this work to support this argument of the contribution of the study, not only to theory but to practice. Figure 25 and Figure 26 present the path analysis of the effect of servant leadership on sustainability as mediated and moderated respectively by social innovation and market entry barriers and the validated conceptual framework respectively.

**FIGURE 25: PATH ANALYSIS DIAGRAM showing EFFECT of SERVANT LEADERSHIP ON SUSTAINABILITY while MEDIATED and MODERATED by SOCIAL INNOVATION and MARKET ENTRY BARRIERS respectively**



$$\beta = 0.04, P < 0.00$$

**FIGURE 26: VALIDATED CONCEPTUAL FRAMEWORK showing EFFECT of SERVANT LEADERSHIP on SUSTAINABILITY with SOCIAL INNOVATION and MARKET ENTRY BARRIERS as MEDIATING and MODERATING FACTORS RESPECTIVELY**



### **Recommendations with Policy Implications**

The study makes several recommendations with policy implications. Arising out of the manner in which servant leadership has been understood and applied, the study calls upon the academia to undertake the initiative to help professionals in the pharmaceutical industry to better understand the nature of servant leadership and how it should be applied to account for better and positive outcomes in organizations. Secondly, the leaders of the pharmaceuticals distribution sector need to enhance understanding of the role of servant leadership among managers in different levels of management. Such an understanding would be created through, forums that are designed for capacity building so as to create awareness and sensitize the managers on the key tenets of servant leadership and how to apply each of them in their daily leadership practices. Since social innovation was found to have a mediating effect, the application of servant leadership by the top leadership of the industry needs to direct the behaviors of employees and their managers towards innovative behaviors that sees opportunities brought about by the challenges experienced in accessing not only the customers in the informal settlement areas but also in expanding into new markets.

### **Recommendations for further research**

The conclusions of this dissertation may be limited by a number of factors. Conceptually, the study used only four components of servant leadership. Extant literature provides a richer set of components of servant leadership that were not included. In addition, the manner in which social innovation brings about solutions at societal, organizational and individual levels was not integrated for measurement in this study. Secondly, the number of theories used to anchor the study from leadership were limited to the Greenleaf Model and LMX Model. In terms of methodology, even though in terms of statistical rigor, the study

used a robust structural equation model approach, the design did not embrace a mixed methods approach that would have allowed integration of qualitative data to better explain the why and how of the quantitative findings. In addition, even though the study alluded to complementarities identified at conceptual, theoretical and empirical levels touching on the constructs of the study and anchoring theories, the study did not undertake a joint effect analysis to explain the phenomenon as supported by the constructs that derive from the identified complementarity.

In view of these limitations, the study calls on future research to consider investigating the same phenomenon investigated using a much richer set of components of servant leadership. To enrich the conceptualization, researchers would need to consider a multidisciplinary based approach to allow for multiple theories to inform the conceptualization in mitigating against the identified limitations of the Greenleaf Model. In the same breadth, the future endeavors can consider integrating the role of the emerging economy context so as to explain its possible contingent effects on adoption and application of servant leadership. And in order to respond to the methodological challenges, the suggested research initiative needs to consider a mixed method design whereby, qualitative data is obtained from relevant respondents to assist in the interpretation of the quantitative data.

### **Chapter Summary**

This chapter concludes by summarizing its main findings conclusions and discussions . It starts with a brief overview of what was discovered through the data analysis giving a clear evidence of what was gathered. The conclusions drawn from the findings explain their significance and how they relate to theory, practice and policy. This discussion is based on the evidence presented offering insights to the broader implications of the research.

Additionally, the findings are explored in details, connecting them to existing literature and addressing any unexpected results. Lastly, the chapter sums up the essence of the study, synthesizing its key elements paving the way for future studies in the field.

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## Appendices

### Appendix I: Consent Statement

Dear Respondent,

I am a Doctor of Philosophy (PhD) student In Organizational Leadership at Pan African Christian University. As part of my studies, I am required to undertake research work in the area of my discipline. In this regard, I am undertaking a study entitled **“Effect of Social Innovation and Market Entry Barriers on the relationship between Servant Leadership and Sustainability of Pharmaceutical Distributors in Informal settlement Areas in Nairobi City County.”**

The intent of this letter is to kindly request your participation in the study through filling in the questionnaires, which will enable me to successfully undertake the study. Your participation in the study will be voluntary in nature and you will be free (if you so desire) to exit the study at any point during its execution. Your data will be held with utmost confidentiality and anonymity thus will only be used for the research work only. The researcher has sought and obtained varied research permits from relevant authorizing bodies.

I take this opportunity to thank you in Advance.

Yours faithfully,

Naomi Gaitho.

## **Appendix II: List of Pharmaceutical Manufacturers in Kenya**

1. Beta Healthcare International Ltd.
2. Biopharma Limited Concept (Africa Pharmaceuticals Ltd),
3. Didy Pharmaceutical Ltd.
4. GlaxoSmithKline (GSK) Pharmaceutical Ltd.
5. Dawa Ltd.
6. Elys Chemicals Industries Ltd,
7. Sphinx Pharmaceuticals Ltd.
8. PMC Ltd
9. Biodeal Ltd.
10. Cosmos Ltd.
11. Benmed Pharmaceuticals Ltd
12. Comet Healthcare Limited.
13. Concepts (Africa) Ltd
14. Didy Pharmaceuticals
15. Gesto Pharmaceuticals Ltd
16. Globe Pharmacy Ltd.
17. Harley's Limited.
18. Hightech Pharmaceuticals

19. Infusion (k) Ltd [IKL]
20. Infusion Medicare
21. Jaskam & Company Ltd.
22. KAM Industries Ltd.
23. Laboratories & Allied (Lab & Allied)
24. Mac's Pharmaceuticals
25. Medivet Products Ltd.
26. Regal Pharmaceuticals
27. Universal Corporation Ltd.
- 28. Dinlas Pharma EPZ Ltd**
29. Beta Healthcare International Ltd.
30. BiopharmaLimitedConcept(AfricaPharmaceuticalsLtd),
31. Didy Pharmaceutical Ltd.
32. GlaxoSmithKline(GSK)Pharmaceutical Ltd.
33. Dawa Ltd.
34. Elys Chemicals Industries Ltd,
35. Sphinx Pharmaceuticals Ltd.
36. PMC Ltd
37. Biodeal Ltd.
38. Cosmos Ltd.
39. Benmed Pharmaceuticals Ltd
40. Comet Healthcare Limited.
41. Concepts (Africa) Ltd
42. Didy Pharmaceuticals
43. Gesto Pharmaceuticals Ltd
44. Globe Pharmacy Ltd.
45. Harley's Limited.
46. Hightech Pharmaceuticals
47. Infusion (k) Ltd [IKL]
48. Infusion Medicare
49. Jaskam & Company Ltd.
50. KAM Industries Ltd.
51. Laboratories & Allied (Lab & Allied)
52. Mac's Pharmaceuticals
53. Medivet Products Ltd.
54. Regal Pharmaceuticals
55. Universal Corporation Ltd.
56. Dinlas Pharma EPZ Ltd.

**Source: (Justice, 2022)**

### Appendix III: Items Used to Generate the Questionnaire

| Construct                         | Studies Referred                                                          | Items                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Empathic<br>Servant<br>Leadership | Lawrence et al. (2004) and Batchelder, Brosnan, and Ashwin (2017) studies | <p>It affects me very much when one of my colleagues is upset</p> <p>I get very upset when I see someone cry</p> <p>I am not always interested in sharing others' happiness.</p> <p>The people I am with have a strong influence on my mood</p> <p>I tend to get emotionally involved with other employees' problems</p> <p>I care what happens to other people.</p> <p>I am good at understanding how my team members are feeling and what they are thinking</p> <p>My team members feel comfortable sharing their problems with me as their leader</p> <p>As a leader I am able to rapidly and intuitively tune into how my team members feel</p> <p>As a leader I am sensitive to the feelings of my team members and colleagues</p> <p>I try as much as possible to avoid hurting other peoples' feelings</p> <p>I enjoy caring for other people</p> <p>I consider each side to an argument before making a decision</p> <p>I strive to see how it would feel to be in someone else's situation before criticizing them.</p> <p>I consider myself to be good at predicting what actions we will</p> |

|                                      |                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                      |                                                                         | <p>take</p> <p>My team members see me as one who can easily work out what another person might want to talk about</p> <p>I am quick to spot when someone in a group is feeling awkward or uncomfortable</p> <p>I can tell if someone is masking their true emotion</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Ethical Servant leadership           | Ehrhart (2004), Liden et al. (2008); and Dodd et al. (2018)             | <p>My department manager holds department employees to high ethical standards.</p> <p>My department manager does what she or he promises to do.</p> <p>My manager would not compromise ethical principles in order to achieve success.</p> <p>My manager is always honest.</p> <p>My manager values honesty more than profits.</p> <p>People in my department are very sensitive to ethical problems.</p> <p>People in my department sympathize with someone who is having difficulties in their job.</p> <p>People in my department think of their own welfare first when faced with a difficult decision.</p> <p>People around here have a strong sense of responsibility to society and humanity.</p> <p>In my department people are willing to break the rules in order to advance in the company.</p> <p>No matter how much people around here are provoked, they are always responsible for whatever they do.</p> |
| Servant leadership by Persuasiveness | Barbuto and Wheeler (2006)                                              | <p>Persuasive mapping (= .87)</p> <p>This person offers compelling reasons to get me to do things.</p> <p>This person encourages me to dream “big dreams” about the organization.</p> <p>This person is very persuasive.</p> <p>This person is good at convincing me to do things.</p> <p><u>This person is gifted when it comes to persuading me.</u></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Altruistic Servant Leadership        | Barbuto and Wheeler (2006), Denis and Borcanea (2005)                   | <p>This person puts my best interests ahead of his/her own.</p> <p>This person does everything he/she can to serve me.</p> <p>This person sacrifices his/her own interests to meet my needs.</p> <p>This person goes above and beyond the call of duty to meet my needs</p> <p>My leader has made personal sacrifice(s) for me</p> <p>My leader has endured hardships, e.g. political, “turf wars,” etc. to defend me</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Market Entry Barriers                | Singh et al. (1998) and Lutz et al. (2010) and Couto and Barbosa (2020) | <ol style="list-style-type: none"> <li>1. It is difficult to have access to distribution and/or sales channels in the main market (potentially gaining access to customers).</li> <li>2. It is difficult to raise enough capital.</li> <li>3. It will be difficult to perceive the optimal scale of production (where the costs per product/service are lower).</li> <li>4. It is not easy to comply with industry-specific regulations (such as specific licenses, environmental requirements, etc.).</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                       |

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  | <p>5. It is difficult to get enough profit (to survive as a firm).</p> <p>6. It is difficult to gain access to specific technologies (possibly protected by patents).</p> <p>7. New entrants have a cost disadvantage compared to the established firms.</p> <p>8. The market is characterized by significant product/service differentiation.</p> <p>9. The switching costs that consumers have to bear when switching to new business products/services are high.</p> <p>10. Firms in this market have high R&amp;D expenditures.</p> <p>11. Firms in this market have high expenses in advertising and promotional campaigns.</p> <p>12. New entrants have a cost disadvantages to obtain capital compared to the established ones (high interest rates, more guarantees, etc.).</p> <p>13. New entrants have a greater financial risk (they are more likely to lose a lot of money).</p> <p>15. The firm's products/services within the market are heavily supported by advertising and promotional campaigns. This will make entry to the market less attractive to new entrants.</p> <p>16. Established firms offer many different products/services. It will not be easy for new entrant to create a new market (there are no more niches).</p> <p>17. There is a lot of investment in R&amp;D and the creation of patents. This will make entry to the market less attractive to new entrant.</p> <p>18. Established firms create the impression that they will have a reaction against the entry of new entrant in the market through the media and other means, with the intention of discouraging entry.</p> <p>19. Established firms set a lower price than the one that would be more profitable, to discourage the entry of new entrants in the market.</p> <p>20. Established firms try to prevent the profitability of their activities from becoming visible, which makes the attractiveness of the market less visible.</p> <p>21. Established firms patent their knowledge and discoveries which allows them to obtain exclusivity.</p> <p>22. Established firms ensure access to raw materials and intermediate products. They also restrict and make it difficult for new entrants to access these resources.</p> <p>23. Established firms ensure access to sales channels (access to customers) and restrict new firms' access to those channels (for example through exclusive contracts).</p> <p>24. Established firms make price agreements and other strategies with their competitors.</p> |
|--|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sustainability | Baliga et al.<br>(2019). | <p>Planet elements</p> <p>Reduction in solid and water waste</p> <p>Reduction in environmental accidents. A decrease in consumption of hazardous/toxic materials</p> <p>An improvement in environmental compliance</p> <p>Reduction in health and safety incidences</p> <p>Improvement in the image as a “good place to work in”</p> <p>Enhancement of corporate image as an ethical organisation</p> <p>Improved employee or community health and safety</p> <p>Reduction in costs of distribution</p> <p>Increase in sales of products</p> <p>Increase in organisational profits or profit margins</p> <p>Increase in market share for the organisation’s profits.</p> <p>Penetrated new markets</p> <p>Improvement in efficiency and productivity of distribution</p> <p>Improvement in inventory levels</p> |
|----------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Appendix IV: Questionnaire

**RESEARCH QUESTIONNAIRE**

Thank you for your willingness to participate in the study, titled: **Effects of Social Innovation and Market Entry Barriers on the relationship between Servant Leadership and Sustainability of Pharmaceutical Distributors in Informal Settlement Areas in Nairobi County**. The questionnaire has 5 sections where a 5 point Likert scale has been used. The data collected will be treated confidentially and only used for academic purposes to meet requirements for the PhD program at Pan African Christian University. Kindly do fill in the questionnaire to the best of your ability. In case of any concern, you may reach the researcher on: Mobile No.0722701718, Email: [magunye.gaitho@students.pacuniversity.ac.ke](mailto:magunye.gaitho@students.pacuniversity.ac.ke).

**PART I: GENERAL INFORMATION**

1. What is your gender? Male ( ) Female ( )
2. What is your highest education level? Secondary Level ( ) Certificate Level ( ) Graduate Level ( ) Post Graduate Level ( )
3. What is your work experience level? 0-3 years ( ) 3-6 years ( ) 7-10 years ( ) Over 10 years ( )
4. What is your management level in the organisation?  
Low Level ( ) Middle Level ( ) Senior Level ( )
5. What is your department in the organisation?  
Administration ( ) Human Resources ( ) Finance ( ) Sales and Marketing ( ) Logistics and Supply Chain ( ) Other ( ) Specify.....yy

**Location of Business/Place of Business operations (Tick ✓ as appropriate)**

- |                   |                          |
|-------------------|--------------------------|
| 1. Nairobi CBD    | <input type="checkbox"/> |
| 2. Westlands      | <input type="checkbox"/> |
| 3. Ngara area     | <input type="checkbox"/> |
| 4. Thika Road     | <input type="checkbox"/> |
| 5. Parklands area | <input type="checkbox"/> |
| 6. Mombasa road   | <input type="checkbox"/> |

**Informal settlement areas you supply drugs: ((Tick ✓ as many as are appropriate)**

- |                      |                          |
|----------------------|--------------------------|
| 1) Huruma Estate     | <input type="checkbox"/> |
| 2) Kariobangi        | <input type="checkbox"/> |
| 3) Mathare           | <input type="checkbox"/> |
| 4) Korogocho         | <input type="checkbox"/> |
| 5) Mukuru kwa Njenga | <input type="checkbox"/> |
| 6) Dandora           | <input type="checkbox"/> |
| 7) Kibera            | <input type="checkbox"/> |

**What are the key defining characteristics of the areas you distribute to (Tick ✓ as many as are appropriate)?**

- |                             |                          |
|-----------------------------|--------------------------|
| 1) High population density  | <input type="checkbox"/> |
| 2) Mostly low income arears | <input type="checkbox"/> |
| 3) Poor Road Infrastructure | <input type="checkbox"/> |
| 4) High Insecurity          | <input type="checkbox"/> |
| 5) High level of poverty    | <input type="checkbox"/> |
| 6) High level of illiteracy | <input type="checkbox"/> |

**PART II: SERVANT LEADERSHIP**

*This part of the Questionnaire focuses on the different attributes of servant leadership that a leader will need to demonstrate while carrying out work activities through the support of the followers in the work team or department. You are required to read each statement and express your opinion as to the degree you agree or disagree with the statement in a scale of 1-5 where: 1= Strongly Disagree, 2=Somewhat Disagree, 3=Neither Disagree nor Agree, 4=Somewhat Agree, 5= Strongly Agree.*

| Q/No. | Statement                                                                             | RESPONSE |   |   |   |   |
|-------|---------------------------------------------------------------------------------------|----------|---|---|---|---|
|       |                                                                                       | 1        | 2 | 3 | 4 | 5 |
| 1.    | It affects me very much when one of my colleagues is upset                            |          |   |   |   |   |
| 2.    | I get very upset when I see someone cry                                               |          |   |   |   |   |
| 3.    | I am not always interested in sharing others' happiness                               |          |   |   |   |   |
| 4.    | Followers around me have a strong influence on my mood                                |          |   |   |   |   |
| 5.    | I tend to get emotionally involved with other employee's problems                     |          |   |   |   |   |
| 7.    | I am empathetic with what happens to other people                                     |          |   |   |   |   |
| 8     | I am good at understanding how my team members are feeling and what they are thinking |          |   |   |   |   |
| 9.    | My team members feel comfortable sharing their problems with me as their leader       |          |   |   |   |   |
| 10.   | I am able to rapidly and intuitively tune into how my team members feel               |          |   |   |   |   |
| 11    | I am sensitive to the feelings of my team members and colleagues                      |          |   |   |   |   |
| 12    | I try as much as possible to avoid hurting other people's feelings                    |          |   |   |   |   |
| 13    | I enjoy caring for others                                                             |          |   |   |   |   |
| 14    | I consider each side to an argument before making a decision                          |          |   |   |   |   |
| 15    | I strive to see how it would feel to be in someone else's situation before            |          |   |   |   |   |

|                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                         |          |          |          |          |          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|
| 37                                                                                                                                                                                                                                                                                                                                                                                                      | I always go beyond the call of duty to meet the needs of others.                                                                        |          |          |          |          |          |
| 38                                                                                                                                                                                                                                                                                                                                                                                                      | I make a lot of personal sacrifice for my team members.                                                                                 |          |          |          |          |          |
| 39                                                                                                                                                                                                                                                                                                                                                                                                      | I have endured many hardships to defend my team members.                                                                                |          |          |          |          |          |
| <b>PART III: SOCIAL INNOVATION</b>                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                         |          |          |          |          |          |
| <i>The statements in this section are about the kind of innovations this organization has initiated to improve the welfare of the community you are operating in. Indicate the extent to which each of the listed innovation has been initiated and implemented in the community in a scale of 1 – 5 where 1 =None at All 2=, Slight Extent 3 =, Moderate Extent 4=High Extent, 5 =Very High Extent</i> |                                                                                                                                         |          |          |          |          |          |
| <b>Q/N<br/>o.</b>                                                                                                                                                                                                                                                                                                                                                                                       | <b>Type of Program</b>                                                                                                                  | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
| 1.                                                                                                                                                                                                                                                                                                                                                                                                      | Programs to Sensitize the community in the informal settlement areas to be more aware of their needs at individual and community level. |          |          |          |          |          |
| 2.                                                                                                                                                                                                                                                                                                                                                                                                      | Programs to Provide solutions for bringing about social change to the community.                                                        |          |          |          |          |          |
| 3.                                                                                                                                                                                                                                                                                                                                                                                                      | Deploying new techniques to increase the innovative capacity of the employees.                                                          |          |          |          |          |          |
| 4.                                                                                                                                                                                                                                                                                                                                                                                                      | Coming up with ideas to increase social participation in society                                                                        |          |          |          |          |          |
| 5.                                                                                                                                                                                                                                                                                                                                                                                                      | Programs promoting environmental conservation                                                                                           |          |          |          |          |          |
| 6.                                                                                                                                                                                                                                                                                                                                                                                                      | Programs promoting social values                                                                                                        |          |          |          |          |          |
| 7.                                                                                                                                                                                                                                                                                                                                                                                                      | Programs promoting safe drug consumption behaviours                                                                                     |          |          |          |          |          |
| 8.                                                                                                                                                                                                                                                                                                                                                                                                      | Programs targeting to change the community's social norms that hinder its development.                                                  |          |          |          |          |          |
| 9.                                                                                                                                                                                                                                                                                                                                                                                                      | Programs seeking to reduce street children behaviour.                                                                                   |          |          |          |          |          |
| 10.                                                                                                                                                                                                                                                                                                                                                                                                     | Programs promoting girl child education                                                                                                 |          |          |          |          |          |
| 11.                                                                                                                                                                                                                                                                                                                                                                                                     | Promoting youth sports programs                                                                                                         |          |          |          |          |          |
| 12.                                                                                                                                                                                                                                                                                                                                                                                                     | Programs promoting Social change                                                                                                        |          |          |          |          |          |
| 13.                                                                                                                                                                                                                                                                                                                                                                                                     | Employee Development programs to increase their innovative capacity.                                                                    |          |          |          |          |          |
| 14.                                                                                                                                                                                                                                                                                                                                                                                                     | Social participation programs.                                                                                                          |          |          |          |          |          |
| 15.                                                                                                                                                                                                                                                                                                                                                                                                     | Promoting social values                                                                                                                 |          |          |          |          |          |

|    |                                                                                                                                                              |  |  |  |  |  |  |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|
|    | criticizing them                                                                                                                                             |  |  |  |  |  |  |
| 16 | I consider myself to be good at predicting what actions the company will take                                                                                |  |  |  |  |  |  |
| 17 | I always offer compelling reasons to get my team members to do things.                                                                                       |  |  |  |  |  |  |
| 18 | I encourage team members to dream "big dreams" about the organization.                                                                                       |  |  |  |  |  |  |
| 19 | I am very persuasive when handling staff                                                                                                                     |  |  |  |  |  |  |
| 20 | I easily convince my team members to do the things required for their job.                                                                                   |  |  |  |  |  |  |
| 21 | Other people consider me to be well gifted when it comes to persuading others.                                                                               |  |  |  |  |  |  |
| 22 | I consider myself to be well gifted in persuading other people.                                                                                              |  |  |  |  |  |  |
| 23 | I hold the department's employees to high ethical standards.                                                                                                 |  |  |  |  |  |  |
| 24 | I endeavour to do what I promise to my team members                                                                                                          |  |  |  |  |  |  |
| 25 | I do not compromise ethical principles in order to achieve success                                                                                           |  |  |  |  |  |  |
| 26 | I seek to always be honest                                                                                                                                   |  |  |  |  |  |  |
| 27 | I value honesty more than profits                                                                                                                            |  |  |  |  |  |  |
| 28 | I sensitize my team to be very sensitive to ethical problems                                                                                                 |  |  |  |  |  |  |
| 29 | I emphasise that in my department team members think of their own welfare first when faced with a difficult decision.                                        |  |  |  |  |  |  |
| 30 | I have ensured a work environment in which both the leader and followers around here have a strong sense of responsibility to society and humanity.          |  |  |  |  |  |  |
| 31 | I have sensitized My team to demonstrate sensitivity to ethical problems                                                                                     |  |  |  |  |  |  |
| 32 | I have ensured that in my department team members are willing to break the rules in order to advance in the company.                                         |  |  |  |  |  |  |
| 33 | I have nurtured a team of followers who are such that no matter how much people around here are provoked , they always are responsible for whatever they do. |  |  |  |  |  |  |
| 34 | I put the interests of my team members ahead of mine                                                                                                         |  |  |  |  |  |  |
| 35 | I do everything I can to serve my team members                                                                                                               |  |  |  |  |  |  |
| 36 | I sacrifice my interests to meet the needs of others.                                                                                                        |  |  |  |  |  |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                        |          |          |          |          |          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|
| 16.                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Changing social norms holding the community backward                                                                                                   |          |          |          |          |          |
| <p align="center"><b>PART IV: MARKET ENTRY BARRIERS</b></p> <p><i>How would you describe the unique characteristics of your industry that either constrain or enhance the pharmaceutical distribution business you are doing. Kindly respond to the statements in this section as guided by the general observation in a scale of 1-5 where:</i></p> <p><i>1=No Extent, 2=Small Extent, 3=Moderate Extent, 4= Large Extent, and 5= Very Large Extent</i></p> |                                                                                                                                                        |          |          |          |          |          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>Statement</b>                                                                                                                                       | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <i>The pharmaceutical distribution business targeting the informal settlement areas in Nairobi County is such that :-</i>                              |          |          |          |          |          |
| 1                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Gaining access to distribution and/or sales channels is very difficult.                                                                                |          |          |          |          |          |
| 2                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Raising enough capital for the business is not easy.                                                                                                   |          |          |          |          |          |
| 3                                                                                                                                                                                                                                                                                                                                                                                                                                                            | It is difficult to perceive the optimal scale of production (where costs per product/service are lower).                                               |          |          |          |          |          |
| 4                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Complying with industry-specific regulations is a challenge ( Such as specific licenses, environmental requirements, etc.)                             |          |          |          |          |          |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                            | It is difficult to get enough profit (to survive as a firm).                                                                                           |          |          |          |          |          |
| 6                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Access to specific technologies is not easy.                                                                                                           |          |          |          |          |          |
| 7                                                                                                                                                                                                                                                                                                                                                                                                                                                            | New entrants have a cost disadvantage compared to the established firms.                                                                               |          |          |          |          |          |
| 8                                                                                                                                                                                                                                                                                                                                                                                                                                                            | The market is characterized by significant product/service differentiations.                                                                           |          |          |          |          |          |
| 9                                                                                                                                                                                                                                                                                                                                                                                                                                                            | The switching costs that consumers have to bear when switching to new business products/service are high.                                              |          |          |          |          |          |
| 10                                                                                                                                                                                                                                                                                                                                                                                                                                                           | The firms in the market incur high Research and Developments(R. & D) expenditures making the market less attractive.                                   |          |          |          |          |          |
| 11                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Firms in the market incur high expenses in advertising and promotional campaigns.                                                                      |          |          |          |          |          |
| 12                                                                                                                                                                                                                                                                                                                                                                                                                                                           | New entrants have a cost disadvantage in obtaining required capital compared to the established ones e.g. (High interest rates, more guarantees, etc). |          |          |          |          |          |
| 13                                                                                                                                                                                                                                                                                                                                                                                                                                                           | New entrants face a greater financial risk (They are more likely to lose a lot of money ).                                                             |          |          |          |          |          |

|    |                                                                                                                                                                                                                  |  |  |  |  |  |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|
| 14 | Established firms offer many different product/services thus making it difficult for new entrants to create a new market (There are no more niches).                                                             |  |  |  |  |  |
| 15 | Established firms in the market create the impression that they will have a reaction against the entry of new entrant in the market through the media and other means, with the intention of discouraging entry, |  |  |  |  |  |
| 16 | Established firms in the market set a lower price than the ones that would be more profitable, to discourage the entry of new entrants in the market.                                                            |  |  |  |  |  |
| 17 | Established firms try to prevent the profitability of their activities from becoming visible, which makes the attractiveness of the market less visible.                                                         |  |  |  |  |  |
| 18 | Established firms patent their knowledge and discoveries which allows them to obtain exclusivity.                                                                                                                |  |  |  |  |  |
| 19 | Established firms ensure access to raw materials and intermediate products. They also restrict and make it difficult for new entrants to access these resources.                                                 |  |  |  |  |  |
| 20 | Established firms offer exclusive contracts to distributors so as to restrict new firm's access to those channels (for example through exclusive contracts).                                                     |  |  |  |  |  |
| 21 | Established firms make price agreements and other strategies with their competitors.                                                                                                                             |  |  |  |  |  |

**PART V: SUSTAINABILITY OF PHARMACEUTICAL DISTRIBUTORS**

*The statements in this section are about the sustainability of your pharmaceutical distribution business. How do you rate your business sustainability in a scale of 1-5 where?*

*1 = No Extent, 2 =Small Extent, 3=Moderate Extent, 4=Large Extent, and 5=Very Large Extent*

| Statement |                                           | RESPONSE |       |         |         |            |
|-----------|-------------------------------------------|----------|-------|---------|---------|------------|
|           |                                           | 1-5%     | 5-10% | 10-15 % | 15 -20% | Above 20 % |
|           | <b>Environmental Aspects</b>              |          |       |         |         |            |
| 1         | Reducing solid waste                      |          |       |         |         |            |
| 2         | Reducing water waste                      |          |       |         |         |            |
| 3         | Reducing occupational workplace accidents |          |       |         |         |            |
| 4         | Reducing consumption of hazardous/ toxic  |          |       |         |         |            |

|                                                                                                                                                                                                                                                                      | substances                                                                   |          |       |        |        |           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----------|-------|--------|--------|-----------|
| 5                                                                                                                                                                                                                                                                    | Improvement in compliance with Environmental management standards.           |          |       |        |        |           |
| 6                                                                                                                                                                                                                                                                    | Reduction in health and safety incidences.                                   |          |       |        |        |           |
| 7                                                                                                                                                                                                                                                                    | Improvement in branding the image of the company as a good place to work in. |          |       |        |        |           |
| 8                                                                                                                                                                                                                                                                    | Earning a corporate reputation for being an ethical organization.            |          |       |        |        |           |
| 9                                                                                                                                                                                                                                                                    | Improving employee health and safety.                                        |          |       |        |        |           |
| 10                                                                                                                                                                                                                                                                   | Improving the wellbeing of the community.                                    |          |       |        |        |           |
| 11                                                                                                                                                                                                                                                                   | Reducing the costs of distributing drugs                                     |          |       |        |        |           |
| <b>BUSINESS PERFORMANCE</b>                                                                                                                                                                                                                                          |                                                                              |          |       |        |        |           |
| <i>In terms of Business Performance, how has your business grown in the last 5Years as you have been operating in this business? Respond to each of the dimensions of performance in a scale of 1-5, where: 1=1-5% ; 2=5-10% ; 3=10-15% ; 4=15-20% ; 5=Above 20%</i> |                                                                              |          |       |        |        |           |
| Q/N<br>o                                                                                                                                                                                                                                                             | Area of Business Performance                                                 | RESPONSE |       |        |        |           |
|                                                                                                                                                                                                                                                                      |                                                                              | 1-5%     | 5-10% | 10-15% | 15-20% | Above 20% |
| 1                                                                                                                                                                                                                                                                    | We have experienced Increase in sales of products by:-                       |          |       |        |        |           |
| 2                                                                                                                                                                                                                                                                    | We have experienced Increase in business profits by:-                        |          |       |        |        |           |
| 3                                                                                                                                                                                                                                                                    | We have experienced Increase in market share of:-                            |          |       |        |        |           |
| 4                                                                                                                                                                                                                                                                    | We have experienced Penetration into new markets by:-                        |          |       |        |        |           |
| 5                                                                                                                                                                                                                                                                    | We have experienced improvement in overall productivity by:-                 |          |       |        |        |           |

**THANK YOU FOR YOUR COOPERATION AND SUPPORT**

### Appendix V: Research Timelines

|                           | 2022 |     |         |     |           |     | 2023 |           |     |      |      |      |
|---------------------------|------|-----|---------|-----|-----------|-----|------|-----------|-----|------|------|------|
|                           | Jan  | Feb | Mar-Jul | Aug | Sep - Oct | Nov | Jan  | Feb - Apr | May | June | July | July |
| Topic Discussion          |      |     |         |     |           |     |      |           |     |      |      |      |
| Concept Paper Development |      |     |         |     |           |     |      |           |     |      |      |      |
| Proposal Development      |      |     |         |     |           |     |      |           |     |      |      |      |
| Proposal Defence          |      |     |         |     |           |     |      |           |     |      |      |      |
| Proposal Corrections      |      |     |         |     |           |     |      |           |     |      |      |      |
| NACOSTI application       |      |     |         |     |           |     |      |           |     |      |      |      |
| Pilot Study               |      |     |         |     |           |     |      |           |     |      |      |      |
| Data Collection           |      |     |         |     |           |     |      |           |     |      |      |      |
| Data Analysis & Write Up  |      |     |         |     |           |     |      |           |     |      |      |      |
| Project Defence           |      |     |         |     |           |     |      |           |     |      |      |      |
| Corrections               |      |     |         |     |           |     |      |           |     |      |      |      |
| Journal Publication       |      |     |         |     |           |     |      |           |     |      |      |      |

## Appendix VI: Research Budget

| <b>ITEM</b>                                  | <b>SUBTOTAL IN<br/>(KSHS)</b> |
|----------------------------------------------|-------------------------------|
| Research infrastructure (laptops and modems) | 68,000                        |
| Proposal printouts                           | 10,000                        |
| Nacosti Application                          | 2,000                         |
| Pilot Study                                  | 45,000                        |
| Data Collection Process                      | 155,000                       |
| SPSS Training and Data Analysis              | 35,000                        |
| Project Binding                              | 20,000                        |
| Journal Publication                          | 40,000                        |
| Sub Total                                    | 375,000                       |
| Miscellaneous (10%)                          | 37,500                        |
| <b>Grand Total</b>                           | <b>412,500</b>                |

## Appendix VII: Ethical Clearance Certificate

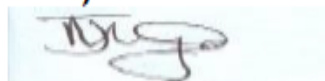
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                   |                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <h1>Certificate of<br/>Ethical<br/>Clearance</h1> |  <p>Pan Africa<br/>Christian University</p> <p>Thika Road Campus   Valley Road Campus<br/>P.O. Box 56875-00200   +254 730955000   +254 730955501/2<br/>enquiries@pacuniversity.ac.ke   www.pacuniversity.ac.ke</p> <p><b>INSTITUTIONAL<br/>SCIENTIFIC<br/>ETHICS REVIEW<br/>COMMITTEE<br/>(ISERC)</b></p> |
| <p style="text-align: center;"><b>This Certificate is awarded to</b></p> <p style="text-align: center;"><b>NAOMI MAGUNYE GAITHO</b></p> <hr style="width: 50%; margin: auto;"/> <p style="text-align: center;"><b>For the research titled</b></p> <p style="text-align: center;">EFFECTS OF SOCIAL INNOVATION AND MARKET ENTRY BARRIERS ON THE<br/>RELATIONSHIP BETWEEN SERVANT LEADERSHIP AND SUSTAINABILITY OF<br/>PHARMACEUTICAL DISTRIBUTORS IN INFORMAL SETTLEMENT AREAS OF NAIROBI<br/>COUNTY IN KENYA</p> <p>Ref/PAC/ISERC/018/4/23</p> <hr/> <p style="text-align: center;"><b>having complied with PAC University Institutional Scientific Ethics Review<br/>Committee's guidelines and Standard Operating Procedures for ethical<br/>clearance.</b></p> |                                                   |                                                                                                                                                                                                                                                                                                                                                                                              |

This Certificate is issued subject to compliance with the following requirements:

- i. Before commencing the study, you are required to obtain a Research License from the National Commission for Science, Technology and Innovation (NACOSTI) as well as other institutional clearances as and where needed.
- ii. Only approved documents including research instruments and informed consent forms will be used.
- iii. All changes including amendments and/or deviations are to be submitted for review and clearance by PAC University Institutional Scientific Ethics Review Committee before use.
- iv. Any expected or unexpected changes that may increase the risks to study participants or affect the integrity of the study must be reported in writing to PAC University Institutional Scientific Ethics Review Committee within two days.
- v. Any request for renewal or approval must be submitted to PAC University Institutional Scientific Ethics Review Committee at least four weeks prior to the expiry of this Certificate and must be accompanied by a comprehensive progress report to support the renewal.

|                      |                  |                    |                  |
|----------------------|------------------|--------------------|------------------|
| <b>Date of issue</b> | <b>28/4/2023</b> | <b>Expiry date</b> | <b>28/4/2024</b> |
|----------------------|------------------|--------------------|------------------|

**DR. JANE KINUTHIA**



**Secretary PAC\_ISERC**

## Appendix VIII: Nacosti Research License

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                      |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------|--|
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                    |  |
| <b>REPUBLIC OF KENYA</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  | <b>NATIONAL COMMISSION FOR<br/>SCIENCE, TECHNOLOGY &amp; INNOVATION</b>                                              |  |
| <b>Ref No: 913984</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | <b>Date of Issue: 10/May/2023</b>                                                                                    |  |
| <b>RESEARCH LICENSE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |                                                                                                                      |  |
| <p><b>This is to Certify that Ms. Naomi Magunya Githo of Pan African Christian University College, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: EFFECTS OF SOCIAL INNOVATION AND MARKET ENTRY BARRIERS ON THE RELATIONSHIP BETWEEN SERVANT LEADERSHIP AND SUSTAINABILITY OF PHARMACEUTICAL DISTRIBUTORS IN INFORMAL SETTLEMENT AREAS OF NAIROBI COUNTY IN KENYA for the period ending : 10/May/2024.</b></p> |  |                                                                                                                      |  |
| <b>License No: NACOSTI/P/23/25879</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                      |  |
| <b>Applicant Identification Number</b><br><b>913984</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | <b>Director General</b><br><b>NATIONAL COMMISSION FOR<br/>SCIENCE, TECHNOLOGY &amp; INNOVATION</b>                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | <b>Verification QR Code</b><br> |  |
| <p><b>NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.</b></p>                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                      |  |
| <b>See overleaf for conditions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                      |  |

**THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)**

Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

**CONDITIONS OF THE RESEARCH LICENSE**

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of international treaties of which Kenya is a signatory to
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way,
  - i. Endanger national security
  - ii. Adversely affect the lives of Kenyans
  - iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
  - iv. Result in exploitation of intellectual property rights of communities in Kenya
  - v. Adversely affect the environment
  - vi. Adversely affect the rights of communities
  - vii. Endanger public safety and national cohesion
  - viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. The license any rights thereunder are non-transferable
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

National Commission for Science, Technology and  
Innovation (NACOSTI),  
Off Waiyaki Way, Upper Kabete,  
P. O. Box 30623 - 00100 Nairobi, KENYA  
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